

# Day 3, Part 1: Manipulating Data using Tidyverse

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# Agenda

1. Pseudocode!
2. Welcome to the Tidyverse!
3. The pipe
4. Main tidyverse functions:
  1. Arrange and filter rows
  2. Select and mutate columns
5. Joining dataframes

# Pseudocode

- What do you do if you're not sure how to write something in code?
- You write *pseudocode* first, and gradually change it into code.
- Very helpful for thinking about how to convert something from your language into the language of computers!

# Writing Pseudocode

## Write down your goal in steps

- 1 With a dataframe called 'people'
- 2 that has names and ages of people in my study
- 3 I need to calculate the age of people older t

## Write pseudocode

- 1 For data frame 'people',
- 2 Find rows where 'age' is greater than 20,
- 3 From these rows, calculate the mean of 'age'

## Slowly turn pseudocode into code...

- 1 With data frame 'people',
- 2 Use `filter()` to select rows where 'age' > 20,
- 3 Use `summarise()` with `mean()` to
- 4 calculate mean 'age' of these rows.

## Until you have code!

```
1 library(dplyr)
2
3 people %>%
4   filter(age > 20) %>%
5   summarise(mean_age = mean(age))
```

**Welcome to the Tidyverse!**

# What is the Tidyverse?

- A *package* is a themed collection of functions and datasets for doing something.
- Tidyverse is a *package of packages*.



## R packages for data science

The tidyverse is an opinionated **collection of R packages** designed for data science. All packages share an underlying design philosophy, grammar, and data structures.

Install the complete tidyverse with:

```
install.packages("tidyverse")
```

# The Pipe



# The Pipe

- In the `magrittr` package, which is part of `tidyverse`
- The greatest invention since sliced bread
- The **pipe** ( `%>%` | ctrl shift M ) allows you to express a sequence of multiple operations clearly.
- Using the pipe is like writing “For object x, do this, *then* do this”.

## without the pipe:

get a box

see this box? color it blue

see this blue box? make it bigger

see this big blue box? open it

see this big blue open box? throw it  
away

## with the pipe:

get a box

then color it blue

then make it bigger

then open it

then throw it away



# The Pipe

“Assign 2 to x, and then add 3, and then subtract 4, and then print x”:

```
1 library(magrittr) # has pipe
2 x <- 2
3 x <- add(x, 3)
4 x <- subtract(x, 4)
5 print(x)
```

[1] 1

```
1 library(magrittr) # has pipe
2 x <- 2 %>%
3   add(3) %>%
4   subtract(4) %>%
5   print()
```

[1] 1

- The pipe **passes** the object into the first argument of the next function
  - The first argument becomes “invisible” to you.
- This is very useful for data manipulation using tidyverse, because the first argument is almost always the df you are working on.

# The Pipe: when NOT to use it

- But pipes aren't always the best way to go about things. For example, when doing arithmetic operations, this is simpler:

```
1 x <- print(2 + 3 - 4)
```

```
[1] 1
```

- You also don't want to use pipes if:
  - You want to look at “intermediate” objects in between steps (assign them new names!)
  - You use functions that don't accept your dataframe as the first argument.

# Main Tidyverse Functions

- `group_by()` and `summarise()` data
- `arrange()` and `filter()` rows
- `select()` and `mutate()` columns

# eruptions

To explain the main Tidyverse functions, we will be using the [eruptions](#) dataset:

volcano_number	volcano_name	country	last_known_eruption	year	primary_v
210010	West Eifel Volcanic Field	Germany	8300 BCE	-8300	Volcanic fi
210020	Chaîne des Puys	France	4040 BCE	-4040	Lava dome
210030	Olot Volcanic Field	Spain	Unknown	NA	Volcanic fi
210040	Calatrava Volcanic Field	Spain	3600 BCE	-3600	Volcanic fi
211004	Colli Albani	Italy	Unknown	NA	Caldera
211010	Campi Flegrei	Italy	1538 CE	1538	Caldera

211020	Vesuvius	Italy	1944 CE	1944	Stratovolc
211030	Ischia	Italy	1302 CE	1302	Complex
211031	Palinuro	Italy	8040 BCE	-8040	Submarine
211040	Stromboli	Italy	2023 CE	2023	Stratovolc
211041	Panarea	Italy	Unknown	NA	Stratovolc
211042	Lipari	Italy	1230 CE	1230	Stratovolc

211050	Vulcano	Italy	1890 CE	1890	Stratovolc
211060	Etna	Italy	2023 CE	2023	Stratovolc
211070	Campi Flegrei del Mar di Sicilia	Italy	1867 CE	1867	Submarine
211071	Pantelleria	Italy	1891 CE	1891	Shield
211080	Marsili	Italy	1050 BCE	-1050	Submarine
212020	Methana	Greece	258 BCE	-258	Lava dome
212030	Milos	Greece	140 CE	140	Stratovolc

212040	Santorini	Greece	1950 CE	1950	Shield(s)
212050	Nisyros	Greece	1888 CE	1888	Stratovolc
212051	Yali	Greece	Unknown	NA	Lava dome
213000	Kula	Turkey	Unknown	NA	Volcanic fi
213001	Karapinar Field	Turkey	Unknown	NA	Volcanic fi
213002	Hasan Dagı	Turkey	Unknown	NA	Stratovolc
213003	Gollu Dag	Turkey	Unknown	NA	Lava dome

213004	Acigol-Nevsehir	Turkey	2080 BCE	-2080	Caldera
213010	Erciyes Dagı	Turkey	6880 BCE	-6880	Stratovolcano
213011	Karaca Dag	Turkey	Unknown	NA	Shield
213020	Nemrut Dagı	Turkey	1650 CE	1650	Stratovolcano
213030	Tenduruk Dagı	Turkey	1855 CE	1855	Shield
213040	Ararat	Turkey	1840 CE	1840	Stratovolcano
214010	Elbrus	Russia	50 CE	50	Stratovolcano
214020	Kazbek	Georgia	750 BCE	-750	Stratovolcano



214050	Samsari Volcanic Center	Georgia	Unknown	NA	Lava cone
214060	Aragats	Armenia	Unknown	NA	Stratovolc
214070	Ghegham Volcanic Ridge	Armenia	1900 BCE	-1900	Volcanic fi
214080	Vaiyots-Sar	Armenia	2000 BCE	-2000	Pyroclasti
214090	Porak	Armenia-Azerbaijan	778 BCE	-778	Volcanic fi
214100	Tskhouk-Karckar	Armenia-Azerbaijan	3000 BCE	-3000	Pyroclasti
221010	Tair, Jebel at	Yemen	2008 CE	2008	Stratovolc
221020	Zubair Group	Yemen	2013 CE	2013	Shield

221021	Zukur	Yemen	Unknown	NA	Shield
221022	Hanish	Yemen	Unknown	NA	Shield
221040	Alid	Eritrea	Unknown	NA	Stratovolc
221041	Dallol	Ethiopia	2011 CE	2011	Explosion
221050	Gada Ale	Ethiopia	Unknown	NA	Stratovolc
221060	Alu-Dalafilla	Ethiopia	2008 CE	2008	Fissure ve

221071	Bora Ale	Ethiopia	Unknown	NA	Stratovolc
221080	Erta Ale	Ethiopia	2023 CE	2023	Shield
221090	Ale Bagu	Ethiopia	Unknown	NA	Stratovolc
221091	Hayli Gubbi	Ethiopia	Unknown	NA	Shield
221100	Dubbi	Eritrea	1861 CE	1861	Stratovolc
221101	Nabro	Eritrea	2012 CE	2012	Stratovolc
221102	Mallahle	Ethiopia-	Unknown	NA	Stratovolc

Eritrea

221103	Sork Ale	Ethiopia- Eritrea	Unknown	NA	Stratovolc
221104	Asavyo	Ethiopia	Unknown	NA	Shield
221105	Mat Ala	Ethiopia	Unknown	NA	Shield
221106	Tat Ali	Ethiopia	Unknown	NA	Shield
221107	Borawli	Ethiopia	Unknown	NA	Stratovolc
221110	Afdera	Ethiopia	Unknown	NA	Stratovolc

221111	Ma Alalta	Ethiopia	Unknown	NA	Stratovolc
221112	Alayta	Ethiopia	1915 CE	1915	Shield
221113	Dabbahu	Ethiopia	2005 CE	2005	Stratovolc
221114	Dabbayra	Ethiopia	Unknown	NA	Shield
221115	Manda Hararo	Ethiopia	2009 CE	2009	Shield(s)
221116	Groppo	Ethiopia	Unknown	NA	Volcanic fi

221120	Kurub	Ethiopia	Unknown	NA	Shield
221122	Manda-Inakir	Ethiopia- Djibouti	1928 CE	1928	Fissure ve
221123	Mousa Alli	Ethiopia- Eritrea- Djibouti	Unknown	NA	Stratovolc
221124	Gufa	Eritrea- Djibouti	Unknown	NA	Volcanic fi
221125	Assab Volcanic Field	Eritrea	Unknown	NA	Volcanic fi
221126	Ardoukoba	Djibouti	1978 CE	1978	Fissure ve

221127	Manda Gargori	Ethiopia	Unknown	NA	Fissure ve
221141	Dama Ali	Ethiopia	1631 CE	1631	Shield
221150	Gabillema	Ethiopia	Unknown	NA	Stratovolc
221151	Yangudi	Ethiopia	Unknown	NA	Complex
221160	Ayelu	Ethiopia	Unknown	NA	Stratovolc
221170	Adwa	Ethiopia	Unknown	NA	Stratovolc

221171	Hertali	Ethiopia	Unknown	NA	Fissure ve
221172	Liado Hayk	Ethiopia	Unknown	NA	Volcanic fi
221180	Dofan	Ethiopia	Unknown	NA	Shield
221190	Fentale	Ethiopia	1820 CE	1820	Stratovolc
221191	Beru	Ethiopia	Unknown	NA	Volcanic fi
221200	Kone	Ethiopia	1820 CE	1820	Caldera(s)
221210	Boset-Bericha	Ethiopia	Unknown	NA	Stratovolc
221220	Bishoftu Volcanic	Ethiopia	Unknown	NA	Volcanic fi



Field					
221222	Sodore	Ethiopia	Unknown	NA	Volcanic fi
221230	Gedamsa	Ethiopia	Unknown	NA	Caldera
221240	Bora-Bericcio	Ethiopia	Unknown	NA	Pyroclasti
221250	Tullu Moye	Ethiopia	1900 CE	1900	Pyroclasti
221251	Unnamed	Ethiopia	Unknown	NA	Fissure ve
221252	East Ziway	Ethiopia	Unknown	NA	Fissure ve
221260	Butajiri-Silti Field	Ethiopia	Unknown	NA	Volcanic fi
221270	Aluto	Ethiopia	50 BCE	-50	Stratovolc

221280	O'a Caldera	Ethiopia	Unknown	NA	Caldera
221290	Corbetti Caldera	Ethiopia	Unknown	NA	Caldera
221291	Bilate River Field	Ethiopia	Unknown	NA	Maar(s)
221292	Tepi	Ethiopia	Unknown	NA	Shield
221294	Northern Lake Abaya Volcanic Field	Ethiopia	Unknown	NA	Volcanic fi
221311	East Chamo Basin	Ethiopia	Unknown	NA	Pyroclasti
221320	Korath Range	Ethiopia	Unknown	NA	Tuff cone(

221330	Mega Volcanic Field	Ethiopia	Unknown	NA	Volcanic fi
222001	North Island	Kenya	Unknown	NA	Tuff cone(
222010	Central Island	Kenya	Unknown	NA	Tuff cone(
222020	South Island	Kenya	1888 CE	1888	Stratovolc
222021	Marsabit	Kenya	Unknown	NA	Shield
222030	Barrier, The	Kenya	1921 CE	1921	Shield
222040	Namarunu	Kenya	6550 BCE	-6550	Shield
222050	Segeberua Plateau	Kenya	Unknown	NA	Pyroclasti

222051	Emuruangogolak	Kenya	1910 CE	1910	Shield
222052	Silali	Kenya	5050 BCE	-5050	Shield
222053	Paka	Kenya	7550 BCE	-7550	Shield
222054	Korosi	Kenya	Unknown	NA	Shield
222055	OI Kokwe	Kenya	Unknown	NA	Shield
222056	Nyambeni Hills	Kenya	Unknown	NA	Shield
222060	Menengai	Kenya	6050 BCE	-6050	Shield
222070	Homa Mountain	Kenya	Unknown	NA	Complex

222071	Elmenteita Badlands	Kenya	Unknown	NA	Pyroclasti
222080	Eburru, Ol Doinyo	Kenya	Unknown	NA	Complex
222090	Olkaria	Kenya	1770 CE	1770	Pyroclasti
222100	Longonot	Kenya	1863 CE	1863	Stratovolc
222110	Suswa	Kenya	Unknown	NA	Shield
222120	Lengai, Ol Doinyo	Tanzania	2023 CE	2023	Stratovolc
222130	Chyulu Hills	Kenya	1855 CE	1855	Volcanic fi
222160	Meru	Tanzania	1910 CE	1910	Stratovolc

222161	Igwisi Hills	Tanzania	10450 BCE	-10450	Pyroclasti
222164	Ngozi	Tanzania	1450 CE	1450	Caldera
222166	Rungwe	Tanzania	1250 CE	1250	Stratovolc
222170	Kyejo	Tanzania	1800 CE	1800	Stratovolc
223001	Fort Portal	Uganda	2120 BCE	-2120	Volcanic fi
223002	Kyatwa	Uganda	Unknown	NA	Volcanic fi
223003	Katwe-Kikorongo	Uganda	Unknown	NA	Volcanic fi
223004	Bunyaruguru	Uganda	Unknown	NA	Volcanic fi

223005	Katunga	Uganda	Unknown	NA	Volcanic fi
223020	Nyamulagira	DR Congo	2023 CE	2023	Shield
223030	Nyiragongo	DR Congo	2023 CE	2023	Stratovolc
223040	Karisimbi	DR Congo- Rwanda	8050 BCE	-8050	Stratovolc
223050	Visoke	DR Congo- Rwanda	1957 CE	1957	Stratovolc
223060	Muhavura	Uganda- Rwanda	Unknown	NA	Stratovolc
223070	Bufumbira	Uganda	Unknown	NA	Volcanic fi
224002	San Carlos	Equatorial	Unknown	NA	Shield

## Guinea

224003	San Joaquin	Equatorial Guinea	Unknown	NA	Shield
224004	Santa Isabel	Equatorial Guinea	1923 CE	1923	Shield
224010	Cameroon	Cameroon	2000 CE	2000	Stratovolc
224011	Tombel Graben	Cameroon	Unknown	NA	Volcanic fi
224030	Oku Volcanic Field	Cameroon	Unknown	NA	Volcanic fi
225001	Todra Volcanic Field	Niger	Unknown	NA	Volcanic fi
225004	Tahalra Volcanic Field	Algeria	Unknown	NA	Volcanic fi
225005	Atakor Volcanic	Algeria	Unknown	NA	Volcanic fi



Field					
225006	Manzaz Volcanic Field	Algeria	Unknown	NA	Volcanic fi
225009	Toh, Tarso	Chad	Unknown	NA	Volcanic fi
225010	Tousside, Tarso	Chad	Unknown	NA	Stratovolc
225020	Voon, Tarso	Chad	Unknown	NA	Stratovolc
225021	Koussi, Emi	Chad	Unknown	NA	Pyroclasti
225030	Marra, Jebel	Sudan	2000 BCE	-2000	Volcanic fi
225040	Kutum Volcanic Field	Sudan	Unknown	NA	Volcanic fi
225050	Meidob Volcanic	Sudan	2950 BCE	-2950	Volcanic fi

# Field

225060	Bayuda Volcanic Field	Sudan	850 CE	850	Volcanic fi
231001	Ash Shaam, Harrat	Syria-Jordan-Saudi Arabia	2670 BCE	-2670	Volcanic fi
231040	Lunayyir, Harrat	Saudi Arabia	1000 CE	1000	Volcanic fi
231050	Ithnayn, Harrat	Saudi Arabia	Unknown	NA	Volcanic fi
231060	Khaybar, Harrat	Saudi Arabia	650 CE	650	Volcanic fi
231070	Rahat, Harrat	Saudi Arabia	1256 CE	1256	Volcanic fi
231071	Kishb, Harrat	Saudi Arabia	Unknown	NA	Volcanic fi
231072	Birk, Harrat al	Saudi Arabia	Unknown	NA	Volcanic fi

231080	Yar, Jabal	Saudi Arabia	1810 CE	1810	Volcanic fi
231090	Arhab, Harra of	Yemen	500 CE	500	Volcanic fi
231100	Marha, Jabal el-	Yemen	Unknown	NA	Tuff cone
231110	Haylan, Jabal	Yemen	1200 BCE	-1200	Volcanic fi
231120	Dhamar, Harras of	Yemen	Unknown	NA	Volcanic fi
231160	Sawad, Harra Es-	Yemen	1253 CE	1253	Volcanic fi
231170	Balhaf-Bir Ali Volcanic Field	Yemen	Unknown	NA	Volcanic fi

231180	Bir Borhut	Yemen	Unknown	NA	Volcanic fi
232010	Damavand	Iran	5350 BCE	-5350	Stratovolc
233001	Grille, La	Comoros	Unknown	NA	Shield
233005	Mayotte	France	2019 CE	2019	Shield
233010	Karthala	Comoros	2007 CE	2007	Shield
233011	Ambre-Bobaomby	Madagascar	Unknown	NA	Volcanic fi
233012	Nosy-Be	Madagascar	Unknown	NA	Volcanic fi
233013	Ankaizina Field	Madagascar	Unknown	NA	Volcanic fi

233014	Itasy Volcanic Field	Madagascar	6050 BCE	-6050	Volcanic fi
233015	Vakinankaratra	Madagascar	Unknown	NA	Volcanic fi
233020	Fournaise, Piton de la	France	2022 CE	2022	Shield
234000	Boomerang Seamount	France	1995 CE	1995	Submarine
234001	Amsterdam Island	France	Unknown	NA	Stratovolc
234002	St. Paul	France	1793 CE	1793	Stratovolc
234010	Heard	Australia	2023 CE	2023	Stratovolc
234011	McDonald Islands	Australia	2005 CE	2005	Complex

234020	Kerguelen Islands	France	Unknown	NA	Stratovolc
234030	Est, Ile de l'	France	Unknown	NA	Stratovolc
234040	Possession, Ile de la	France	Unknown	NA	Stratovolc
234050	Cochons, Ile aux	France	Unknown	NA	Stratovolc
234060	Prince Edward Island	South Africa	Unknown	NA	Shield
234070	Marion Island	South Africa	2004 CE	2004	Shield(s)
241010	Kaikohe-Bay of Islands	New Zealand	400 CE	400	Volcanic fi
241020	Auckland Volcanic Field	New Zealand	1446 CE	1446	Volcanic fi

241021	Mayor Island	New Zealand	5060 BCE	-5060	Shield
241030	Taranaki	New Zealand	1800 CE	1800	Stratovolc
241040	Whakaari/White Island	New Zealand	2019 CE	2019	Stratovolc
241050	Okataina	New Zealand	1981 CE	1981	Lava dome
241070	Taupo	New Zealand	260 CE	260	Caldera
241080	Tongariro	New Zealand	2012 CE	2012	Stratovolc

241100	Ruapehu	New Zealand	2007 CE	2007	Stratovolcano
241101	Clark	New Zealand	Unknown	NA	Submarine
241102	Tangaroa	New Zealand	Unknown	NA	Submarine
241110	Rumble V	New Zealand	Unknown	NA	Submarine
241120	Rumble IV	New Zealand	Unknown	NA	Submarine
241130	Rumble III	New Zealand	2008 CE	2008	Submarine
241131	Rumble II West	New Zealand	Unknown	NA	Submarine
241140	Healy	New Zealand	1360 CE	1360	Submarine



241150	Brothers	New Zealand	Unknown	NA	Submarine
242001	Wright	New Zealand	Unknown	NA	Submarine
242005	Havre Seamount	New Zealand	2012 CE	2012	Submarine
242010	Curtis Island	New Zealand	Unknown	NA	Submarine
242021	Macauley	New Zealand	4360 BCE	-4360	Caldera
242022	Giggenbach	New Zealand	Unknown	NA	Submarine
242030	Raoul Island	New Zealand	2006 CE	2006	Stratovolc

242050	Monowai	New Zealand	2014 CE	2014	Stratovolcano
243001	Unnamed	Tonga	Unknown	NA	Submarine
243010	Unnamed	Tonga	1932 CE	1932	Submarine
243011	Unnamed	Tonga	Unknown	NA	Submarine
243030	Unnamed	Tonga	2017 CE	2017	Submarine
243040	Hunga Tonga- Hunga Ha'apai	Tonga	2022 CE	2022	Submarine
243050	Fonuafo'ou	Tonga	1936 CE	1936	Submarine
243060	Tofua	Tonga	2023 CE	2023	Caldera

243061	Kao	Tonga	1847 CE	1847	Stratovolc
243070	Lateiki	Tonga	2019 CE	2019	Submarine
243080	Home Reef	Tonga	2022 CE	2022	Submarine
243090	Late	Tonga	1854 CE	1854	Stratovolc
243091	Unnamed	Tonga	2019 CE	2019	Submarine
243100	Fonualei	Tonga	1957 CE	1957	Stratovolc
243101	Tafari	Tonga	Unknown	NA	Stratovolc
243102	Curacoa	Tonga	1979 CE	1979	Submarine

243110	Niuafo'ou	Tonga	1985 CE	1985	Shield
243111	Dugong	Tonga	Unknown	NA	Submarine
243112	Lobster	Tonga	Unknown	NA	Submarine
243120	Tafu-Maka	Tonga	2008 CE	2008	Submarine
243130	West Mata	Tonga	2009 CE	2009	Submarine
243140	Niuatahi	Tonga	Unknown	NA	Caldera
244000	Vailulu'u	United States	2003 CE	2003	Submarine
244001	Ta'u	United States	Unknown	NA	Shield
244010	Ofu-Olosega	United States	1866 CE	1866	Shield(s)

States					
244020	Tutuila	United States	440 CE	440	Tuff cone(
244021	Malumalu	United States	Unknown	NA	Submarine
244030	Upolu	Samoa	Unknown	NA	Shield
244040	Savaii	Samoa	1911 CE	1911	Shield
245010	Taveuni	Fiji	1550 CE	1550	Shield
245020	Koro	Fiji	Unknown	NA	Pyroclasti
245030	Nabukelevu	Fiji	1660 CE	1660	Lava dome

250010	St. Andrew Strait	Papua New Guinea	1957 CE	1957	Complex
250020	Baluan	Papua New Guinea	Unknown	NA	Stratovolc
250030	Central Bismarck Sea	Papua New Guinea	1972 CE	1972	Submarine
251001	Blup Blup	Papua New Guinea	Unknown	NA	Stratovolc
251002	Kadovar	Papua New Guinea	2023 CE	2023	Stratovolc
251010	Bam	Papua New Guinea	1960 CE	1960	Stratovolc

251011	Boisa	Papua New Guinea	Unknown	NA	Stratovolc
251020	Manam	Papua New Guinea	2023 CE	2023	Stratovolc
251030	Karkar	Papua New Guinea	1979 CE	1979	Stratovolc
251041	Hankow Reef	Papua New Guinea	Unknown	NA	Submarine
251050	Long Island	Papua New Guinea	1993 CE	1993	Complex
251060	Umboi	Papua New Guinea	Unknown	NA	Complex

251070	Ritter Island	Papua New Guinea	2007 CE	2007	Stratovolc
251080	Sakar	Papua New Guinea	Unknown	NA	Stratovolc
252010	Langila	Papua New Guinea	2023 CE	2023	Complex
252021	Mundua	Papua New Guinea	Unknown	NA	Complex
252030	Garove	Papua New Guinea	Unknown	NA	Stratovolc
252040	Dakataua	Papua New Guinea	1895 CE	1895	Caldera
252050	Bola	Papua New Guinea	Unknown	NA	Stratovolc



## Guinea

252060	Garua Harbour	Papua New Guinea	Unknown	NA	Volcanic fi
252070	Krummel-Garbuna-Welcker	Papua New Guinea	2008 CE	2008	Stratovolc
252071	Lolo	Papua New Guinea	Unknown	NA	Stratovolc
252080	Witori	Papua New Guinea	2012 CE	2012	Caldera
252090	Sulu Range	Papua New Guinea	Unknown	NA	Stratovolc
252100	Hargy	Papua New	950 CE	950	Stratovolc

Guinea

252110	Bamus	Papua New Guinea	1886 CE	1886	Stratovolc
252120	Ulawun	Papua New Guinea	2023 CE	2023	Stratovolc
252130	Lolobau	Papua New Guinea	1912 CE	1912	Caldera
252140	Rabaul	Papua New Guinea	2014 CE	2014	Pyroclasti
252150	Tavui	Papua New Guinea	4946 BCE	-4946	Caldera
253010	Lamington	Papua New Guinea	1956 CE	1956	Stratovolc

253011	Hydrographers Range	Papua New Guinea	Unknown	NA	Stratovolc
253021	Managlase Plateau	Papua New Guinea	Unknown	NA	Volcanic fi
253030	Victory	Papua New Guinea	1935 CE	1935	Stratovolc
253031	Sessagara	Papua New Guinea	Unknown	NA	Volcanic fi
253040	Waiowa	Papua New Guinea	1944 CE	1944	Pyroclasti
253041	Goodenough	Papua New Guinea	Unknown	NA	Volcanic fi

253050	Iamalele	Papua New Guinea	Unknown	NA	Lava dome
253060	Dawson Strait Group	Papua New Guinea	1350 CE	1350	Volcanic fi
254010	Lihir	Papua New Guinea	Unknown	NA	Compound
254020	Ambitle	Papua New Guinea	350 BCE	-350	Stratovolc
255010	Balbi	Papua New Guinea	Unknown	NA	Stratovolc
255011	Billy Mitchell	Papua New Guinea	1580 CE	1580	Pyroclasti

255020	Bagana	Papua New Guinea	2023 CE	2023	Lava cone
255021	Takuan Group	Papua New Guinea	Unknown	NA	Compound
255030	Loloru	Papua New Guinea	1050 BCE	-1050	Pyroclasti
255050	Simbo	Solomon Islands	1910 CE	1910	Stratovolc
255052	Kana Keoki	Solomon Islands	Unknown	NA	Submarine
255053	Coleman Seamount	Solomon Islands	Unknown	NA	Submarine

255060	Kavachi	Solomon Islands	2023 CE	2023	Submarine
255061	Unnamed	Solomon Islands	Unknown	NA	Submarine
255062	Gallego	Solomon Islands	Unknown	NA	Volcanic fi
255070	Savo	Solomon Islands	1847 CE	1847	Stratovolc
256010	Tinakula	Solomon Islands	2023 CE	2023	Stratovolc
257001	Motlav	Vanuatu	Unknown	NA	Stratovolc

257010	Suretamatai	Vanuatu	1966 CE	1966	Complex
257020	Gaua	Vanuatu	2022 CE	2022	Stratovolc
257021	Mere Lava	Vanuatu	Unknown	NA	Stratovolc
257030	Ambae	Vanuatu	2023 CE	2023	Shield
257040	Ambrym	Vanuatu	2022 CE	2022	Pyroclasti

257050	Lopevi	Vanuatu	2007 CE	2007	Stratovolc
257060	Epi	Vanuatu	2023 CE	2023	Stratovolc
257070	Kuwae	Vanuatu	1974 CE	1974	Caldera
257080	NE Shepherd Islands	Vanuatu	Unknown	NA	Stratovolc
257081	North Vate	Vanuatu	Unknown	NA	Stratovolc



257090	Traitor's Head	Vanuatu	1881 CE	1881	Stratovolc
257100	Yasur	Vanuatu	2023 CE	2023	Stratovolc
257110	Aneityum	Vanuatu	Unknown	NA	Stratovolc
258001	Eastern Gemini Seamount	Vanuatu	1996 CE	1996	Submarine
258010	Matthew Island	France - claimed by Vanuatu	1956 CE	1956	Stratovolc
258020	Hunter Island	France - claimed by	1903 CE	1903	Stratovolc

# Vanuatu

259010	Newer Volcanics Province	Australia	2900 BCE	-2900	Volcanic fi
259804	McBride Volcanic Province	Australia	5050 BCE	-5050	Shield(s)
260001	Narcondum	India	Unknown	NA	Stratovolc
260010	Barren Island	India	2023 CE	2023	Stratovolc
261020	Seulawah Agam	Indonesia	1839 CE	1839	Stratovolc
261030	Peuet Sague	Indonesia	2000 CE	2000	Complex

261050	Telong, Bur ni	Indonesia	1937 CE	1937	Stratovolc
261070	Singkut	Indonesia	1881 CE	1881	Caldera(s)
261080	Sinabung	Indonesia	2021 CE	2021	Stratovolc
261090	Toba	Indonesia	Unknown	NA	Caldera
261110	Sibualbuali	Indonesia	Unknown	NA	Stratovolc
261111	Lubukraya	Indonesia	Unknown	NA	Stratovolc

261120	Sorikmarapi	Indonesia	1986 CE	1986	Stratovolc
261121	Malintang	Indonesia	Unknown	NA	Stratovolc
261130	Talakmau	Indonesia	Unknown	NA	Complex
261131	Sarik-Gajah	Indonesia	Unknown	NA	Pyroclasti
261140	Marapi	Indonesia	2023 CE	2023	Complex
261150	Tandikat-Singgalang	Indonesia	1924 CE	1924	Stratovolc

261160	Talang	Indonesia	2007 CE	2007	Stratovolc
261170	Kerinci	Indonesia	2023 CE	2023	Stratovolc
261180	Sumbing	Indonesia	1921 CE	1921	Stratovolc
261200	Hululais	Indonesia	Unknown	NA	Compound
261210	Daun, Bukit	Indonesia	Unknown	NA	Stratovolc
261220	Kaba	Indonesia	2000 CE	2000	Stratovolc

261230	Dempo	Indonesia	2022 CE	2022	Stratovolc
261231	Patah	Indonesia	Unknown	NA	Stratovolc
261251	Ranau	Indonesia	Unknown	NA	Caldera
261260	Sekincau Belirang	Indonesia	Unknown	NA	Caldera(s)
261270	Suoh	Indonesia	1933 CE	1933	Caldera(s)
261280	Hulubelu	Indonesia	Unknown	NA	Caldera
261290	Rajabasa	Indonesia	Unknown	NA	Stratovolc

262000	Krakatau	Indonesia	2023 CE	2023	Caldera
263010	Pulosari	Indonesia	Unknown	NA	Stratovolc
263020	Karang	Indonesia	Unknown	NA	Stratovolc
263040	Perbakti-Gagak	Indonesia	1939 CE	1939	Stratovolc
263050	Salak	Indonesia	1938 CE	1938	Stratovolc
263060	Gede-Pangrango	Indonesia	1957 CE	1957	Stratovolc

263070	Patuha	Indonesia	Unknown	NA	Stratovolc
263090	Tangkuban Parahu	Indonesia	2019 CE	2019	Stratovolc
263100	Papandayan	Indonesia	2002 CE	2002	Stratovolc
263110	Kendang	Indonesia	Unknown	NA	Stratovolc
263130	Guntur	Indonesia	1847 CE	1847	Complex
263131	Tampomas	Indonesia	Unknown	NA	Stratovolc



263140	Galunggung	Indonesia	1984 CE	1984	Stratovolc
263150	Talagabodas	Indonesia	Unknown	NA	Stratovolc
263170	Ciremai	Indonesia	1951 CE	1951	Stratovolc
263180	Slamet	Indonesia	2014 CE	2014	Stratovolc
263200	Dieng Volcanic Complex	Indonesia	2021 CE	2021	Complex
263210	Sundoro	Indonesia	1971 CE	1971	Stratovolc

263220	Sumbing	Indonesia	1730 CE	1730	Stratovolc
263230	Ungaran	Indonesia	Unknown	NA	Stratovolc
263231	Telomoyo	Indonesia	Unknown	NA	Stratovolc
263240	Merbabu	Indonesia	1797 CE	1797	Stratovolc
263250	Merapi	Indonesia	2023 CE	2023	Stratovolc
263251	Muria	Indonesia	160 BCE	-160	Stratovolc

263260	Lawu	Indonesia	1885 CE	1885	Stratovolc
263270	Wilis	Indonesia	Unknown	NA	Stratovolc
263280	Kelud	Indonesia	2014 CE	2014	Stratovolc
263281	Kawi-Butak	Indonesia	Unknown	NA	Stratovolc
263290	Arjuno-Welirang	Indonesia	1952 CE	1952	Stratovolc
263291	Penanggungan	Indonesia	Unknown	NA	Stratovolc

263300	Semeru	Indonesia	2023 CE	2023	Stratovolc
263310	Tengger Caldera	Indonesia	2020 CE	2020	Stratovolc
263320	Lamongan	Indonesia	1898 CE	1898	Stratovolc
263330	Iyang-Argapura	Indonesia	Unknown	NA	Complex
263340	Raung	Indonesia	2022 CE	2022	Stratovolc
263350	Ijen	Indonesia	1999 CE	1999	Stratovolc

263351	Baluran	Indonesia	Unknown	NA	Stratovolc
264001	Buyan-Bratan	Indonesia	Unknown	NA	Caldera
264010	Batur	Indonesia	2000 CE	2000	Caldera
264020	Agung	Indonesia	2019 CE	2019	Stratovolc
264030	Rinjani	Indonesia	2016 CE	2016	Stratovolc
264040	Tambora	Indonesia	1967 CE	1967	Stratovolc

264050	Sangeang Api	Indonesia	2022 CE	2022	Complex
264060	Sano, Wai	Indonesia	Unknown	NA	Caldera
264071	Ranakah	Indonesia	1991 CE	1991	Lava dome
264080	Inierie	Indonesia	8050 BCE	-8050	Stratovolc
264090	Inielika	Indonesia	2001 CE	2001	Complex
264100	Ebulobo	Indonesia	1969 CE	1969	Stratovolc

264110	Iya	Indonesia	1969 CE	1969	Stratovolc
264140	Kelimutu	Indonesia	1968 CE	1968	Complex
264150	Paluweh	Indonesia	2013 CE	2013	Stratovolc
264160	Egon	Indonesia	2008 CE	2008	Stratovolc
264180	Lewotobi	Indonesia	2003 CE	2003	Stratovolc
264200	Leroboleng	Indonesia	2003 CE	2003	Complex
264220	Iliboleng	Indonesia	1993 CE	1993	Stratovolc

264230	Lewotolok	Indonesia	2023 CE	2023	Stratovolc
264240	Ililabalekan	Indonesia	Unknown	NA	Stratovolc
264250	Iliwerung	Indonesia	2021 CE	2021	Complex
264260	Tara, Batu	Indonesia	2015 CE	2015	Stratovolc
264270	Sirung	Indonesia	2015 CE	2015	Complex
265040	Wurlali	Indonesia	1892 CE	1892	Stratovolc



265050	Teon	Indonesia	1904 CE	1904	Stratovolc
265060	Nila	Indonesia	1968 CE	1968	Stratovolc
265070	Serua	Indonesia	1921 CE	1921	Stratovolc
265080	Manuk	Indonesia	Unknown	NA	Stratovolc
265090	Banda Api	Indonesia	1988 CE	1988	Caldera
266010	Colo	Indonesia	1983 CE	1983	Stratovolc
266020	Ambang	Indonesia	2005 CE	2005	Complex

266030	Soputan	Indonesia	2020 CE	2020	Stratovolc
266100	Lokon-Empung	Indonesia	2015 CE	2015	Stratovolc
266110	Mahawu	Indonesia	1977 CE	1977	Stratovolc
266120	Klabat	Indonesia	Unknown	NA	Stratovolc
266130	Tangkoko-Duasudara	Indonesia	1880 CE	1880	Stratovolc
267010	Ruang	Indonesia	2002 CE	2002	Stratovolc

267020	Karangetang	Indonesia	2023 CE	2023	Stratovolc
267030	Banua Wuhu	Indonesia	1919 CE	1919	Submarine
267040	Awu	Indonesia	2004 CE	2004	Stratovolc
268001	Tarakan	Indonesia	Unknown	NA	Pyroclasti
268010	Dukono	Indonesia	2023 CE	2023	Complex
268020	Tobaru	Indonesia	Unknown	NA	Stratovolc
268030	Ibu	Indonesia	2023 CE	2023	Stratovolc
268040	Gamkonora	Indonesia	2007 CE	2007	Stratovolc

268050	Todoko-Ranu	Indonesia	Unknown	NA	Caldera(s)
268051	Jailolo	Indonesia	Unknown	NA	Stratovolc
268052	Hiri	Indonesia	Unknown	NA	Stratovolc
268060	Gamalama	Indonesia	2018 CE	2018	Stratovolc
268061	Tidore	Indonesia	Unknown	NA	Stratovolc
268062	Mare	Indonesia	Unknown	NA	Stratovolc
268063	Moti	Indonesia	Unknown	NA	Stratovolc
268070	Kie Besi	Indonesia	1988 CE	1988	Stratovolc

268071	Tigalalu	Indonesia	Unknown	NA	Stratovolc
268072	Amasing	Indonesia	Unknown	NA	Stratovolc
268073	Bibinoi	Indonesia	Unknown	NA	Stratovolc
271010	Balut	Philippines	Unknown	NA	Stratovolc
271011	Parker	Philippines	1641 CE	1641	Stratovolc
271020	Matutum	Philippines	1290 CE	1290	Stratovolc
271030	Apo	Philippines	Unknown	NA	Stratovolc

271031	Leonard Range	Philippines	120 CE	120	Stratovolc
271040	Makaturing	Philippines	1882 CE	1882	Stratovolc
271060	Ragang	Philippines	1916 CE	1916	Stratovolc
271061	Kalatungan	Philippines	Unknown	NA	Stratovolc
271070	Musuan	Philippines	Unknown	NA	Lava dome
271071	Malindang	Philippines	Unknown	NA	Stratovolc

271080	Camiguin	Philippines	1953 CE	1953	Stratovolc
272010	Cuernos de Negros	Philippines	Unknown	NA	Complex
272020	Kanlaon	Philippines	2017 CE	2017	Stratovolc
272030	Mandalagan	Philippines	Unknown	NA	Complex
272040	Silay	Philippines	Unknown	NA	Stratovolc
272050	Cabalían	Philippines	1820 CE	1820	Stratovolc
272070	Mahagnao	Philippines	Unknown	NA	Stratovolc

272080	Biliran	Philippines	1939 CE	1939	Compound
273010	Bulusan	Philippines	2022 CE	2022	Stratovolc
273020	Pocdol Mountains	Philippines	Unknown	NA	Compound
273030	Mayon	Philippines	2022 CE	2022	Stratovolc
273031	Masaraga	Philippines	Unknown	NA	Stratovolc
273041	Iriga	Philippines	Unknown	NA	Stratovolc



273042	Isarog	Philippines	3500 BCE	-3500	Stratovolc
273044	Malindig	Philippines	Unknown	NA	Stratovolc
273050	Banahaw	Philippines	Unknown	NA	Complex
273060	San Pablo Volcanic Field	Philippines	1350 CE	1350	Volcanic fi
273070	Taal	Philippines	2022 CE	2022	Caldera
273080	Laguna Caldera	Philippines	Unknown	NA	Caldera

273083	Pinatubo	Philippines	1993 CE	1993	Stratovolcano
273087	Patoc	Philippines	Unknown	NA	Stratovolcano
273088	Ambalatungan Group	Philippines	Unknown	NA	Compound
273090	Cagua	Philippines	1860 CE	1860	Stratovolcano
274010	Camiguin de Babuyanes	Philippines	1857 CE	1857	Stratovolcano
274020	Didicas	Philippines	1978 CE	1978	Compound

274030	Babuyan Claro	Philippines	1924 CE	1924	Stratovolc
274050	Unnamed	Philippines	1854 CE	1854	Submarine
274060	Iraya	Philippines	1454 CE	1454	Stratovolc
275001	Hainan Volcanic Field	China	1933 CE	1933	Volcanic fi
275020	Ly Son Group	Vietnam	Unknown	NA	Volcanic fi
275060	Cendres, Ile des	Vietnam	1923 CE	1923	Submarine

275080	Popa	Burma (Myanmar)	6050 BCE	-6050	Stratovolc
275110	Tengchong	China	5750 BCE	-5750	Volcanic fi
281031	Kueishantao	Taiwan	1853 CE	1853	Stratovolc
281032	Tatun Volcanic Group	Taiwan	648 CE	648	Lava dome
282010	Submarine Volcano NNE of Iriomotejima	Japan	1924 CE	1924	Submarine
282020	Io-Torishima	Japan	1968 CE	1968	Complex
282021	Yokoatejima	Japan	1835 CE	1835	Stratovolc
282022	Akusekijima	Japan	Unknown	NA	Stratovolc

282030	Suwanosejima	Japan	2023 CE	2023	Stratovolc
282040	Nakanoshima	Japan	1914 CE	1914	Stratovolc
282043	Kuchinoshima	Japan	1190 CE	1190	Stratovolc
282050	Kuchinoerabujima	Japan	2020 CE	2020	Stratovolc
282060	Kikai	Japan	2020 CE	2020	Caldera
282070	Ata	Japan	885 CE	885	Caldera(s)
282080	Aira	Japan	2023 CE	2023	Caldera

282081	Yonemaru-Sumiyoshiike	Japan	6200 BCE	-6200	Maar(s)
282090	Kirishimayama	Japan	2018 CE	2018	Shield
282091	Fukue	Japan	400 BCE	-400	Volcanic fi
282100	Unzendake	Japan	1996 CE	1996	Complex
282110	Asosan	Japan	2021 CE	2021	Caldera
282120	Kujusan	Japan	1996 CE	1996	Stratovolc

282130	Yufu-Tsurumi	Japan	867 CE	867	Lava dome
283001	Abu	Japan	6850 BCE	-6850	Shield(s)
283002	Sanbesan	Japan	650 CE	650	Stratovolc
283003	Oki-Dogo	Japan	Unknown	NA	Shield
283010	Izu-Tobu	Japan	1989 CE	1989	Pyroclasti
283020	Hakoneyama	Japan	2015 CE	2015	Complex

283030	Fujisan	Japan	1708 CE	1708	Stratovolc
283031	Yokodake	Japan	1200 CE	1200	Stratovolc
283040	Ontakesan	Japan	2014 CE	2014	Complex
283050	Hakusan	Japan	1659 CE	1659	Stratovolc
283060	Norikuradake	Japan	50 BCE	-50	Stratovolc
283069	Akandanayama	Japan	Unknown	NA	Stratovolc
283070	Yakedake	Japan	1995 CE	1995	Stratovolc



283071	Washiba-Kumonotaira	Japan	Unknown	NA	Shield(s)
283080	Midagahara	Japan	1839 CE	1839	Stratovolc
283090	Niigata-Yakeyama	Japan	1998 CE	1998	Lava dome
283100	Myokosan	Japan	750 BCE	-750	Stratovolc
283110	Asamayama	Japan	2019 CE	2019	Complex
283120	Kusatsu-Shiranesan	Japan	2018 CE	2018	Stratovolc

283121	Shiga	Japan	Unknown	NA	Shield(s)
283122	Harunasan	Japan	550 CE	550	Stratovolc
283130	Akagisan	Japan	Unknown	NA	Stratovolc
283131	Hiuchigatake	Japan	1544 CE	1544	Stratovolc
283140	Nikko-Shiranesan	Japan	1952 CE	1952	Shield
283141	Nantaisan	Japan	9540 BCE	-9540	Stratovolc

283142	Omanago Group	Japan	3050 BCE	-3050	Lava dome
283143	Takaharayama	Japan	4570 BCE	-4570	Stratovolc
283150	Nasudake	Japan	1963 CE	1963	Stratovolc
283151	Numazawa	Japan	3400 BCE	-3400	Shield
283160	Bandaisan	Japan	1888 CE	1888	Stratovolc
283170	Adatarayama	Japan	1996 CE	1996	Stratovolc

283180	Azumayama	Japan	1977 CE	1977	Stratovolc
283190	Zaozan [Zaosan]	Japan	1940 CE	1940	Complex
283191	Hijiori	Japan	Unknown	NA	Caldera
283200	Naruko	Japan	837 CE	837	Caldera
283210	Kurikomayama	Japan	1950 CE	1950	Stratovolc
283220	Chokaisan	Japan	1974 CE	1974	Stratovolc

283230	Akita-Komagatake	Japan	1971 CE	1971	Stratovolc
283240	Iwatesan	Japan	1919 CE	1919	Complex
283250	Hachimantai	Japan	5350 BCE	-5350	Stratovolc
283260	Akita-Yakeyama	Japan	1997 CE	1997	Stratovolc
283262	Megata	Japan	2050 BCE	-2050	Maar(s)
283270	Iwakisan	Japan	1863 CE	1863	Stratovolc

283271	Towada	Japan	915 CE	915	Caldera
283280	Hakkodasan	Japan	1550 CE	1550	Stratovolc
283290	Osorezan	Japan	1787 CE	1787	Stratovolc
284010	Izu-Oshima	Japan	1990 CE	1990	Stratovolc
284011	Toshima	Japan	4550 BCE	-4550	Stratovolc
284020	Niijima	Japan	886 CE	886	Lava dome
284030	Kozushima	Japan	838 CE	838	Lava dome

284040	Miyakejima	Japan	2010 CE	2010	Stratovolc
284041	Mikurajima	Japan	4100 BCE	-4100	Stratovolc
284042	Kurose Hole	Japan	Unknown	NA	Submarine
284050	Hachijojima	Japan	1606 CE	1606	Stratovolc
284060	Aogashima	Japan	1785 CE	1785	Stratovolc
284061	Kita-Bayonnaise	Japan	Unknown	NA	Submarine
284070	Myojinsho	Japan	1970 CE	1970	Submarine
284080	Sumisujima	Japan	1916 CE	1916	Submarine

284090	Izu-Torishima	Japan	2002 CE	2002	Stratovolcano
284091	Sofugan	Japan	Unknown	NA	Stratovolcano
284093	Suiyo Seamount	Japan	Unknown	NA	Submarine
284094	Mokuyo Seamount	Japan	Unknown	NA	Submarine
284095	Doyo Seamount	Japan	Unknown	NA	Submarine
284096	Nishinoshima	Japan	2023 CE	2023	Caldera
284097	Kaikata Seamount	Japan	Unknown	NA	Submarine



284100	Kaitoku Seamount	Japan	1984 CE	1984	Submarine
284110	Kita-Ioto	Japan	2023 CE	2023	Stratovolcano
284120	Ioto	Japan	2022 CE	2022	Caldera
284121	Kita-Fukutokutai	Japan	1954 CE	1954	Submarine
284130	Fukutoku-Oka-no-Ba	Japan	2021 CE	2021	Submarine
284131	Minami-Hiyoshi	Japan	1975 CE	1975	Submarine

284132	Nikko	Japan	Unknown	NA	Submarine
284133	Fukujin	United States	1974 CE	1974	Submarine
284134	Kasuga 1	United States	1959 CE	1959	Submarine
284135	Kasuga 2	United States	Unknown	NA	Submarine
284136	NW Eifuku	United States	Unknown	NA	Submarine
284137	Daikoku	United States	Unknown	NA	Submarine

284140	Farallon de Pajaros	United States	1967 CE	1967	Stratovolcano
284141	Ahyi	United States	2023 CE	2023	Submarine
284142	Supply Reef	United States	1989 CE	1989	Submarine
284143	Maug Islands	United States	Unknown	NA	Stratovolcano
284150	Asuncion	United States	1906 CE	1906	Stratovolcano
284160	Agrigan	United States	1917 CE	1917	Stratovolcano
284170	Pagan	United States	2021 CE	2021	Stratovolcano

States						
284180	Alamagan	United States	870 CE		870	Stratovolc
284190	Guguan	United States	1883 CE		1883	Stratovolc
284191	Zealandia Bank	United States	Unknown		NA	Stratovolc
284192	Sarigan	United States	Unknown		NA	Stratovolc
284193	South Sarigan Seamount	United States	2010 CE		2010	Submarine
284200	Anatahan	United	2008 CE		2008	Stratovolc

## States

284201	East Diamante	United States	Unknown	NA	Submarine
284202	Ruby	United States	1995 CE	1995	Submarine
284210	Esmeralda Bank	United States	Unknown	NA	Submarine
284211	NW Rota-1	United States	2010 CE	2010	Submarine
284220	Forecast Seamount	United States	Unknown	NA	Submarine
284230	Seamount X	United	Unknown	NA	Submarine

States

284305	Mariana Back-Arc Segment at 15.5°N	United States	2015 CE	2015	Submarine
285010	Oshima-Oshima	Japan	1790 CE	1790	Stratovolc
285011	Esan	Japan	1874 CE	1874	Lava dome
285020	Hokkaido-Komagatake	Japan	2000 CE	2000	Stratovolc
285030	Toya	Japan	2001 CE	2001	Stratovolc
285031	Niseko	Japan	4900 BCE	-4900	Stratovolc

285032	Yoteizan	Japan	1050 BCE	-1050	Stratovolc
285034	Kuttara	Japan	1820 CE	1820	Stratovolc
285040	Shikotsu	Japan	1979 CE	1979	Caldera
285041	Rishirizan	Japan	5830 BCE	-5830	Stratovolc
285050	Tokachidake	Japan	2004 CE	2004	Stratovolc
285060	Taisetsuzan	Japan	1739 CE	1739	Stratovolc

285061	Maruyama	Japan	1898 CE	1898	Stratovolc
285070	Akan	Japan	2008 CE	2008	Caldera
285080	Kussharo	Japan	1320 CE	1320	Caldera
285081	Mashu	Japan	1080 CE	1080	Caldera
285082	Rausudake	Japan	1800 CE	1800	Stratovolc
285083	Tenchozan	Japan	Unknown	NA	Crater rov



285090	Shiretoko-lozan	Japan	1936 CE	1936	Stratovolc
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290010	Tomariyama [Golovnin]	Japan - administered by Russia	1848 CE	1848	Caldera
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290020	Raususan [Mendeleev]	Japan - administered by Russia	1880 CE	1880	Stratovolc
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290021	Ruruidake [Smirnov]	Japan - administered by Russia	Unknown	NA	Stratovolc
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290030	Chachadake [Tiatia]	Japan - administered by Russia	1981 CE	1981	Stratovolc
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290040	Berutarubesan	Japan -	Unknown	NA	Stratovolc
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	[Berutarube]	administered by Russia			
290041	Moekeshiwan [Lvinaya Past]	Japan - administered by Russia	7480 BCE	-7480	Stratovolc
290050	Etorofu- Atosanupuri [Atosanupuri]	Japan - administered by Russia	1932 CE	1932	Stratovolc
290060	Hitokappu Volcano Group [Bogatyry Ridge]	Japan - administered by Russia	Unknown	NA	Stratovolc
290061	Unnamed	Japan - administered by Russia	Unknown	NA	Submarine

290070	Etorofu-Yakeyama [Grozny Group]	Japan - administered by Russia	2013 CE	2013	Complex(
290072	Odamoisan [Tebenkov]	Japan - administered by Russia	Unknown	NA	Stratovolc
290080	Sashiusudake [Baransky]	Japan - administered by Russia	1951 CE	1951	Stratovolc
290090	Chirippusan [Chirip]	Japan - administered by Russia	1860 CE	1860	Stratovolc
290100	Moyorodake [Medvezhia]	Japan - administered by Russia	1999 CE	1999	Stratovolc

290110	Rakkibetsudake [Demon]	Japan - administered by Russia	Unknown	NA	Stratovolc
290111	Ivao Group	Russia	Unknown	NA	Pyroclasti
290112	Rudakov	Russia	Unknown	NA	Stratovolc
290113	Tri Sestry	Russia	Unknown	NA	Stratovolc
290120	Kolokol Group	Russia	1973 CE	1973	Stratovolc

290150	Chirpoi	Russia	2016 CE	2016	Caldera
290160	Unnamed	Russia	1972 CE	1972	Submarine
290161	Milna	Russia	1914 CE	1914	Stratovolc
290180	Zavaritzki Caldera	Russia	1957 CE	1957	Caldera
290190	Prevo Peak	Russia	1825 CE	1825	Stratovolc
290191	Uratman	Russia	Unknown	NA	Stratovolc
290200	Ketoi	Russia	1960 CE	1960	Stratovolc
290210	Ushishur	Russia	1884 CE	1884	Caldera

290211	Srednii	Russia	Unknown	NA	Submarine
290220	Rasshua	Russia	1957 CE	1957	Stratovolc
290240	Sarychev Peak	Russia	2021 CE	2021	Stratovolc
290250	Raikoke	Russia	2019 CE	2019	Stratovolc
290260	Chirinkotan	Russia	2022 CE	2022	Stratovolc
290270	Ekarma	Russia	2010 CE	2010	Stratovolc

290290	Sinarka	Russia	1878 CE	1878	Stratovolc
290300	Kharimkotan	Russia	1933 CE	1933	Stratovolc
290310	Tao-Rusyr Caldera	Russia	1952 CE	1952	Stratovolc
290320	Nemo Peak	Russia	1938 CE	1938	Caldera
290331	Shirinki	Russia	Unknown	NA	Stratovolc

290340	Fuss Peak	Russia	1854 CE	1854	Stratovolc
290350	Karpinsky Group	Russia	1952 CE	1952	Cone(s)
290360	Chikurachki	Russia	2023 CE	2023	Stratovolc
290370	Vernadskii Ridge	Russia	Unknown	NA	Pyroclasti
290380	Ebeko	Russia	2023 CE	2023	Stratovolc
290390	Alaid	Russia	2022 CE	2022	Stratovolc



300010	Kambalny	Russia	2017 CE	2017	Stratovolc
300020	Koshelev	Russia	1690 CE	1690	Stratovolc
300021	Yavinsky	Russia	4050 BCE	-4050	Stratovolc
300022	Diky Greben	Russia	350 CE	350	Lava dome
300023	Kurile Lake	Russia	6440 BCE	-6440	Caldera
300030	Iliinsky	Russia	1901 CE	1901	Stratovolc

300040	Zheltsky	Russia	1923 CE	1923	Stratovolc
300050	Ksudach	Russia	1907 CE	1907	Stratovolc
300052	Olkoviy Volcanic Group	Russia	Unknown	NA	Volcanic fi
300053	Khodutka	Russia	300 BCE	-300	Stratovolc
300058	Asacha	Russia	Unknown	NA	Complex
300059	Visokiy	Russia	Unknown	NA	Stratovolc

300060	Mutnovsky	Russia	2000 CE	2000	Complex
300070	Gorely	Russia	2010 CE	2010	Caldera
300080	Opala	Russia	1776 CE	1776	Caldera
300082	Tolmachev Dol	Russia	300 CE	300	Pyroclasti
300083	Vilyuchinsky	Russia	8050 BCE	-8050	Stratovolc
300084	Barkhatnaya Sopka	Russia	3550 BCE	-3550	Volcanic fi
300090	Koryaksky	Russia	2009 CE	2009	Stratovolc

300100	Avachinsky	Russia	2001 CE	2001	Stratovolc
300110	Dzenzursky	Russia	Unknown	NA	Compound
300120	Zhupanovsky	Russia	2016 CE	2016	Compound
300121	Veer	Russia	390 CE	390	Pyroclasti
300122	Kostakan	Russia	1350 CE	1350	Pyroclasti
300123	Bakening	Russia	550 BCE	-550	Stratovolc

300124	Zavaritsky	Russia	800 BCE	-800	Pyroclasti
300125	Akademia Nauk	Russia	1996 CE	1996	Stratovolc
300130	Karymsky	Russia	2022 CE	2022	Stratovolc
300140	Maly Semyachik	Russia	1952 CE	1952	Caldera
300150	Bolshoi Semiachik	Russia	4450 BCE	-4450	Stratovolc
300160	Taunshits	Russia	550 BCE	-550	Stratovolc

300170	Uzon	Russia	200 CE	200	Caldera(s)
300180	Kikhpinych	Russia	1550 CE	1550	Stratovolc
300190	Krasheninnikov	Russia	1550 CE	1550	Caldera
300200	Kronotsky	Russia	1923 CE	1923	Stratovolc
300210	Gamchen	Russia	550 BCE	-550	Complex
300220	Komarov	Russia	950 CE	950	Stratovolc

300221	Vysoky	Russia	550 BCE	-550	Stratovolc
300230	Kizimen	Russia	2013 CE	2013	Stratovolc
300240	Tolbachik	Russia	2013 CE	2013	Shield
300241	Udina	Russia	Unknown	NA	Stratovolc
300242	Zimina	Russia	Unknown	NA	Stratovolc
300250	Bezymianny	Russia	2023 CE	2023	Stratovolc

300251	Kamen	Russia	Unknown	NA	Stratovolc
300260	Klyuchevskoy	Russia	2022 CE	2022	Stratovolc
300261	Ushkovsky	Russia	1890 CE	1890	Compound
300270	Sheveluch	Russia	2023 CE	2023	Stratovolc
300271	Piip	Russia	5050 BCE	-5050	Submarine
300272	Khangar	Russia	1500 CE	1500	Stratovolc



300273	Cherpuk Group	Russia	4550 BCE	-4550	Pyroclasti
300280	Ichinsky	Russia	1740 CE	1740	Stratovolc
300310	Plosky	Russia	Unknown	NA	Shield
300360	Bolshoi- Kekuknaysky	Russia	5310 BCE	-5310	Shield(s)
300450	Alney- Chashakondzha	Russia	1600 CE	1600	Stratovolc
300511	Shisheika	Russia	2240 BCE	-2240	Lava dome

300512	Terpuk	Russia	800 BCE	-800	Shield
300520	Sedanka Lava Field	Russia	7050 BCE	-7050	Volcanic fi
300550	Gorny Institute	Russia	1250 CE	1250	Stratovolc
300551	Kinenin	Russia	850 CE	850	Maar
300552	Bliznetsy	Russia	1060 BCE	-1060	Lava cone
300560	Titila	Russia	550 BCE	-550	Shield(s)

300590	Elovsky	Russia	7550 BCE	-7550	Shield(s)
300650	Nylgimelkin	Russia	3550 BCE	-3550	Shield(s)
300671	Spokoiny	Russia	3450 BCE	-3450	Stratovolc
300680	Ostry	Russia	2050 BCE	-2050	Stratovolc
300700	Severny	Russia	1550 BCE	-1550	Shield
300720	Voyampolsky	Russia	Unknown	NA	Shield(s)

302030	Udokan Plateau	Russia	220 BCE	-220	Volcanic fi
302040	Vitim Volcanic Field	Russia	Unknown	NA	Volcanic fi
302050	Tunkin Depression	Russia	Unknown	NA	Volcanic fi
302060	Jom-Bolok	Russia	5180 BCE	-5180	Volcanic fi
302070	Azas Plateau	Russia	Unknown	NA	Volcanic fi
303010	Taryatu-Chulutu	Mongolia	2980 BCE	-2980	Volcanic fi
303020	Khanuy Gol	Mongolia	Unknown	NA	Volcanic fi
303040	Dariganga	Mongolia	Unknown	NA	Volcanic fi

Volcanic Field

304030	Ashikule Volcanic Field	China	1951 CE	1951	Volcanic fi
305010	Honggeertu	China	Unknown	NA	Volcanic fi
305011	Arxan-Chaihe	China	0 CE	0	Volcanic fi
305020	Keluo Group	China	Unknown	NA	Volcanic fi
305030	Wudalianchi	China	1776 CE	1776	Volcanic fi
305040	Jingpohu	China	520 BCE	-520	Volcanic fi
305050	Longgang Group	China	350 CE	350	Volcanic fi

305060	Changbaishan	China-North Korea	1903 CE	1903	Stratovolc
306020	Ch'uga-ryong	North Korea-South Korea	Unknown	NA	Shield
306030	Ulreung	South Korea	2990 BCE	-2990	Stratovolc
306040	Halla	South Korea	1007 CE	1007	Shield
311010	Buldir	United States	Unknown	NA	Stratovolc
311020	Kiska	United States	1990 CE	1990	Stratovolc
311030	Segula	United States	Unknown	NA	Stratovolc

311040	Davidof	United States	Unknown	NA	Stratovolc
311050	Little Sitkin	United States	1830 CE	1830	Stratovolc
311060	Semisopochnoi	United States	2023 CE	2023	Stratovolc
311070	Gareloi	United States	1989 CE	1989	Stratovolc
311080	Tanaga	United States	1914 CE	1914	Stratovolc

311090	Takawangha	United States	1550 CE	1550	Stratovolc
311100	Bobrof	United States	Unknown	NA	Stratovolc
311110	Kanaga	United States	2012 CE	2012	Stratovolc
311111	Moffett	United States	1600 BCE	-1600	Stratovolc
311120	Great Sitkin	United States	2023 CE	2023	Stratovolc



311130	Kasatochi	United States	2008 CE	2008	Stratovolc
311140	Koniuji	United States	1150 BCE	-1150	Stratovolc
311160	Atka Volcanic Complex	United States	2007 CE	2007	Stratovolc
311180	Seguam	United States	1993 CE	1993	Stratovolc
311190	Amukta	United States	1997 CE	1997	Stratovolc

311200	Chagulak	United States	Unknown	NA	Stratovolc
311210	Yunaska	United States	1937 CE	1937	Shield
311220	Herbert	United States	Unknown	NA	Stratovolc
311230	Carlisle	United States	1828 CE	1828	Stratovolc
311240	Cleveland	United States	2020 CE	2020	Stratovolc

311241	Tana	United States	Unknown	NA	Stratovolc
311250	Uliaga	United States	Unknown	NA	Stratovolc
311260	Kagamil	United States	1929 CE	1929	Stratovolc
311270	Vsevidof	United States	1878 CE	1878	Stratovolc
311280	Recheschnoi	United States	Unknown	NA	Stratovolc

311290	Okmok	United States	2008 CE	2008	Shield
311300	Bogoslof	United States	2017 CE	2017	Submarine
311310	Makushin	United States	1995 CE	1995	Stratovolc
311320	Akutan	United States	1992 CE	1992	Stratovolc
311340	Westdahl	United	1992 CE	1992	Stratovolc

States

311350	Fisher	United States	1830 CE	1830	Stratovolc
311360	Shishaldin	United States	2020 CE	2020	Stratovolc
311380	Roundtop	United States	7600 BCE	-7600	Stratovolc
311390	Amak	United States	1796 CE	1796	Stratovolc
312010	Frosty	United States	Unknown	NA	Stratovolc
312011	Dutton	United States	Unknown	NA	Stratovolc

312020	Emmons Lake	United States	Unknown	NA	Caldera
312030	Pavlof	United States	2022 CE	2022	Stratovolc
312040	Pavlof Sister	United States	Unknown	NA	Stratovolc
312050	Dana	United States	1890 BCE	-1890	Stratovolc
312055	Stepovak Bay Group	United States	Unknown	NA	Volcanic fi
312060	Kupreanof	United States	Unknown	NA	Stratovolc

312070	Veniaminof	United States	2021 CE	2021	Stratovolc
312080	Black Peak	United States	1900 BCE	-1900	Stratovolc
312090	Aniakchak	United States	1931 CE	1931	Caldera
312100	Yantarni	United States	800 BCE	-800	Stratovolc
312110	Chiginagak	United States	1998 CE	1998	Stratovolc
312120	Kialagvik	United States	Unknown	NA	Stratovolc

312130	Ugashik-Peulik	United States	1814 CE	1814	Stratovolcano
312131	Ukinrek Maars	United States	1977 CE	1977	Maar(s)
312132	Unnamed	United States	Unknown	NA	Lava dome
312140	Martin	United States	1953 CE	1953	Stratovolcano
312150	Mageik	United States	500 BCE	-500	Stratovolcano
312160	Trident	United States	1974 CE	1974	Stratovolcano



312170	Katmai	United States	1912 CE	1912	Stratovolc
312180	Novarupta	United States	1912 CE	1912	Caldera
312190	Griggs	United States	1790 BCE	-1790	Stratovolc
312200	Snowy Mountain	United States	1710 CE	1710	Stratovolc
312210	Denison	United States	Unknown	NA	Stratovolc
312220	Steller	United States	Unknown	NA	Stratovolc

312230	Kukak	United States	Unknown	NA	Stratovolc
312250	Kaguyak	United States	3850 BCE	-3850	Lava dome
312260	Fourpeaked	United States	2006 CE	2006	Stratovolc
312270	Douglas	United States	Unknown	NA	Stratovolc
313010	Augustine	United States	2006 CE	2006	Lava dome
313020	Iliamna	United States	1876 CE	1876	Stratovolc

313030	Redoubt	United States	2009 CE	2009	Stratovolc
313040	Spurr	United States	1992 CE	1992	Stratovolc
313050	Hayes	United States	1200 CE	1200	Stratovolc
314010	St. Paul Island	United States	1280 BCE	-1280	Shield
314030	Ingakslugwat Hills	United States	Unknown	NA	Volcanic fi
314040	St. Michael	United States	Unknown	NA	Volcanic fi
314060	Imuruk Lake	United States	300 CE	300	Volcanic fi

315001	Buzzard Creek	United States	1050 BCE	-1050	Tuff ring(s)
315020	Wrangell	United States	1912 CE	1912	Shield
315030	Churchill	United States	847 CE	847	Stratovolc
315040	Edgecumbe	United States	2080 BCE	-2080	Volcanic fi
315050	Duncan Canal	United States	Unknown	NA	Volcanic fi
315060	Tlevak Strait-Suemez Island	United States	Unknown	NA	Volcanic fi
315070	Behm Canal-Rudyard Bay	United States	Unknown	NA	Pyroclasti

320010	Fort Selkirk	Canada	Unknown	NA	Volcanic fi
320020	Alligator Lake	Canada	Unknown	NA	Volcanic fi
320030	Atlin Volcanic Field	Canada	Unknown	NA	Pyroclasti
320031	Tuya Volcanic Field	Canada	Unknown	NA	Volcanic fi
320040	Heart Peaks	Canada	Unknown	NA	Shield
320050	Level Mountain	Canada	Unknown	NA	Shield
320060	Edziza	Canada	950 CE	950	Stratovolc
320070	Spectrum Range	Canada	Unknown	NA	Shield

320080	Hoodoo Mountain	Canada	7050 BCE	-7050	Subglacial
320090	Iskut-Unuk River Cones	Canada	1800 CE	1800	Pyroclasti
320100	Tseax River Cone	Canada	1690 CE	1690	Pyroclasti
320110	Crow Lagoon	Canada	Unknown	NA	Pyroclasti
320120	Milbanke Sound Group	Canada	Unknown	NA	Pyroclasti
320140	Nazko	Canada	5220 BCE	-5220	Pyroclasti
320150	Wells Gray- Clearwater	Canada	1550 CE	1550	Volcanic fi
320160	Silverthrone	Canada	Unknown	NA	Caldera

320170	Bridge River Cones	Canada	Unknown	NA	Volcanic fi
320180	Meager	Canada	410 BCE	-410	Complex
320190	Garibaldi Lake	Canada	Unknown	NA	Volcanic fi
320200	Garibaldi	Canada	8060 BCE	-8060	Stratovolc
320811	Cayley Volcanic Field	Canada	Unknown	NA	Volcanic fi
321010	Baker	United States	1880 CE	1880	Stratovolc

321020	Glacier Peak	United States	1700 CE	1700	Stratovolc
321030	Rainier	United States	1450 CE	1450	Stratovolc
321040	Adams	United States	950 CE	950	Stratovolc
321050	St. Helens	United States	2008 CE	2008	Stratovolc
321060	West Crater	United States	5750 BCE	-5750	Volcanic fi
321070	Indian Heaven	United States	6250 BCE	-6250	Volcanic fi



322010	Hood	United States	1866 CE	1866	Stratovolc
322020	Jefferson	United States	950 CE	950	Stratovolc
322030	Blue Lake Crater	United States	680 CE	680	Maar
322040	Sand Mountain Field	United States	950 BCE	-950	Volcanic fi
322060	Belknap	United States	480 CE	480	Shield(s)
322070	Three Sisters	United States	439 CE	439	Complex

322090	Bachelor	United States	5800 BCE	-5800	Stratovolcano
322100	Davis Lake	United States	2790 BCE	-2790	Volcanic field
322110	Newberry	United States	690 CE	690	Shield
322120	Devils Garden	United States	Unknown	NA	Volcanic field
322150	Cinnamon Butte	United States	Unknown	NA	Pyroclastic
322160	Crater Lake	United States	2850 BCE	-2850	Caldera
322170	Diamond Craters	United States	5610 BCE	-5610	Volcanic field

322190	Jordan Craters	United States	1250 BCE	-1250	Volcanic fi
323010	Shasta	United States	1250 CE	1250	Stratovolc
323020	Medicine Lake	United States	1060 CE	1060	Shield
323080	Lassen Volcanic Center	United States	1917 CE	1917	Stratovolc
323100	Clear Lake	United States	Unknown	NA	Volcanic fi
323110	Mono Lake Volcanic Field	United States	1790 CE	1790	Volcanic fi
323120	Mono-Inyo	United	1380 CE	1380	Lava dome

Craters		States			
323150	Mammoth Mountain	United States	1260 CE	1260	Lava dome
323160	Ubehebe Craters	United States	150 BCE	-150	Maar(s)
323200	Salton Buttes	United States	210 CE	210	Lava dome
324010	Black Butte Crater Lava Field	United States	8400 BCE	-8400	Shield
324020	Craters of the Moon	United States	130 BCE	-130	Pyroclasti
324030	Wapi Lava Field	United States	300 BCE	-300	Shield
324040	Hell's Half Acre	United States	3250 BCE	-3250	Shield

326010	Soda Lakes	United States	Unknown	NA	Maar(s)
327040	Markagunt Plateau	United States	1050 CE	1050	Volcanic fi
327050	Black Rock Desert	United States	1290 CE	1290	Volcanic fi
327110	Carrizozo	United States	3250 BCE	-3250	Pyroclasti
327120	Zuni-Bandera	United States	1170 BCE	-1170	Volcanic fi
327812	Red Hill	United States	9450 BCE	-9450	Volcanic fi
328010	Dotsero	United States	2200 BCE	-2200	Maar
329010	Uinkaret Field	United States	1100 CE	1100	Volcanic fi

329020	San Francisco Volcanic Field	United States	1075 CE	1075	Volcanic fi
331005	West Valley Segment	Canada	Unknown	NA	Submarine
331010	Endeavour Segment	Canada	3490 BCE	-3490	Submarine
331011	Cobb Segment	Canada	1180 BCE	-1180	Submarine
331020	CoAxial Segment	Undersea Features	1993 CE	1993	Submarine
331021	Axial Seamount	Undersea Features	2015 CE	2015	Submarine
331030	Cleft Segment	Undersea Features	1986 CE	1986	Submarine
331031	North Gorda Ridge Segment	Undersea Features	1996 CE	1996	Submarine

331032	Jackson Segment	Undersea Features	Unknown	NA	Submarine
331040	Escanaba Segment	Undersea Features	2260 BCE	-2260	Submarine
331060	East Blanco Depression	Undersea Features	Unknown	NA	Submarine
332000	Kama'ehuakanaloa	United States	1996 CE	1996	Submarine
332010	Kilauea	United States	2023 CE	2023	Shield
332020	Mauna Loa	United States	2022 CE	2022	Shield
332030	Mauna Kea	United States	2460 BCE	-2460	Shield
332040	Hualalai	United	1801 CE	1801	Shield

States					
332060	Haleakala	United States	1750 CE	1750	Shield
333010	Teahitia	France	1985 CE	1985	Submarine
333020	Rocard	France	1972 CE	1972	Submarine
333030	Moua Pihaa	France	1970 CE	1970	Submarine
333040	Mehetia	France	Unknown	NA	Stratovolc
333050	Adams Seamount	Undersea Features	50 BCE	-50	Submarine
333060	Macdonald	Undersea Features	1989 CE	1989	Submarine
334020	Northern EPR at	Undersea	50 BCE	-50	Submarine



17°N		Features				
334021	Northern EPR at 16°N	Undersea Features	50 BCE	-50	Submarine	
334040	Northern EPR at 10.7°N	Undersea Features	2003 CE	2003	Submarine	
334050	Northern EPR at 9.8°N	Undersea Features	2006 CE	2006	Submarine	
334070	Galapagos Rift	Undersea Features	1996 CE	1996	Submarine	
334100	Southern EPR at 8°S	Undersea Features	1969 CE	1969	Submarine	
334120	Southern EPR-Segment K	Undersea Features	1990 CE	1990	Submarine	
334130	Southern EPR-Segment J	Undersea Features	1890 CE	1890	Submarine	
334140	Southern EPR-	Undersea	1915 CE	1915	Submarine	

Segment I		Features			
335020	Hollister Ridge	Undersea Features	Unknown	NA	Submarine
335030	Udintsev Transform	Undersea Features	Unknown	NA	Submarine
341000	Prieto, Cerro	Mexico	Unknown	NA	Lava dome
341001	Pinacate	Mexico	Unknown	NA	Volcanic fi
341003	San Luis, Isla	Mexico	Unknown	NA	Tuff cone
341004	Jaraguay Volcanic Field	Mexico	Unknown	NA	Volcanic fi
341005	Coronado	Mexico	Unknown	NA	Stratovolc

341006	Guadalupe	Mexico	Unknown	NA	Shield
341007	San Borja Volcanic Field	Mexico	Unknown	NA	Volcanic fi
341011	Tortuga, Isla	Mexico	Unknown	NA	Shield
341012	Comondu-La Purisima	Mexico	Unknown	NA	Volcanic fi
341020	Barcena	Mexico	1953 CE	1953	Pyroclasti
341021	Socorro	Mexico	1994 CE	1994	Shield
341022	Durango Volcanic Field	Mexico	Unknown	NA	Volcanic fi
341023	Isabel, Isla	Mexico	Unknown	NA	Tuff cone(

341024	Sanganguey	Mexico	Unknown	NA	Stratovolc
341030	Ceboruco	Mexico	1875 CE	1875	Stratovolc
341031	Mascota Volcanic Field	Mexico	Unknown	NA	Volcanic fi
341040	Colima	Mexico	2019 CE	2019	Stratovolc
341060	Michoacan-Guanajuato	Mexico	1952 CE	1952	Volcanic fi
341061	Zitacuaro-Valle de Bravo	Mexico	3050 BCE	-3050	Volcanic fi

341062	Jocotitlan	Mexico	1270 CE	1270	Stratovolc
341070	Toluca, Nevado de	Mexico	1350 BCE	-1350	Stratovolc
341080	Chichinautzin	Mexico	399 CE	399	Volcanic fi
341082	Iztaccihuatl	Mexico	Unknown	NA	Stratovolc
341090	Popocatepetl	Mexico	2023 CE	2023	Stratovolc
341091	Malinche, La	Mexico	1170 BCE	-1170	Stratovolc

341092	Serdan-Oriental	Mexico	Unknown	NA	Volcanic fi
341093	Humeros, Los	Mexico	4470 BCE	-4470	Caldera(s)
341094	Atlixcos, Los	Mexico	Unknown	NA	Shield
341095	Naolinco Volcanic Field	Mexico	1200 BCE	-1200	Volcanic fi
341096	Cofre de Perote	Mexico	1150 CE	1150	Compound
341097	Gloria, La	Mexico	Unknown	NA	Volcanic fi

341098	Cumbres, Las	Mexico	3920 BCE	-3920	Stratovolc
341100	Orizaba, Pico de	Mexico	1846 CE	1846	Stratovolc
341110	San Martin	Mexico	1796 CE	1796	Volcanic fi
341120	Chichon, El	Mexico	1982 CE	1982	Lava dome
341130	Tacana	Mexico- Guatemala	1986 CE	1986	Stratovolc
342020	Tajumulco	Guatemala	Unknown	NA	Stratovolc

342030	Santa Maria	Guatemala	2023 CE	2023	Stratovolc
342040	Almolonga	Guatemala	1818 CE	1818	Stratovolc
342060	Atitlan	Guatemala	1853 CE	1853	Stratovolc
342070	Tolimán	Guatemala	Unknown	NA	Stratovolc
342080	Acatenango	Guatemala	1972 CE	1972	Stratovolc
342090	Fuego	Guatemala	2023 CE	2023	Stratovolc



342100	Agua	Guatemala	Unknown	NA	Stratovolc
342110	Pacaya	Guatemala	2021 CE	2021	Complex
342111	Cuilapa- Barbarena	Guatemala	Unknown	NA	Volcanic fi
342120	Tecuamburro	Guatemala	960 BCE	-960	Stratovolc
342121	Jumaytepeque	Guatemala	Unknown	NA	Stratovolc
342130	Moyuta	Guatemala	Unknown	NA	Stratovolc
342140	Flores	Guatemala	Unknown	NA	Volcanic fi

342141	Tahual	Guatemala	Unknown	NA	Stratovolc
342150	Santiago, Cerro	Guatemala	Unknown	NA	Volcanic fi
342160	Suchitan	Guatemala	Unknown	NA	Stratovolc
342170	Chingo	Guatemala- El Salvador	Unknown	NA	Stratovolc
342180	Ixtepeque	Guatemala	Unknown	NA	Lava dome
342190	Ipala	Guatemala	Unknown	NA	Stratovolc

342200	Chiquimula Volcanic Field	Guatemala	Unknown	NA	Volcanic fi
343001	San Diego	El Salvador- Guatemala	Unknown	NA	Volcanic fi
343002	Singuil, Cerro	El Salvador	Unknown	NA	Volcanic fi
343010	Apaneca Range	El Salvador	Unknown	NA	Stratovolc
343020	Santa Ana	El Salvador	2005 CE	2005	Stratovolc
343030	Izalco	El Salvador	1966 CE	1966	Stratovolc

343041	Coatepeque Caldera	El Salvador	Unknown	NA	Caldera
343050	San Salvador	El Salvador	1917 CE	1917	Stratovolc
343051	Cinotepeque, Cerro	El Salvador	Unknown	NA	Volcanic fi
343052	Guazapa	El Salvador	Unknown	NA	Stratovolc
343060	Ilopango	El Salvador	1880 CE	1880	Caldera
343070	San Vicente	El Salvador	Unknown	NA	Stratovolc

343071	Apastepeque Field	El Salvador	Unknown	NA	Volcanic fi
343072	Taburete	El Salvador	Unknown	NA	Stratovolc
343080	Tecapa	El Salvador	Unknown	NA	Stratovolc
343081	Usulután	El Salvador	Unknown	NA	Stratovolc
343082	Tigre, El	El Salvador	Unknown	NA	Stratovolc
343090	Chinameca	El Salvador	Unknown	NA	Stratovolc

343100	San Miguel	El Salvador	2023 CE	2023	Stratovolc
343101	Aramuaca, Laguna	El Salvador	Unknown	NA	Maar
343130	Tigre, Isla del	Honduras	Unknown	NA	Stratovolc
343140	Zacate Grande, Isla	Honduras	Unknown	NA	Stratovolc
343150	Yojoa, Lago	Honduras	7638 BCE	-7638	Volcanic fi
344010	Cosiguina	Nicaragua	1859 CE	1859	Stratovolc

344020	San Cristobal	Nicaragua	2022 CE	2022	Stratovolc
344040	Telica	Nicaragua	2022 CE	2022	Stratovolc
344060	Rota	Nicaragua	Unknown	NA	Stratovolc
344070	Negro, Cerro	Nicaragua	1999 CE	1999	Pyroclasti
344080	Pilas, Las	Nicaragua	1954 CE	1954	Complex
344090	Momotombo	Nicaragua	2016 CE	2016	Stratovolc

344091	Apoyeque	Nicaragua	50 BCE	-50	Pyroclasti
344092	Nejapa-Miraflores	Nicaragua	1060 CE	1060	Fissure ve
344100	Masaya	Nicaragua	2023 CE	2023	Caldera
344101	Granada	Nicaragua	Unknown	NA	Fissure ve
344110	Mombacho	Nicaragua	Unknown	NA	Stratovolc
344111	Zapatera	Nicaragua	Unknown	NA	Shield



344120	Concepcion	Nicaragua	2011 CE	2011	Stratovolc
344131	Esteli	Nicaragua	Unknown	NA	Fissure ve
344132	Ciguatepe, Cerro el	Nicaragua	Unknown	NA	Stratovolc
344133	Lajas, Las	Nicaragua	Unknown	NA	Shield
345010	Orosi	Costa Rica	Unknown	NA	Stratovolc
345020	Rincon de la Vieja	Costa Rica	2023 CE	2023	Complex

345030	Miravalles	Costa Rica	1946 CE	1946	Stratovolc
345031	Tenorio	Costa Rica	Unknown	NA	Stratovolc
345033	Arenal	Costa Rica	2010 CE	2010	Stratovolc
345034	Platanar	Costa Rica	Unknown	NA	Stratovolc
345040	Poas	Costa Rica	2022 CE	2022	Stratovolc
345050	Barva	Costa Rica	6050 BCE	-6050	Complex

345060	Irazu	Costa Rica	1977 CE	1977	Stratovolc
345070	Turrialba	Costa Rica	2022 CE	2022	Stratovolc
346010	Baru	Panama	1550 CE	1550	Stratovolc
346030	Valle, El	Panama	Unknown	NA	Stratovolc
351011	Romeral	Colombia	5390 BCE	-5390	Stratovolc
351012	Bravo, Cerro	Colombia	1720 CE	1720	Stratovolc

351020	Ruiz, Nevado del	Colombia	2023 CE	2023	Stratovolc
351021	Santa Isabel	Colombia	850 BCE	-850	Shield
351030	Tolima, Nevado del	Colombia	1943 CE	1943	Stratovolc
351040	Machin	Colombia	1180 CE	1180	Stratovolc
351050	Huila, Nevado del	Colombia	2012 CE	2012	Stratovolc
351060	Purace	Colombia	2022 CE	2022	Stratovolc

351061	Sotara	Colombia	Unknown	NA	Stratovolc
351070	Dona Juana	Colombia	1906 CE	1906	Stratovolc
351080	Galeras	Colombia	2014 CE	2014	Complex
351090	Azufra	Colombia	930 BCE	-930	Stratovolc
351100	Cumbal	Colombia	1926 CE	1926	Stratovolc
351110	Chiles-Cerro Negro	Colombia-Ecuador	1936 CE	1936	Stratovolc

352001	Soche	Ecuador	6650 BCE	-6650	Stratovolc
352002	Chachimbiro	Ecuador	3740 BCE	-3740	Stratovolc
352003	Cuicocha	Ecuador	650 CE	650	Caldera
352004	Imbabura	Ecuador	5550 BCE	-5550	Compound
352005	Mojanda	Ecuador	Unknown	NA	Stratovolc
352006	Cayambe	Ecuador	1786 CE	1786	Compound

352010	Reventador	Ecuador	2023 CE	2023	Stratovolc
352011	Pululahua	Ecuador	290 CE	290	Caldera
352020	Guagua Pichincha	Ecuador	2002 CE	2002	Stratovolc
352021	Atacazo	Ecuador	320 BCE	-320	Stratovolc
352022	Chacana	Ecuador	1773 CE	1773	Caldera
352030	Antisana	Ecuador	1802 CE	1802	Stratovolc
352031	Aliso	Ecuador	2450 BCE	-2450	Stratovolc

352040	Sumaco	Ecuador	1895 CE	1895	Stratovolc
352041	Illiniza	Ecuador	Unknown	NA	Stratovolc
352050	Cotopaxi	Ecuador	2023 CE	2023	Stratovolc
352060	Quilotoa	Ecuador	1280 CE	1280	Caldera
352071	Chimborazo	Ecuador	550 CE	550	Stratovolc
352080	Tungurahua	Ecuador	2016 CE	2016	Stratovolc



352081	Licto	Ecuador	Unknown	NA	Pyroclasti
352090	Sangay	Ecuador	2023 CE	2023	Stratovolc
353010	Fernandina	Ecuador	2020 CE	2020	Shield
353011	Ecuador	Ecuador	1150 CE	1150	Shield
353020	Wolf	Ecuador	2022 CE	2022	Shield
353030	Darwin	Ecuador	1813 CE	1813	Shield
353040	Alcedo	Ecuador	1993 CE	1993	Shield

353050	Negra, Sierra	Ecuador	2018 CE	2018	Shield
353060	Azul, Cerro	Ecuador	2008 CE	2008	Shield
353070	Pinta	Ecuador	1928 CE	1928	Shield
353080	Marchena	Ecuador	1991 CE	1991	Shield
353081	Genovesa	Ecuador	Unknown	NA	Shield
353090	Santiago	Ecuador	1906 CE	1906	Shield
353091	Santa Cruz	Ecuador	Unknown	NA	Shield
353120	San Cristobal	Ecuador	Unknown	NA	Shield

354000	Quimsachata	Peru	4450 BCE	-4450	Lava dome
354001	Auquihuato, Cerro	Peru	Unknown	NA	Pyroclasti
354002	Sara Sara	Peru	Unknown	NA	Stratovolc
354003	Coropuna	Peru	Unknown	NA	Stratovolc
354004	Andahua- Orcopampa	Peru	1490 CE	1490	Volcanic fi
354005	Huambo	Peru	700 BCE	-700	Volcanic fi

354006	Sabancaya	Peru	2023 CE	2023	Stratovolc
354007	Chachani, Nevado	Peru	Unknown	NA	Stratovolc
354008	Nicholson, Cerro	Peru	Unknown	NA	Pyroclasti
354010	Misti, El	Peru	1985 CE	1985	Stratovolc
354020	Ubinas	Peru	2019 CE	2019	Stratovolc
354030	Huaynaputina	Peru	1600 CE	1600	Stratovolc

354031	Ticsani	Peru	1800 CE	1800	Lava dome
354040	Tutupaca	Peru	1802 CE	1802	Stratovolc
354050	Yucamane	Peru	1320 BCE	-1320	Stratovolc
354060	Casiri, Nevados	Peru	Unknown	NA	Stratovolc
355010	Tacora	Chile-Peru	Unknown	NA	Stratovolc
355011	Taapaca	Chile	320 BCE	-320	Complex
355012	Parinacota	Chile-Bolivia	290 CE	290	Stratovolc

355020	Guallatiri	Chile	1960 CE	1960	Stratovolc
355021	Tambo Quemado	Bolivia	Unknown	NA	Pyroclasti
355030	Isluga	Chile	1913 CE	1913	Stratovolc
355032	Tata Sabaya	Bolivia	Unknown	NA	Stratovolc
355035	Jayu Khota, Laguna	Bolivia	Unknown	NA	Maar(s)
355036	Jatun Mundo Quri	Bolivia	Unknown	NA	Lava dome

Warani

355040	Irruputuncu	Chile-Bolivia	1995 CE	1995	Stratovolc
355050	Olca-Paruma	Chile-Bolivia	Unknown	NA	Stratovolc
355090	Putana	Chile	1810 CE	1810	Stratovolc
355091	Sairecabur	Chile-Bolivia	Unknown	NA	Stratovolc
355092	Licancabur	Chile-Bolivia	Unknown	NA	Stratovolc
355093	Guayaques	Chile-Bolivia	Unknown	NA	Lava dome

355094	Purico Complex	Chile	Unknown	NA	Pyroclasti
355095	Colachi	Chile	Unknown	NA	Stratovolc
355096	Acamarachi	Chile	Unknown	NA	Stratovolc
355098	Chiliques	Chile	Unknown	NA	Stratovolc
355100	Lascar	Chile	2023 CE	2023	Stratovolc
355101	Cordon de Puntas	Chile	Unknown	NA	Stratovolc



## Negras

355102	Miniques	Chile	Unknown	NA	Stratovolc
355103	Tujle, Cerro	Chile	Unknown	NA	Maar
355104	Caichinque	Chile	Unknown	NA	Stratovolc
355105	Tilocalar	Chile	Unknown	NA	Lava cone
355107	Pular	Chile	Unknown	NA	Stratovolc
355108	Negrillar, La	Chile	Unknown	NA	Pyroclasti

355109	Socompa	Chile- Argentina	5250 BCE	-5250	Stratovolc
355110	Llullaillaco	Chile- Argentina	1877 CE	1877	Stratovolc
355112	Corrida de Cori Volcanic Field	Chile- Argentina	Unknown	NA	Stratovolc
355120	Lastarria	Chile- Argentina	Unknown	NA	Stratovolc
355121	Cordon del Azufre	Chile- Argentina	Unknown	NA	Complex
355122	Bayo Gorbea,	Chile-	Unknown	NA	Complex

Cerro		Argentina			
355123	Nevada, Sierra	Chile- Argentina	Unknown	NA	Complex
355124	Falso Azufre	Chile- Argentina	Unknown	NA	Complex
355125	Incahuasi, Nevado de	Chile- Argentina	Unknown	NA	Stratovolc
355130	Ojos del Salado, Nevados	Chile- Argentina	750 CE	750	Stratovolc
355131	Solo, El	Chile- Argentina	Unknown	NA	Stratovolc
355150	Tuzgle	Argentina	Unknown	NA	Stratovolc

355160	Aracar	Argentina	Unknown	NA	Stratovolc
355161	Unnamed	Argentina	Unknown	NA	Pyroclasti
355180	Antofagasta Volcanic Field	Argentina	Unknown	NA	Volcanic fi
355190	Condor, El	Argentina	Unknown	NA	Stratovolc
355200	Peinado	Argentina	Unknown	NA	Stratovolc
355210	Blanco, Cerro	Argentina	2300 BCE	-2300	Caldera

355220	Tipas	Argentina	Unknown	NA	Complex
356011	Rapa Nui	Chile	Unknown	NA	Shield(s)
357010	Tupungatito	Chile- Argentina	1987 CE	1987	Stratovolc
357020	San Jose	Chile- Argentina	1960 CE	1960	Stratovolc
357021	Maipo	Chile- Argentina	1912 CE	1912	Caldera
357022	Palomo	Chile	Unknown	NA	Stratovolc

357023	Atuel, Caldera del	Argentina	Unknown	NA	Caldera
357024	Risco Plateado	Argentina	Unknown	NA	Stratovolc
357030	Tinguiririca	Chile	1917 CE	1917	Stratovolc
357040	Planchon-Peteroa	Chile	2019 CE	2019	Stratovolc
357041	Infiernillo	Argentina	6890 BCE	-6890	Volcanic fi
357042	Calabozos	Chile	Unknown	NA	Caldera

357050	Descabezado Grande	Chile	1933 CE	1933	Stratovolc
357060	Azul, Cerro	Chile	1967 CE	1967	Stratovolc
357061	Maule, Laguna del	Chile	50 BCE	-50	Caldera
357062	San Pedro-Pellado	Chile	Unknown	NA	Stratovolc
357063	Longavi, Nevado de	Chile	4890 BCE	-4890	Stratovolc
357064	Blancas, Lomas	Chile	Unknown	NA	Stratovolc

357065	Resago, Volcan	Chile	Unknown	NA	Pyroclasti
357066	Payun Matru	Argentina	5050 BCE	-5050	Volcanic fi
357070	Chillan, Nevados de	Chile	2022 CE	2022	Stratovolc
357072	Tromen Volcanic Plateau	Argentina	1822 CE	1822	Stratovolc
357080	Antuco	Chile	1869 CE	1869	Stratovolc
357090	Copahue	Chile- Argentina	2021 CE	2021	Stratovolc



357091	Callaqui	Chile	1980 CE	1980	Stratovolc
357093	Tolhuaca	Chile	4000 BCE	-4000	Stratovolc
357100	Lonquimay	Chile	1990 CE	1990	Stratovolc
357102	Blanca, Laguna	Argentina	Unknown	NA	Volcanic fi
357110	Llaima	Chile	2009 CE	2009	Stratovolc
357111	Sollipulli	Chile	1240 CE	1240	Caldera
357112	Caburgua- Huelemolle	Chile	5050 BCE	-5050	Pyroclasti

357120	Villarrica	Chile	2023 CE	2023	Stratovolc
357121	Quetrupillan	Chile	255 CE	255	Stratovolc
357122	Lanin	Chile- Argentina	560 CE	560	Stratovolc
357123	Huanquihue Group	Argentina	1750 CE	1750	Stratovolc
357130	Mocho- Choshuenco	Chile	1937 CE	1937	Stratovolc
357140	Carran-Los Venados	Chile	1979 CE	1979	Pyroclasti

357150	Puyehue-Cordon Caulle	Chile	2012 CE	2012	Stratovolc
357153	Antillanca Volcanic Complex	Chile	230 BCE	-230	Stratovolc
357160	Puntiagudo- Cordon Cenizos	Chile	1850 CE	1850	Stratovolc
358010	Osorno	Chile	1869 CE	1869	Stratovolc
358011	Tronador	Chile- Argentina	Unknown	NA	Stratovolc
358012	Cayutue-La Vigueria	Chile	190 BCE	-190	Volcanic fi

358020	Calbuco	Chile	2015 CE	2015	Stratovolc
358022	Yate	Chile	1090 CE	1090	Stratovolc
358023	Hornopiren	Chile	340 CE	340	Stratovolc
358024	Apagado	Chile	590 BCE	-590	Pyroclasti
358025	Crater Basalt Volcanic Field	Argentina	Unknown	NA	Volcanic fi
358030	Huequi	Chile	1920 CE	1920	Lava dome

358040	Michinmahuida	Chile	1835 CE	1835	Stratovolc
358041	Chaiten	Chile	2011 CE	2011	Caldera
358049	Yanteles	Chile	6650 BCE	-6650	Stratovolc
358050	Corcovado	Chile	4920 BCE	-4920	Stratovolc
358052	Melimoyu	Chile	200 CE	200	Stratovolc
358053	Puyuhuapi	Chile	Unknown	NA	Pyroclasti

358054	Mentolat	Chile	1710 CE	1710	Stratovolc
358055	Cay	Chile	Unknown	NA	Stratovolc
358056	Maca	Chile	1560 CE	1560	Stratovolc
358057	Hudson, Cerro	Chile	2011 CE	2011	Stratovolc
358060	Lautaro	Chile	1979 CE	1979	Stratovolc
358062	Aguilera	Chile	1250 BCE	-1250	Stratovolc

358063	Reclus	Chile	1908 CE	1908	Pyroclasti
358064	Meullin	Chile	Unknown	NA	Volcanic fi
358070	Burney, Monte	Chile	1910 CE	1910	Stratovolc
358080	Pali-Aike Volcanic Field	Chile-Argentina	5550 BCE	-5550	Volcanic fi
358090	Fueguino	Chile	1820 CE	1820	Lava dome
360010	Saba	Netherlands	1640 CE	1640	Stratovolc
360020	Quill, The	Netherlands	250 CE	250	Stratovolc

360030	Liamuiga	Saint Kitts and Nevis	160 CE	160	Stratovolc
360040	Nevis Peak	Saint Kitts and Nevis	Unknown	NA	Stratovolc
360050	Soufriere Hills	United Kingdom	2013 CE	2013	Stratovolc
360060	Soufriere Guadeloupe	France	1977 CE	1977	Stratovolc
360080	Diabes, Morne aux	Dominica	Unknown	NA	Lava dome
360090	Diablotins, Morne	Dominica	Unknown	NA	Stratovolc
360100	Trois Pitons, Morne	Dominica	920 CE	920	Complex
360101	Watt, Morne	Dominica	1997 CE	1997	Stratovolc



360110	Plat Pays, Morne	Dominica	1270 CE	1270	Stratovolc
360120	Pelee	France	1932 CE	1932	Stratovolc
360140	Qualibou	Saint Lucia	1766 CE	1766	Caldera
360150	Soufriere St. Vincent	Saint Vincent and the Grenadines	2021 CE	2021	Stratovolc
360160	Kick 'em Jenny	Grenada	2017 CE	2017	Submarine
360170	St. Catherine	Grenada	Unknown	NA	Stratovolc
370010	Snaefellsjokull	Iceland	200 CE	200	Stratovolc

370020	Helgrindur	Iceland	Unknown	NA	Volcanic fi
370030	Ljosufjoll	Iceland	960 CE	960	Volcanic fi
371020	Reykjanes	Iceland	1831 CE	1831	Crater rov
371022	Eldey	Iceland	1926 CE	1926	Submarine
371030	Krysuvik- Trolladyngja	Iceland	1340 CE	1340	Crater rov
371032	Fagradalsfjall	Iceland	2022 CE	2022	Fissure ve
371040	Brennisteinsfjoll	Iceland	1341 CE	1341	Crater rov
371050	Hengill	Iceland	150 CE	150	Crater rov

371051	Hromundartindur	Iceland	Unknown	NA	Stratovolc
371060	Grimsnes	Iceland	3500 BCE	-3500	Volcanic fi
371070	Prestahnukur	Iceland	3350 BCE	-3350	Subglacial
371080	Oddnyjarhnjukur- Langjokull	Iceland	950 CE	950	Subglacial
371090	Hofsjokull	Iceland	Unknown	NA	Subglacial
372010	Vestmannaeyjar	Iceland	1973 CE	1973	Submarine
372020	Eyjafjallajokull	Iceland	2010 CE	2010	Stratovolc
372030	Katla	Iceland	1918 CE	1918	Subglacial

372040	Tindfjallajokull	Iceland	Unknown	NA	Stratovolc
372050	Torfajokull	Iceland	1477 CE	1477	Stratovolc
372070	Hekla	Iceland	2000 CE	2000	Stratovolc
373010	Grimsvotn	Iceland	2011 CE	2011	Caldera
373012	Thordarhyrna	Iceland	1904 CE	1904	Stratovolc
373030	Bardarbunga	Iceland	2015 CE	2015	Stratovolc
373040	Tungnafellsjokull	Iceland	Unknown	NA	Stratovolc
373050	Kverkfjoll	Iceland	1968 CE	1968	Stratovolc

373060	Askja	Iceland	1961 CE	1961	Stratovolc
373070	Fremrinamar	Iceland	1200 BCE	-1200	Stratovolc
373080	Krafla	Iceland	1984 CE	1984	Caldera
373082	Heidarspordar	Iceland	300 BCE	-300	Fissure ve
373090	Theistareykir	Iceland	900 BCE	-900	Shield
373100	Tjornes Fracture Zone	Iceland	1868 CE	1868	Submarine
374010	Oraefajokull	Iceland	1728 CE	1728	Stratovolc
374020	Esjufjoll	Iceland	Unknown	NA	Stratovolc

374801	Snaefell	Iceland	Unknown	NA	Stratovolcano
375010	Kolbeinsey Ridge	Iceland	1755 CE	1755	Submarine
376010	Jan Mayen	Norway	1985 CE	1985	Stratovolcano
377020	East Gakkel Ridge at 85°E	Undersea Features	1999 CE	1999	Submarine
381040	Pico Fracture Zone	Undersea Features	1865 CE	1865	Submarine
382001	Flores	Portugal	950 BCE	-950	Stratovolcano
382010	Fayal	Portugal	1958 CE	1958	Stratovolcano
382020	Pico	Portugal	1720 CE	1720	Stratovolcano

382030	Sao Jorge	Portugal	1902 CE	1902	Fissure ve
382040	Graciosa	Portugal	1950 BCE	-1950	Stratovolc
382050	Terceira	Portugal	2000 CE	2000	Stratovolc
382070	Don Joao de Castro Bank	Portugal	1720 CE	1720	Submarine
382080	Sete Cidades	Portugal	1880 CE	1880	Stratovolc
382081	Picos Fissural Volcanic System	Portugal	1652 CE	1652	Pyroclasti
382090	Agua de Pau	Portugal	1564 CE	1564	Stratovolc
382100	Furnas	Portugal	1630 CE	1630	Stratovolc

382110	Monaco Bank	Portugal	1911 CE	1911	Submarine
382120	Madeira	Portugal	4500 BCE	-4500	Shield
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# group\_by() and summarise()

- We will learn about these functions on the last day!
- You can get the mean, median, standard deviation, min, max, count, etc.
- You can also calculate your own summary statistics

*What summary statistic does this code calculate?*

```
1 library(tidyverse)
2 eruptions %>%
3   group_by(subregion) %>%
4   summarise(mean_year_erupted = mean(year, na.rm=T),
5             unknown_statistic = sd(year, na.rm=T)/sqrt(n()))
```

```
# A tibble: 105 × 3
  subregion                mean_year_erupted unknown_statistic
  <chr>                  <dbl>             <dbl>
1 Admiralty Islands      1964.              6.12
2 Africa (central)       -833.             1330.
3 Africa (eastern)       -1001.             847.
4 Africa (northeastern) and Red Sea 1817.              62.0
5 Africa (northern)      -1367.             571.
6 Africa (western)       1962.              22.2
7 Alaska (eastern)       -92.8              682.
8 Alaska (southwestern)  1817.             156.
9 Alaska (western)       -490              559.
10 Alaska Peninsula      694.              350.
# i 95 more rows
```

# Filtering Rows

```
1 ?dplyr::arrange
```

```
1 ?dplyr::filter
```

# arrange()

- Orders rows by a variable
- Often used with summarise() to make tables more presentable

```
1 eruptions %>%
2   group_by(region) %>%
3   summarise(mean_year = mean(year, na.rm=T),
4             stdev_year = sd(year, na.rm=T)) %>%
5   arrange(mean_year)
```

```
# A tibble: 19 × 3
  region                mean_year stdev_year
  <chr>                <dbl>     <dbl>
1 Canada and Western USA -1018.    3241.
2 Mediterranean and Western Asia -607.    3093.
3 Kamchatka and Mainland Asia -359.    2773.
4 Africa and Red Sea 245.    3333.
5 Middle East and Indian Ocean 393.    2551.
6 Antarctica 528.    3095.
7 South America 554.    2430.
8 México and Central America 888.    2249.
9 Japan, Taiwan, Marianas 936.    2286.
10 Philippines and SE Asia 939.    2345.
11 Alaska 1026.    1871.
12 Iceland and Arctic Ocean 1068.    1519.
13 Hawaii and Pacific Ocean 1101.    1631.
14 Atlantic Ocean 1186.    1568.
15 Melanesia and Australia 1380.    1682.
16 New Zealand to Fiji 1416.    1578.
17 West Indies 1497.    694.
18 Kuril Islands 1648.    1695.
19 ...
```

# filter()

- Include or exclude cases based on values
- You do this by writing **logical statements** in filter()

```
1 kable(people)
```

name	age	humor
Alice	25	Bad
Spew	16	Good
Charlemagne	42	Good
Kay	18	Bad
Mackenzie	3	Terrible
Spirulina	16	Too Good
Jason	20	Good

```
1 # I only want my besties to be adults with a
2 # good (but not too good) sense of humor
3 besties <- people %>%
4   filter(age > 18,
5          humor == "Good")
6 kable(besties)
```

name	age	humor
Charlemagne	42	Good
Jason	20	Good



- Open 14\_manipulate.Rmd
- Read **Arranging and Filtering Rows**

# Manipulating Columns

```
1 ?dplyr::select
```

```
1 ?dplyr::mutate
```

# select()

- Include, exclude, and rearrange columns
- Very important for reducing your cognitive load :)

```
1 eruptions %>%  
2   select(volcano_name, year, region, subregion) %>%  
3   select(-subregion) %>%  
4   knitr::kable()
```

volcano_name	year	region
West Eifel Volcanic Field	-8300	Mediterranean and Western Asia
Chaine des Puys	-4040	Mediterranean and Western Asia
Olot Volcanic Field	NA	Mediterranean and Western Asia
Calatrava Volcanic Field	-3600	Mediterranean and Western Asia
Colli Albani	NA	Mediterranean and Western Asia

Campi Flegrei	1538	Mediterranean and Western Asia
Vesuvius	1944	Mediterranean and Western Asia
Ischia	1302	Mediterranean and Western Asia
Palinuro	-8040	Mediterranean and Western Asia
Stromboli	2023	Mediterranean and Western Asia
Panarea	NA	Mediterranean and Western Asia
Lipari	1230	Mediterranean and Western Asia
Vulcano	1890	Mediterranean and Western Asia
Etna	2023	Mediterranean and Western Asia



Campi Flegrei del Mar di Sicilia	1867	Mediterranean and Western Asia
Pantelleria	1891	Mediterranean and Western Asia
Marsili	-1050	Mediterranean and Western Asia
Methana	-258	Mediterranean and Western Asia
Milos	140	Mediterranean and Western Asia
Santorini	1950	Mediterranean and Western Asia
Nisyros	1888	Mediterranean and Western Asia
Yali	NA	Mediterranean and Western Asia
Kula	NA	Mediterranean and Western Asia

Karapinar Field	NA	Mediterranean and Western Asia
Hasan Dagı	NA	Mediterranean and Western Asia
Gollu Dag	NA	Mediterranean and Western Asia
Acıgöl-Nevşehir	-2080	Mediterranean and Western Asia
Erciyes Dagı	-6880	Mediterranean and Western Asia
Karaca Dag	NA	Mediterranean and Western Asia
Nemrut Dagı	1650	Mediterranean and Western Asia
Tendürek Dagı	1855	Mediterranean and Western Asia
Ararat	1840	Mediterranean and Western Asia

Elbrus	50	Mediterranean and Western Asia
Kazbek	-750	Mediterranean and Western Asia
Samsari Volcanic Center	NA	Mediterranean and Western Asia
Aragats	NA	Mediterranean and Western Asia
Ghegham Volcanic Ridge	-1900	Mediterranean and Western Asia
Vaiyots-Sar	-2000	Mediterranean and Western Asia
Porak	-778	Mediterranean and Western Asia
Tskhouk-Karckar	-3000	Mediterranean and Western Asia
Tair, Jebel at	2008	Africa and Red Sea
Zubair Group	2013	Africa and Red Sea

Zukur	NA	Africa and Red Sea
Hanish	NA	Africa and Red Sea
Alid	NA	Africa and Red Sea
Dallol	2011	Africa and Red Sea
Gada Ale	NA	Africa and Red Sea
Alu-Dalafilla	2008	Africa and Red Sea
Bora Ale	NA	Africa and Red Sea
Erta Ale	2023	Africa and Red Sea
Ale Bagu	NA	Africa and Red Sea
Hayli Gubbi	NA	Africa and Red Sea
Dubbi	1861	Africa and Red Sea
Nabro	2012	Africa and Red Sea
Mallahle	NA	Africa and Red Sea
Sork Ale	NA	Africa and Red Sea
Asavyo	NA	Africa and Red Sea
Mat Ala	NA	Africa and Red Sea

Tat Ali	NA	Africa and Red Sea
Borawli	NA	Africa and Red Sea
Afdera	NA	Africa and Red Sea
Ma Alalta	NA	Africa and Red Sea
Alayta	1915	Africa and Red Sea
Dabbahu	2005	Africa and Red Sea
Dabbayra	NA	Africa and Red Sea
Manda Hararo	2009	Africa and Red Sea
Groppa	NA	Africa and Red Sea
Kurub	NA	Africa and Red Sea
Manda-Inakir	1928	Africa and Red Sea
Mousa Alli	NA	Africa and Red Sea
Gufa	NA	Africa and Red Sea
Assab Volcanic Field	NA	Africa and Red Sea
Ardoukoba	1978	Africa and Red Sea
Manda Gargori	NA	Africa and Red Sea

Dama Ali	1631	Africa and Red Sea
Gabillemma	NA	Africa and Red Sea
Yangudi	NA	Africa and Red Sea
Ayelu	NA	Africa and Red Sea
Adwa	NA	Africa and Red Sea
Hertali	NA	Africa and Red Sea
Liado Hayk	NA	Africa and Red Sea
Dofan	NA	Africa and Red Sea
Fentale	1820	Africa and Red Sea
Beru	NA	Africa and Red Sea
Kone	1820	Africa and Red Sea
Boset-Bericha	NA	Africa and Red Sea
Bishoftu Volcanic Field	NA	Africa and Red Sea
Sodore	NA	Africa and Red Sea
Gedamsa	NA	Africa and Red Sea
Bora-Bericcio	NA	Africa and Red Sea

Tullu Moye	1900	Africa and Red Sea
Unnamed	NA	Africa and Red Sea
East Ziway	NA	Africa and Red Sea
Butajiri-Silti Field	NA	Africa and Red Sea
Aluto	-50	Africa and Red Sea
O'a Caldera	NA	Africa and Red Sea
Corbetti Caldera	NA	Africa and Red Sea
Bilate River Field	NA	Africa and Red Sea
Tepi	NA	Africa and Red Sea
Northern Lake Abaya Volcanic Field	NA	Africa and Red Sea
East Chamo Basin	NA	Africa and Red Sea
Korath Range	NA	Africa and Red Sea
Mega Volcanic Field	NA	Africa and Red Sea
North Island	NA	Africa and Red Sea
Central Island	NA	Africa and Red Sea
South Island	1888	Africa and Red Sea

Marsabit	NA	Africa and Red Sea
Barrier, The	1921	Africa and Red Sea
Namarunu	-6550	Africa and Red Sea
Segeberua Plateau	NA	Africa and Red Sea
Emuruangogolak	1910	Africa and Red Sea
Silali	-5050	Africa and Red Sea
Paka	-7550	Africa and Red Sea
Korosi	NA	Africa and Red Sea
Ol Kokwe	NA	Africa and Red Sea
Nyambeni Hills	NA	Africa and Red Sea
Menengai	-6050	Africa and Red Sea
Homa Mountain	NA	Africa and Red Sea
Elmenteita Badlands	NA	Africa and Red Sea
Eburru, Ol Doinyo	NA	Africa and Red Sea
Olkaria	1770	Africa and Red Sea
Longonot	1863	Africa and Red Sea



Suswa	NA	Africa and Red Sea
Lengai, Ol Doinyo	2023	Africa and Red Sea
Chyulu Hills	1855	Africa and Red Sea
Meru	1910	Africa and Red Sea
Igwisi Hills	-10450	Africa and Red Sea
Ngozi	1450	Africa and Red Sea
Rungwe	1250	Africa and Red Sea
Kyejo	1800	Africa and Red Sea
Fort Portal	-2120	Africa and Red Sea
Kyatwa	NA	Africa and Red Sea
Katwe-Kikorongo	NA	Africa and Red Sea
Bunyaruguru	NA	Africa and Red Sea
Katunga	NA	Africa and Red Sea
Nyamulagira	2023	Africa and Red Sea
Nyiragongo	2023	Africa and Red Sea
Karisimbi	-8050	Africa and Red Sea

Visoke	1957	Africa and Red Sea
Muhavura	NA	Africa and Red Sea
Bufumbira	NA	Africa and Red Sea
San Carlos	NA	Africa and Red Sea
San Joaquin	NA	Africa and Red Sea
Santa Isabel	1923	Africa and Red Sea
Cameroon	2000	Africa and Red Sea
Tombel Graben	NA	Africa and Red Sea
Oku Volcanic Field	NA	Africa and Red Sea
Todra Volcanic Field	NA	Africa and Red Sea
Tahalra Volcanic Field	NA	Africa and Red Sea
Atakor Volcanic Field	NA	Africa and Red Sea
Manzaz Volcanic Field	NA	Africa and Red Sea
Toh, Tarso	NA	Africa and Red Sea
Tousside, Tarso	NA	Africa and Red Sea
Voon, Tarso	NA	Africa and Red Sea

Koussi, Emi	NA	Africa and Red Sea
Marra, Jebel	-2000	Africa and Red Sea
Kutum Volcanic Field	NA	Africa and Red Sea
Meidob Volcanic Field	-2950	Africa and Red Sea
Bayuda Volcanic Field	850	Africa and Red Sea
Ash Shaam, Harrat	-2670	Middle East and Indian Ocean
Lunayyir, Harrat	1000	Middle East and Indian Ocean
Ithnayn, Harrat	NA	Middle East and Indian Ocean
Khaybar, Harrat	650	Middle East and Indian Ocean
Rahat, Harrat	1256	Middle East and Indian Ocean
Kishb, Harrat	NA	Middle East and Indian Ocean
Birk, Harrat al	NA	Middle East and Indian

## Ocean

Yar, Jabal	1810	Middle East and Indian Ocean
Arhab, Harra of	500	Middle East and Indian Ocean
Marha, Jabal el-	NA	Middle East and Indian Ocean
Haylan, Jabal	-1200	Middle East and Indian Ocean
Dhamar, Harras of	NA	Middle East and Indian Ocean
Sawad, Harra Es-	1253	Middle East and Indian Ocean
Balhaf-Bir Ali Volcanic Field	NA	Middle East and Indian Ocean
Bir Borhut	NA	Middle East and Indian Ocean
Damavand	-5350	Middle East and Indian

## Ocean

Grille, La	NA	Middle East and Indian Ocean
Mayotte	2019	Middle East and Indian Ocean
Karthala	2007	Middle East and Indian Ocean
Ambre-Bobaomby	NA	Middle East and Indian Ocean
Nosy-Be	NA	Middle East and Indian Ocean
Ankaizina Field	NA	Middle East and Indian Ocean
Itasy Volcanic Field	-6050	Middle East and Indian Ocean
Vakinankaratra	NA	Middle East and Indian Ocean
Fournaise, Piton de la	2022	Middle East and Indian

## Ocean

Boomerang Seamount	1995	Middle East and Indian Ocean
Amsterdam Island	NA	Middle East and Indian Ocean
St. Paul	1793	Middle East and Indian Ocean
Heard	2023	Middle East and Indian Ocean
McDonald Islands	2005	Middle East and Indian Ocean
Kerguelen Islands	NA	Middle East and Indian Ocean
Est, Ile de l'	NA	Middle East and Indian Ocean
Possession, Ile de la	NA	Middle East and Indian Ocean
Cochons, Ile aux	NA	Middle East and Indian

## Ocean

Prince Edward Island	NA	Middle East and Indian Ocean
Marion Island	2004	Middle East and Indian Ocean
Kaikohe-Bay of Islands	400	New Zealand to Fiji
Auckland Volcanic Field	1446	New Zealand to Fiji
Mayor Island	-5060	New Zealand to Fiji
Taranaki	1800	New Zealand to Fiji
Whakaari/White Island	2019	New Zealand to Fiji
Okataina	1981	New Zealand to Fiji
Taupo	260	New Zealand to Fiji
Tongariro	2012	New Zealand to Fiji
Ruapehu	2007	New Zealand to Fiji
Clark	NA	New Zealand to Fiji
Tangaroa	NA	New Zealand to Fiji

Rumble V	NA	New Zealand to Fiji
Rumble IV	NA	New Zealand to Fiji
Rumble III	2008	New Zealand to Fiji
Rumble II West	NA	New Zealand to Fiji
Healy	1360	New Zealand to Fiji
Brothers	NA	New Zealand to Fiji
Wright	NA	New Zealand to Fiji
Havre Seamount	2012	New Zealand to Fiji
Curtis Island	NA	New Zealand to Fiji
Macauley	-4360	New Zealand to Fiji
Giggenbach	NA	New Zealand to Fiji
Raoul Island	2006	New Zealand to Fiji
Monowai	2014	New Zealand to Fiji
Unnamed	NA	New Zealand to Fiji
Unnamed	1932	New Zealand to Fiji
Unnamed	NA	New Zealand to Fiji



Unnamed	2017	New Zealand to Fiji
Hunga Tonga-Hunga Ha'apai	2022	New Zealand to Fiji
Fonuafo'ou	1936	New Zealand to Fiji
Tofua	2023	New Zealand to Fiji
Kao	1847	New Zealand to Fiji
Lateiki	2019	New Zealand to Fiji
Home Reef	2022	New Zealand to Fiji
Late	1854	New Zealand to Fiji
Unnamed	2019	New Zealand to Fiji
Fonualei	1957	New Zealand to Fiji
Tafahi	NA	New Zealand to Fiji
Curacoa	1979	New Zealand to Fiji
Niuafo'ou	1985	New Zealand to Fiji
Dugong	NA	New Zealand to Fiji
Lobster	NA	New Zealand to Fiji
Tafu-Maka	2008	New Zealand to Fiji

West Mata	2009	New Zealand to Fiji
Niuatahi	NA	New Zealand to Fiji
Vailulu'u	2003	New Zealand to Fiji
Ta'u	NA	New Zealand to Fiji
Ofu-Olosega	1866	New Zealand to Fiji
Tutuila	440	New Zealand to Fiji
Malumalu	NA	New Zealand to Fiji
Upolu	NA	New Zealand to Fiji
Savaii	1911	New Zealand to Fiji
Taveuni	1550	New Zealand to Fiji
Koro	NA	New Zealand to Fiji
Nabukelevu	1660	New Zealand to Fiji
St. Andrew Strait	1957	Melanesia and Australia
Baluan	NA	Melanesia and Australia
Central Bismarck Sea	1972	Melanesia and Australia
Blup Blup	NA	Melanesia and Australia

Kadovar	2023	Melanesia and Australia
Bam	1960	Melanesia and Australia
Boisa	NA	Melanesia and Australia
Manam	2023	Melanesia and Australia
Karkar	1979	Melanesia and Australia
Hankow Reef	NA	Melanesia and Australia
Long Island	1993	Melanesia and Australia
Umboi	NA	Melanesia and Australia
Ritter Island	2007	Melanesia and Australia
Sakar	NA	Melanesia and Australia
Langila	2023	Melanesia and Australia
Mundua	NA	Melanesia and Australia
Garove	NA	Melanesia and Australia
Dakataua	1895	Melanesia and Australia
Bola	NA	Melanesia and Australia
Garua Harbour	NA	Melanesia and Australia

Krummel-Garbuna-Welcker	2008	Melanesia and Australia
Lolo	NA	Melanesia and Australia
Witori	2012	Melanesia and Australia
Sulu Range	NA	Melanesia and Australia
Hargy	950	Melanesia and Australia
Bamus	1886	Melanesia and Australia
Ulawun	2023	Melanesia and Australia
Lolobau	1912	Melanesia and Australia
Rabaul	2014	Melanesia and Australia
Tavui	-4946	Melanesia and Australia
Lamington	1956	Melanesia and Australia
Hydrographers Range	NA	Melanesia and Australia
Managlase Plateau	NA	Melanesia and Australia
Victory	1935	Melanesia and Australia
Sessagara	NA	Melanesia and Australia
Waiowa	1944	Melanesia and Australia

Goodenough	NA	Melanesia and Australia
Iamalele	NA	Melanesia and Australia
Dawson Strait Group	1350	Melanesia and Australia
Lihir	NA	Melanesia and Australia
Ambitle	-350	Melanesia and Australia
Balbi	NA	Melanesia and Australia
Billy Mitchell	1580	Melanesia and Australia
Bagana	2023	Melanesia and Australia
Takuan Group	NA	Melanesia and Australia
Loloru	-1050	Melanesia and Australia
Simbo	1910	Melanesia and Australia
Kana Keoki	NA	Melanesia and Australia
Coleman Seamount	NA	Melanesia and Australia
Kavachi	2023	Melanesia and Australia
Unnamed	NA	Melanesia and Australia
Gallego	NA	Melanesia and Australia

Savo	1847	Melanesia and Australia
Tinakula	2023	Melanesia and Australia
Motlav	NA	Melanesia and Australia
Suretamatai	1966	Melanesia and Australia
Gaua	2022	Melanesia and Australia
Mere Lava	NA	Melanesia and Australia
Ambae	2023	Melanesia and Australia
Ambrym	2022	Melanesia and Australia
Lopevi	2007	Melanesia and Australia
Epi	2023	Melanesia and Australia
Kuwae	1974	Melanesia and Australia
NE Shepherd Islands	NA	Melanesia and Australia
North Vate	NA	Melanesia and Australia
Traitor's Head	1881	Melanesia and Australia
Yasur	2023	Melanesia and Australia
Aneityum	NA	Melanesia and Australia

Eastern Gemini Seamount	1996	Melanesia and Australia
Matthew Island	1956	Melanesia and Australia
Hunter Island	1903	Melanesia and Australia
Newer Volcanics Province	-2900	Melanesia and Australia
McBride Volcanic Province	-5050	Melanesia and Australia
Narcondum	NA	Indonesia
Barren Island	2023	Indonesia
Seulawah Agam	1839	Indonesia
Peuet Sague	2000	Indonesia
Telong, Bur ni	1937	Indonesia
Singkut	1881	Indonesia
Sinabung	2021	Indonesia
Toba	NA	Indonesia
Sibualbuali	NA	Indonesia
Lubukraya	NA	Indonesia
Sorikmarapi	1986	Indonesia

Malintang	NA	Indonesia
Talakmau	NA	Indonesia
Sarik-Gajah	NA	Indonesia
Marapi	2023	Indonesia
Tandikat-Singgalang	1924	Indonesia
Talang	2007	Indonesia
Kerinci	2023	Indonesia
Sumbing	1921	Indonesia
Hululais	NA	Indonesia
Daun, Bukit	NA	Indonesia
Kaba	2000	Indonesia
Dempo	2022	Indonesia
Patah	NA	Indonesia
Ranau	NA	Indonesia
Sekincau Belirang	NA	Indonesia



Suoh	1933	Indonesia
Hulubelu	NA	Indonesia
Rajabasa	NA	Indonesia
Krakatau	2023	Indonesia
Pulosari	NA	Indonesia
Karang	NA	Indonesia
Perbakti-Gagak	1939	Indonesia
Salak	1938	Indonesia
Gede-Pangrango	1957	Indonesia
Patuha	NA	Indonesia
Tangkuban Parahu	2019	Indonesia
Papandayan	2002	Indonesia
Kendang	NA	Indonesia
Guntur	1847	Indonesia
Tampomas	NA	Indonesia
Galunggung	1984	Indonesia

Talagabodas	NA	Indonesia
Ciremai	1951	Indonesia
Slamet	2014	Indonesia
Dieng Volcanic Complex	2021	Indonesia
Sundoro	1971	Indonesia
Sumbing	1730	Indonesia
Ungaran	NA	Indonesia
Telomoyo	NA	Indonesia
Merbabu	1797	Indonesia
Merapi	2023	Indonesia
Muria	-160	Indonesia
Lawu	1885	Indonesia
Wilis	NA	Indonesia
Kelud	2014	Indonesia
Kawi-Butak	NA	Indonesia
Arjuno-Welirang	1952	Indonesia

Penanggungan	NA	Indonesia
Semeru	2023	Indonesia
Tengger Caldera	2020	Indonesia
Lamongan	1898	Indonesia
Iyang-Argapura	NA	Indonesia
Raung	2022	Indonesia
Ijen	1999	Indonesia
Baluran	NA	Indonesia
Buyan-Bratan	NA	Indonesia
Batur	2000	Indonesia
Agung	2019	Indonesia
Rinjani	2016	Indonesia
Tambora	1967	Indonesia
Sangeang Api	2022	Indonesia
Sano, Wai	NA	Indonesia
Ranakah	1991	Indonesia

Inierie	-8050	Indonesia
Inielika	2001	Indonesia
Ebulobo	1969	Indonesia
Iya	1969	Indonesia
Kelimutu	1968	Indonesia
Paluweh	2013	Indonesia
Egon	2008	Indonesia
Lewotobi	2003	Indonesia
Leroboleng	2003	Indonesia
Iliboleng	1993	Indonesia
Lewotolok	2023	Indonesia
Ililabalekan	NA	Indonesia
Iliwerung	2021	Indonesia
Tara, Batu	2015	Indonesia
Sirung	2015	Indonesia
Wurlali	1892	Indonesia

Teon	1904	Indonesia
Nila	1968	Indonesia
Serua	1921	Indonesia
Manuk	NA	Indonesia
Banda Api	1988	Indonesia
Colo	1983	Indonesia
Ambang	2005	Indonesia
Soputan	2020	Indonesia
Lokon-Empung	2015	Indonesia
Mahawu	1977	Indonesia
Klabat	NA	Indonesia
Tangkoko-Duasudara	1880	Indonesia
Ruang	2002	Indonesia
Karangetang	2023	Indonesia
Banua Wuhu	1919	Indonesia
Awu	2004	Indonesia

Tarakan	NA	Indonesia
Dukono	2023	Indonesia
Tobaru	NA	Indonesia
Ibu	2023	Indonesia
Gamkonora	2007	Indonesia
Todoko-Ranu	NA	Indonesia
Jailolo	NA	Indonesia
Hiri	NA	Indonesia
Gamalama	2018	Indonesia
Tidore	NA	Indonesia
Mare	NA	Indonesia
Moti	NA	Indonesia
Kie Besi	1988	Indonesia
Tigalalu	NA	Indonesia
Amasing	NA	Indonesia

Bibinoi	NA	Indonesia
Balut	NA	Philippines and SE Asia
Parker	1641	Philippines and SE Asia
Matutum	1290	Philippines and SE Asia
Apo	NA	Philippines and SE Asia
Leonard Range	120	Philippines and SE Asia
Makaturing	1882	Philippines and SE Asia
Ragang	1916	Philippines and SE Asia
Kalatungan	NA	Philippines and SE Asia
Musuan	NA	Philippines and SE Asia
Malindang	NA	Philippines and SE Asia
Camiguin	1953	Philippines and SE Asia
Cuernos de Negros	NA	Philippines and SE Asia
Kanlaon	2017	Philippines and SE Asia
Mandalagan	NA	Philippines and SE Asia

Silay	NA	Philippines and SE Asia
Cabalían	1820	Philippines and SE Asia
Mahagnao	NA	Philippines and SE Asia
Biliran	1939	Philippines and SE Asia
Bulusan	2022	Philippines and SE Asia
Pocdol Mountains	NA	Philippines and SE Asia
Mayon	2022	Philippines and SE Asia
Masaraga	NA	Philippines and SE Asia
Iriga	NA	Philippines and SE Asia
Isarog	-3500	Philippines and SE Asia
Malindig	NA	Philippines and SE Asia
Banahaw	NA	Philippines and SE Asia
San Pablo Volcanic Field	1350	Philippines and SE Asia
Taal	2022	Philippines and SE Asia
Laguna Caldera	NA	Philippines and SE Asia



Pinatubo	1993	Philippines and SE Asia
Patoc	NA	Philippines and SE Asia
Ambalatungan Group	NA	Philippines and SE Asia
Cagua	1860	Philippines and SE Asia
Camiguin de Babuyan	1857	Philippines and SE Asia
Didicas	1978	Philippines and SE Asia
Babuyan Claro	1924	Philippines and SE Asia
Unnamed	1854	Philippines and SE Asia
Iraya	1454	Philippines and SE Asia
Hainan Volcanic Field	1933	Philippines and SE Asia
Ly Son Group	NA	Philippines and SE Asia
Cendres, Ile des	1923	Philippines and SE Asia
Popa	-6050	Philippines and SE Asia
Tengchong	-5750	Philippines and SE Asia
Kueishantao	1853	Japan, Taiwan, Marianas
Tatun Volcanic Group	648	Japan, Taiwan, Marianas

Submarine Volcano NNE of Iriomotejima	1924	Japan, Taiwan, Marianas
Io-Torishima	1968	Japan, Taiwan, Marianas
Yokoatejima	1835	Japan, Taiwan, Marianas
Akusekijima	NA	Japan, Taiwan, Marianas
Suwanosejima	2023	Japan, Taiwan, Marianas
Nakanoshima	1914	Japan, Taiwan, Marianas
Kuchinoshima	1190	Japan, Taiwan, Marianas
Kuchinoerabujima	2020	Japan, Taiwan, Marianas
Kikai	2020	Japan, Taiwan, Marianas
Ata	885	Japan, Taiwan, Marianas
Aira	2023	Japan, Taiwan, Marianas
Yonemaru-Sumiyoshiike	-6200	Japan, Taiwan, Marianas
Kirishimayama	2018	Japan, Taiwan, Marianas
Fukue	-400	Japan, Taiwan, Marianas
Unzendake	1996	Japan, Taiwan, Marianas

Asosan	2021	Japan, Taiwan, Marianas
Kujusan	1996	Japan, Taiwan, Marianas
Yufu-Tsurumi	867	Japan, Taiwan, Marianas
Abu	-6850	Japan, Taiwan, Marianas
Sanbesan	650	Japan, Taiwan, Marianas
Oki-Dogo	NA	Japan, Taiwan, Marianas
Izu-Tobu	1989	Japan, Taiwan, Marianas
Hakoneyama	2015	Japan, Taiwan, Marianas
Fujisan	1708	Japan, Taiwan, Marianas
Yokodake	1200	Japan, Taiwan, Marianas
Ontakesan	2014	Japan, Taiwan, Marianas
Hakusan	1659	Japan, Taiwan, Marianas
Norikuradake	-50	Japan, Taiwan, Marianas
Akandanayama	NA	Japan, Taiwan, Marianas
Yakedake	1995	Japan, Taiwan, Marianas
Washiba-Kumonotaira	NA	Japan, Taiwan, Marianas

Midagahara	1839	Japan, Taiwan, Marianas
Niigata-Yakeyama	1998	Japan, Taiwan, Marianas
Myokosan	-750	Japan, Taiwan, Marianas
Asamayama	2019	Japan, Taiwan, Marianas
Kusatsu-Shiranesan	2018	Japan, Taiwan, Marianas
Shiga	NA	Japan, Taiwan, Marianas
Harunasan	550	Japan, Taiwan, Marianas
Akagisan	NA	Japan, Taiwan, Marianas
Hiuchigatake	1544	Japan, Taiwan, Marianas
Nikko-Shiranesan	1952	Japan, Taiwan, Marianas
Nantaisan	-9540	Japan, Taiwan, Marianas
Omanago Group	-3050	Japan, Taiwan, Marianas
Takaharayama	-4570	Japan, Taiwan, Marianas
Nasudake	1963	Japan, Taiwan, Marianas
Numazawa	-3400	Japan, Taiwan, Marianas
Bandaisan	1888	Japan, Taiwan, Marianas

Adatarayama	1996	Japan, Taiwan, Marianas
Azumayama	1977	Japan, Taiwan, Marianas
Zaozan [Zaosan]	1940	Japan, Taiwan, Marianas
Hijiori	NA	Japan, Taiwan, Marianas
Naruko	837	Japan, Taiwan, Marianas
Kurikomayama	1950	Japan, Taiwan, Marianas
Chokaisan	1974	Japan, Taiwan, Marianas
Akita-Komagatake	1971	Japan, Taiwan, Marianas
Iwatesan	1919	Japan, Taiwan, Marianas
Hachimantai	-5350	Japan, Taiwan, Marianas
Akita-Yakeyama	1997	Japan, Taiwan, Marianas
Megata	-2050	Japan, Taiwan, Marianas
Iwakisan	1863	Japan, Taiwan, Marianas
Towada	915	Japan, Taiwan, Marianas
Hakkodasan	1550	Japan, Taiwan, Marianas
Osorezan	1787	Japan, Taiwan, Marianas

Izu-Oshima	1990	Japan, Taiwan, Marianas
Toshima	-4550	Japan, Taiwan, Marianas
Niijima	886	Japan, Taiwan, Marianas
Kozushima	838	Japan, Taiwan, Marianas
Miyakejima	2010	Japan, Taiwan, Marianas
Mikurajima	-4100	Japan, Taiwan, Marianas
Kurose Hole	NA	Japan, Taiwan, Marianas
Hachijojima	1606	Japan, Taiwan, Marianas
Aogashima	1785	Japan, Taiwan, Marianas
Kita-Bayonnaise	NA	Japan, Taiwan, Marianas
Myojinsho	1970	Japan, Taiwan, Marianas
Sumisujima	1916	Japan, Taiwan, Marianas
Izu-Torishima	2002	Japan, Taiwan, Marianas
Sofugan	NA	Japan, Taiwan, Marianas
Suiyo Seamount	NA	Japan, Taiwan, Marianas
Mokuyo Seamount	NA	Japan, Taiwan, Marianas

Doyo Seamount	NA	Japan, Taiwan, Marianas
Nishinoshima	2023	Japan, Taiwan, Marianas
Kaikata Seamount	NA	Japan, Taiwan, Marianas
Kaitoku Seamount	1984	Japan, Taiwan, Marianas
Kita-Ioto	2023	Japan, Taiwan, Marianas
Ioto	2022	Japan, Taiwan, Marianas
Kita-Fukutokutai	1954	Japan, Taiwan, Marianas
Fukutoku-Oka-no-Ba	2021	Japan, Taiwan, Marianas
Minami-Hiyoshi	1975	Japan, Taiwan, Marianas
Nikko	NA	Japan, Taiwan, Marianas
Fukujin	1974	Japan, Taiwan, Marianas
Kasuga 1	1959	Japan, Taiwan, Marianas
Kasuga 2	NA	Japan, Taiwan, Marianas
NW Eifuku	NA	Japan, Taiwan, Marianas
Daikoku	NA	Japan, Taiwan, Marianas
Farallon de Pajaros	1967	Japan, Taiwan, Marianas

Ahyi	2023	Japan, Taiwan, Marianas
Supply Reef	1989	Japan, Taiwan, Marianas
Maug Islands	NA	Japan, Taiwan, Marianas
Asuncion	1906	Japan, Taiwan, Marianas
Agrigan	1917	Japan, Taiwan, Marianas
Pagan	2021	Japan, Taiwan, Marianas
Alamagan	870	Japan, Taiwan, Marianas
Guguan	1883	Japan, Taiwan, Marianas
Zealandia Bank	NA	Japan, Taiwan, Marianas
Sarigan	NA	Japan, Taiwan, Marianas
South Sarigan Seamount	2010	Japan, Taiwan, Marianas
Anatahan	2008	Japan, Taiwan, Marianas
East Diamante	NA	Japan, Taiwan, Marianas
Ruby	1995	Japan, Taiwan, Marianas
Esmeralda Bank	NA	Japan, Taiwan, Marianas



NW Rota-1	2010	Japan, Taiwan, Marianas
Forecast Seamount	NA	Japan, Taiwan, Marianas
Seamount X	NA	Japan, Taiwan, Marianas
Mariana Back-Arc Segment at 15.5°N	2015	Japan, Taiwan, Marianas
Oshima-Oshima	1790	Japan, Taiwan, Marianas
Esan	1874	Japan, Taiwan, Marianas
Hokkaido-Komagatake	2000	Japan, Taiwan, Marianas
Toya	2001	Japan, Taiwan, Marianas
Niseko	-4900	Japan, Taiwan, Marianas
Yoteizan	-1050	Japan, Taiwan, Marianas
Kuttara	1820	Japan, Taiwan, Marianas
Shikotsu	1979	Japan, Taiwan, Marianas
Rishirizan	-5830	Japan, Taiwan, Marianas
Tokachidake	2004	Japan, Taiwan, Marianas
Taisetsuzan	1739	Japan, Taiwan, Marianas
Maruyama	1898	Japan, Taiwan, Marianas

Akan	2008	Japan, Taiwan, Marianas
Kussharo	1320	Japan, Taiwan, Marianas
Mashu	1080	Japan, Taiwan, Marianas
Rausudake	1800	Japan, Taiwan, Marianas
Tenchozan	NA	Japan, Taiwan, Marianas
Shiretoko-Iozan	1936	Japan, Taiwan, Marianas
Tomariyama [Golovnin]	1848	Kuril Islands
Raususan [Mendeleev]	1880	Kuril Islands
Ruruidake [Smirnov]	NA	Kuril Islands
Chachadake [Tiatia]	1981	Kuril Islands
Berutarubesan [Berutarube]	NA	Kuril Islands
Moekeshiwan [Lvinaya Past]	-7480	Kuril Islands
Etorofu-Atosanupuri [Atosanupuri]	1932	Kuril Islands
Hitokappu Volcano Group [Bogatyr Ridge]	NA	Kuril Islands
Unnamed	NA	Kuril Islands

Etorofu-Yakeyama [Grozny Group]	2013	Kuril Islands
Odamoisan [Tebenkov]	NA	Kuril Islands
Sashiusudake [Baransky]	1951	Kuril Islands
Chirippusan [Chirip]	1860	Kuril Islands
Moyorodake [Medvezhia]	1999	Kuril Islands
Rakkibetsudake [Demon]	NA	Kuril Islands
Ivao Group	NA	Kuril Islands
Rudakov	NA	Kuril Islands
Tri Sestry	NA	Kuril Islands
Kolokol Group	1973	Kuril Islands
Chirpoi	2016	Kuril Islands
Unnamed	1972	Kuril Islands
Milna	1914	Kuril Islands
Zavaritzki Caldera	1957	Kuril Islands
Prevo Peak	1825	Kuril Islands
Uratman	NA	Kuril Islands

Ketoi	1960	Kuril Islands
Ushishur	1884	Kuril Islands
Srednii	NA	Kuril Islands
Rasshua	1957	Kuril Islands
Sarychev Peak	2021	Kuril Islands
Raikoke	2019	Kuril Islands
Chirinkotan	2022	Kuril Islands
Ekarma	2010	Kuril Islands
Sinarka	1878	Kuril Islands
Kharimkotan	1933	Kuril Islands
Tao-Rusyr Caldera	1952	Kuril Islands
Nemo Peak	1938	Kuril Islands
Shirinki	NA	Kuril Islands
Fuss Peak	1854	Kuril Islands
Karpinsky Group	1952	Kuril Islands
Chikurachki	2023	Kuril Islands

Vernadskii Ridge	NA	Kuril Islands
Ebeko	2023	Kuril Islands
Alaid	2022	Kuril Islands
Kambalny	2017	Kamchatka and Mainland Asia
Koshelev	1690	Kamchatka and Mainland Asia
Yavinsky	-4050	Kamchatka and Mainland Asia
Diky Greben	350	Kamchatka and Mainland Asia
Kurile Lake	-6440	Kamchatka and Mainland Asia
Iliinsky	1901	Kamchatka and Mainland Asia
Zheltony	1923	Kamchatka and Mainland Asia

Ksudach	1907	Kamchatka and Mainland Asia
Olkoviy Volcanic Group	NA	Kamchatka and Mainland Asia
Khodutka	-300	Kamchatka and Mainland Asia
Asacha	NA	Kamchatka and Mainland Asia
Visokiy	NA	Kamchatka and Mainland Asia
Mutnovsky	2000	Kamchatka and Mainland Asia
Gorely	2010	Kamchatka and Mainland Asia
Opala	1776	Kamchatka and Mainland Asia
Tolmachev Dol	300	Kamchatka and Mainland Asia

Vilyuchinsky	-8050	Kamchatka and Mainland Asia
Barkhatnaya Sopka	-3550	Kamchatka and Mainland Asia
Koryaksky	2009	Kamchatka and Mainland Asia
Avachinsky	2001	Kamchatka and Mainland Asia
Dzenzursky	NA	Kamchatka and Mainland Asia
Zhupanovsky	2016	Kamchatka and Mainland Asia
Veer	390	Kamchatka and Mainland Asia
Kostakan	1350	Kamchatka and Mainland Asia
Bakening	-550	Kamchatka and Mainland Asia

Zavaritsky	-800	Kamchatka and Mainland Asia
Akademia Nauk	1996	Kamchatka and Mainland Asia
Karymsky	2022	Kamchatka and Mainland Asia
Maly Semyachik	1952	Kamchatka and Mainland Asia
Bolshoi Semiachik	-4450	Kamchatka and Mainland Asia
Taunshits	-550	Kamchatka and Mainland Asia
Uzon	200	Kamchatka and Mainland Asia
Kikhpinych	1550	Kamchatka and Mainland Asia
Krasheninnikov	1550	Kamchatka and Mainland Asia



Kronotsky	1923	Kamchatka and Mainland Asia
Gamchen	-550	Kamchatka and Mainland Asia
Komarov	950	Kamchatka and Mainland Asia
Vysoky	-550	Kamchatka and Mainland Asia
Kizimen	2013	Kamchatka and Mainland Asia
Tolbachik	2013	Kamchatka and Mainland Asia
Udina	NA	Kamchatka and Mainland Asia
Zimina	NA	Kamchatka and Mainland Asia
Bezymianny	2023	Kamchatka and Mainland Asia

Kamen	NA	Kamchatka and Mainland Asia
Klyuchevskoy	2022	Kamchatka and Mainland Asia
Ushkovsky	1890	Kamchatka and Mainland Asia
Sheveluch	2023	Kamchatka and Mainland Asia
Piip	-5050	Kamchatka and Mainland Asia
Khangar	1500	Kamchatka and Mainland Asia
Cherpuk Group	-4550	Kamchatka and Mainland Asia
Ichinsky	1740	Kamchatka and Mainland Asia
Plosky	NA	Kamchatka and Mainland Asia

Bolshoi-Kekuknaysky	-5310	Kamchatka and Mainland Asia
Alney-Chashakondzha	1600	Kamchatka and Mainland Asia
Shisheika	-2240	Kamchatka and Mainland Asia
Terpuk	-800	Kamchatka and Mainland Asia
Sedanka Lava Field	-7050	Kamchatka and Mainland Asia
Gorny Institute	1250	Kamchatka and Mainland Asia
Kinenin	850	Kamchatka and Mainland Asia
Bliznetsy	-1060	Kamchatka and Mainland Asia
Titila	-550	Kamchatka and Mainland

Asia

Elovsky	-7550	Kamchatka and Mainland Asia
Nylgimelkin	-3550	Kamchatka and Mainland Asia
Spokoiny	-3450	Kamchatka and Mainland Asia
Ostry	-2050	Kamchatka and Mainland Asia
Severny	-1550	Kamchatka and Mainland Asia
Voyampolsky	NA	Kamchatka and Mainland Asia
Udokan Plateau	-220	Kamchatka and Mainland Asia
Vitim Volcanic Field	NA	Kamchatka and Mainland Asia

Tunkin Depression	NA	Kamchatka and Mainland Asia
Jom-Bolok	-5180	Kamchatka and Mainland Asia
Azas Plateau	NA	Kamchatka and Mainland Asia
Taryatu-Chulutu	-2980	Kamchatka and Mainland Asia
Khanuy Gol	NA	Kamchatka and Mainland Asia
Dariganga Volcanic Field	NA	Kamchatka and Mainland Asia
Ashikule Volcanic Field	1951	Kamchatka and Mainland Asia
Honggeertu	NA	Kamchatka and Mainland Asia
Arxan-Chaihe	0	Kamchatka and Mainland Asia

Keluo Group	NA	Kamchatka and Mainland Asia
Wudalianchi	1776	Kamchatka and Mainland Asia
Jingpohu	-520	Kamchatka and Mainland Asia
Longgang Group	350	Kamchatka and Mainland Asia
Changbaishan	1903	Kamchatka and Mainland Asia
Ch'uga-ryong	NA	Kamchatka and Mainland Asia
Ulreung	-2990	Kamchatka and Mainland Asia
Halla	1007	Kamchatka and Mainland Asia
Buldir	NA	Alaska
Kiska	1990	Alaska

Segula	NA	Alaska
Davidof	NA	Alaska
Little Sitkin	1830	Alaska
Semisopochnoi	2023	Alaska
Gareloi	1989	Alaska
Tanaga	1914	Alaska
Takawangha	1550	Alaska
Bobrof	NA	Alaska
Kanaga	2012	Alaska
Moffett	-1600	Alaska
Great Sitkin	2023	Alaska
Kasatochi	2008	Alaska
Koniuji	-1150	Alaska
Atka Volcanic Complex	2007	Alaska
Seguam	1993	Alaska
Amukta	1997	Alaska

Chagulak	NA	Alaska
Yunaska	1937	Alaska
Herbert	NA	Alaska
Carlisle	1828	Alaska
Cleveland	2020	Alaska
Tana	NA	Alaska
Uliaga	NA	Alaska
Kagamil	1929	Alaska
Vsevidof	1878	Alaska
Recheshnoi	NA	Alaska
Okmok	2008	Alaska
Bogoslof	2017	Alaska
Makushin	1995	Alaska
Akutan	1992	Alaska
Westdahl	1992	Alaska
Fisher	1830	Alaska



Shishaldin	2020	Alaska
Roundtop	-7600	Alaska
Amak	1796	Alaska
Frosty	NA	Alaska
Dutton	NA	Alaska
Emmons Lake	NA	Alaska
Pavlof	2022	Alaska
Pavlof Sister	NA	Alaska
Dana	-1890	Alaska
Stepovak Bay Group	NA	Alaska
Kupreanof	NA	Alaska
Veniaminof	2021	Alaska
Black Peak	-1900	Alaska
Aniakchak	1931	Alaska
Yantarni	-800	Alaska

Chiginagak	1998	Alaska
Kialagvik	NA	Alaska
Ugashik-Peulik	1814	Alaska
Ukinrek Maars	1977	Alaska
Unnamed	NA	Alaska
Martin	1953	Alaska
Mageik	-500	Alaska
Trident	1974	Alaska
Katmai	1912	Alaska
Novarupta	1912	Alaska
Griggs	-1790	Alaska
Snowy Mountain	1710	Alaska
Denison	NA	Alaska
Steller	NA	Alaska
Kukak	NA	Alaska
Kaguyak	-3850	Alaska

Fourpeaked	2006	Alaska
Douglas	NA	Alaska
Augustine	2006	Alaska
Iliamna	1876	Alaska
Redoubt	2009	Alaska
Spurr	1992	Alaska
Hayes	1200	Alaska
St. Paul Island	-1280	Alaska
Ingakslugwat Hills	NA	Alaska
St. Michael	NA	Alaska
Imuruk Lake	300	Alaska
Buzzard Creek	-1050	Alaska
Wrangell	1912	Alaska
Churchill	847	Alaska
Edgecumbe	-2080	Alaska

Duncan Canal	NA	Alaska
Tlevak Strait-Suemez Island	NA	Alaska
Behm Canal-Rudyerd Bay	NA	Alaska
Fort Selkirk	NA	Canada and Western USA
Alligator Lake	NA	Canada and Western USA
Atlin Volcanic Field	NA	Canada and Western USA
Tuya Volcanic Field	NA	Canada and Western USA
Heart Peaks	NA	Canada and Western USA
Level Mountain	NA	Canada and Western USA
Edziza	950	Canada and Western USA
Spectrum Range	NA	Canada and Western USA
Hoodoo Mountain	-7050	Canada and Western USA
Iskut-Unuk River Cones	1800	Canada and Western USA
Tseax River Cone	1690	Canada and Western USA
Crow Lagoon	NA	Canada and Western USA
Milbanke Sound Group	NA	Canada and Western USA

Nazko	-5220	Canada and Western USA
Wells Gray-Clearwater	1550	Canada and Western USA
Silverthorne	NA	Canada and Western USA
Bridge River Cones	NA	Canada and Western USA
Meager	-410	Canada and Western USA
Garibaldi Lake	NA	Canada and Western USA
Garibaldi	-8060	Canada and Western USA
Cayley Volcanic Field	NA	Canada and Western USA
Baker	1880	Canada and Western USA
Glacier Peak	1700	Canada and Western USA
Rainier	1450	Canada and Western USA
Adams	950	Canada and Western USA
St. Helens	2008	Canada and Western USA
West Crater	-5750	Canada and Western USA
Indian Heaven	-6250	Canada and Western USA
Hood	1866	Canada and Western USA

Jefferson	950	Canada and Western USA
Blue Lake Crater	680	Canada and Western USA
Sand Mountain Field	-950	Canada and Western USA
Belknap	480	Canada and Western USA
Three Sisters	439	Canada and Western USA
Bachelor	-5800	Canada and Western USA
Davis Lake	-2790	Canada and Western USA
Newberry	690	Canada and Western USA
Devils Garden	NA	Canada and Western USA
Cinnamon Butte	NA	Canada and Western USA
Crater Lake	-2850	Canada and Western USA
Diamond Craters	-5610	Canada and Western USA
Jordan Craters	-1250	Canada and Western USA
Shasta	1250	Canada and Western USA
Medicine Lake	1060	Canada and Western USA
Lassen Volcanic Center	1917	Canada and Western USA

Clear Lake	NA	Canada and Western USA
Mono Lake Volcanic Field	1790	Canada and Western USA
Mono-Inyo Craters	1380	Canada and Western USA
Mammoth Mountain	1260	Canada and Western USA
Ubehebe Craters	-150	Canada and Western USA
Salton Buttes	210	Canada and Western USA
Black Butte Crater Lava Field	-8400	Canada and Western USA
Craters of the Moon	-130	Canada and Western USA
Wapi Lava Field	-300	Canada and Western USA
Hell's Half Acre	-3250	Canada and Western USA
Soda Lakes	NA	Canada and Western USA
Markagunt Plateau	1050	Canada and Western USA
Black Rock Desert	1290	Canada and Western USA
Carrizozo	-3250	Canada and Western USA
Zuni-Bandera	-1170	Canada and Western USA
Red Hill	-9450	Canada and Western USA

Dotsero	-2200	Canada and Western USA
Uinkaret Field	1100	Canada and Western USA
San Francisco Volcanic Field	1075	Canada and Western USA
West Valley Segment	NA	Hawaii and Pacific Ocean
Endeavour Segment	-3490	Hawaii and Pacific Ocean
Cobb Segment	-1180	Hawaii and Pacific Ocean
CoAxial Segment	1993	Hawaii and Pacific Ocean
Axial Seamount	2015	Hawaii and Pacific Ocean
Cleft Segment	1986	Hawaii and Pacific Ocean
North Gorda Ridge Segment	1996	Hawaii and Pacific Ocean
Jackson Segment	NA	Hawaii and Pacific Ocean
Escanaba Segment	-2260	Hawaii and Pacific Ocean
East Blanco Depression	NA	Hawaii and Pacific Ocean
Kama'ehuakanaloa	1996	Hawaii and Pacific Ocean
Kilauea	2023	Hawaii and Pacific Ocean
Mauna Loa	2022	Hawaii and Pacific Ocean



Mauna Kea	-2460	Hawaii and Pacific Ocean
Hualalai	1801	Hawaii and Pacific Ocean
Haleakala	1750	Hawaii and Pacific Ocean
Teahitia	1985	Hawaii and Pacific Ocean
Rocard	1972	Hawaii and Pacific Ocean
Moua Pihaa	1970	Hawaii and Pacific Ocean
Mehetia	NA	Hawaii and Pacific Ocean
Adams Seamount	-50	Hawaii and Pacific Ocean
Macdonald	1989	Hawaii and Pacific Ocean
Northern EPR at 17°N	-50	Hawaii and Pacific Ocean
Northern EPR at 16°N	-50	Hawaii and Pacific Ocean
Northern EPR at 10.7°N	2003	Hawaii and Pacific Ocean
Northern EPR at 9.8°N	2006	Hawaii and Pacific Ocean
Galapagos Rift	1996	Hawaii and Pacific Ocean
Southern EPR at 8°S	1969	Hawaii and Pacific Ocean
Southern EPR-Segment K	1990	Hawaii and Pacific Ocean

Southern EPR-Segment J	1890	Hawaii and Pacific Ocean
Southern EPR-Segment I	1915	Hawaii and Pacific Ocean
Hollister Ridge	NA	Hawaii and Pacific Ocean
Udintsev Transform	NA	Hawaii and Pacific Ocean
Prieto, Cerro	NA	México and Central America
Pinacate	NA	México and Central America
San Luis, Isla	NA	México and Central America
Jaraguay Volcanic Field	NA	México and Central America
Coronado	NA	México and Central America
Guadalupe	NA	México and Central America
San Borja Volcanic Field	NA	México and Central America
Tortuga, Isla	NA	México and Central America
Comondu-La Purisima	NA	México and Central America
Barcena	1953	México and Central America
Socorro	1994	México and Central America

Durango Volcanic Field	NA	México and Central America
Isabel, Isla	NA	México and Central America
Sanganguey	NA	México and Central America
Ceboruco	1875	México and Central America
Mascota Volcanic Field	NA	México and Central America
Colima	2019	México and Central America
Michoacan-Guanajuato	1952	México and Central America
Zitacuaro-Valle de Bravo	-3050	México and Central America
Jocotitlan	1270	México and Central America
Toluca, Nevado de	-1350	México and Central America
Chichinautzin	399	México and Central America
Iztaccihuatl	NA	México and Central America
Popocatepetl	2023	México and Central America
Malinche, La	-1170	México and Central America
Serdan-Oriental	NA	México and Central America

Humeros, Los	-4470	México and Central America
Atlixcos, Los	NA	México and Central America
Naolinco Volcanic Field	-1200	México and Central America
Cofre de Perote	1150	México and Central America
Gloria, La	NA	México and Central America
Cumbres, Las	-3920	México and Central America
Orizaba, Pico de	1846	México and Central America
San Martin	1796	México and Central America
Chichon, El	1982	México and Central America
Tacana	1986	México and Central America
Tajumulco	NA	México and Central America
Santa Maria	2023	México and Central America
Almolonga	1818	México and Central America
Atitlan	1853	México and Central America
Tolimán	NA	México and Central America

Acatenango	1972	México and Central America
Fuego	2023	México and Central America
Agua	NA	México and Central America
Pacaya	2021	México and Central America
Cuilapa-Barbarena	NA	México and Central America
Tecuamburro	-960	México and Central America
Jumaytepeque	NA	México and Central America
Moyuta	NA	México and Central America
Flores	NA	México and Central America
Tahual	NA	México and Central America
Santiago, Cerro	NA	México and Central America
Suchitan	NA	México and Central America
Chingo	NA	México and Central America
Ixtepeque	NA	México and Central America
Ipala	NA	México and Central America
Chiquimula Volcanic Field	NA	México and Central America

San Diego	NA	México and Central America
Singuil, Cerro	NA	México and Central America
Apaneca Range	NA	México and Central America
Santa Ana	2005	México and Central America
Izalco	1966	México and Central America
Coatepeque Caldera	NA	México and Central America
San Salvador	1917	México and Central America
Cinotepeque, Cerro	NA	México and Central America
Guazapa	NA	México and Central America
Ilopango	1880	México and Central America
San Vicente	NA	México and Central America
Apastepeque Field	NA	México and Central America
Taburete	NA	México and Central America
Tecapa	NA	México and Central America
Usulután	NA	México and Central America

Tigre, El	NA	México and Central America
Chinameca	NA	México and Central America
San Miguel	2023	México and Central America
Aramuaca, Laguna	NA	México and Central America
Tigre, Isla del	NA	México and Central America
Zacate Grande, Isla	NA	México and Central America
Yojoa, Lago	-7638	México and Central America
Cosiguina	1859	México and Central America
San Cristobal	2022	México and Central America
Telica	2022	México and Central America
Rota	NA	México and Central America
Negro, Cerro	1999	México and Central America
Pilas, Las	1954	México and Central America
Momotombo	2016	México and Central America
Apoyeque	-50	México and Central America
Nejapa-Miraflores	1060	México and Central America

Masaya	2023	México and Central America
Granada	NA	México and Central America
Mombacho	NA	México and Central America
Zapatera	NA	México and Central America
Concepcion	2011	México and Central America
Esteli	NA	México and Central America
Ciguatepe, Cerro el	NA	México and Central America
Lajas, Las	NA	México and Central America
Orosi	NA	México and Central America
Rincon de la Vieja	2023	México and Central America
Miravalles	1946	México and Central America
Tenorio	NA	México and Central America
Arenal	2010	México and Central America
Platanar	NA	México and Central America
Poas	2022	México and Central America
Barva	-6050	México and Central America



Irazu	1977	México and Central America
Turrialba	2022	México and Central America
Baru	1550	México and Central America
Valle, El	NA	México and Central America
Romeral	-5390	South America
Bravo, Cerro	1720	South America
Ruiz, Nevado del	2023	South America
Santa Isabel	-850	South America
Tolima, Nevado del	1943	South America
Machin	1180	South America
Huila, Nevado del	2012	South America
Purace	2022	South America
Sotara	NA	South America
Dona Juana	1906	South America
Galeras	2014	South America
Azufra	-930	South America

Cumbal	1926	South America
Chiles-Cerro Negro	1936	South America
Soche	-6650	South America
Chachimbiro	-3740	South America
Cuicocha	650	South America
Imbabura	-5550	South America
Mojanda	NA	South America
Cayambe	1786	South America
Reventador	2023	South America
Pululahua	290	South America
Guagua Pichincha	2002	South America
Atacazo	-320	South America
Chacana	1773	South America
Antisana	1802	South America
Aliso	-2450	South America
Sumaco	1895	South America

Illiniza	NA	South America
Cotopaxi	2023	South America
Quilotoa	1280	South America
Chimborazo	550	South America
Tungurahua	2016	South America
Licto	NA	South America
Sangay	2023	South America
Fernandina	2020	South America
Ecuador	1150	South America
Wolf	2022	South America
Darwin	1813	South America
Alcedo	1993	South America
Negra, Sierra	2018	South America
Azul, Cerro	2008	South America
Pinta	1928	South America
Marchena	1991	South America

Genovesa	NA	South America
Santiago	1906	South America
Santa Cruz	NA	South America
San Cristobal	NA	South America
Quimsachata	-4450	South America
Auquihuato, Cerro	NA	South America
Sara Sara	NA	South America
Coropuna	NA	South America
Andahua-Orcopampa	1490	South America
Huambo	-700	South America
Sabancaya	2023	South America
Chachani, Nevado	NA	South America
Nicholson, Cerro	NA	South America
Misti, El	1985	South America
Ubinas	2019	South America
Huaynaputina	1600	South America

Ticsani	1800	South America
Tutupaca	1802	South America
Yucamane	-1320	South America
Casiri, Nevados	NA	South America
Tacora	NA	South America
Taapaca	-320	South America
Parinacota	290	South America
Guallatiri	1960	South America
Tambo Quemado	NA	South America
Isluga	1913	South America
Tata Sabaya	NA	South America
Jayu Khota, Laguna	NA	South America
Jatun Mundo Quri Warani	NA	South America
Irruputuncu	1995	South America
Olca-Paruma	NA	South America
Putana	1810	South America

Sairecabur	NA	South America
Licancabur	NA	South America
Guayaques	NA	South America
Purico Complex	NA	South America
Colachi	NA	South America
Acamarachi	NA	South America
Chiliques	NA	South America
Lascar	2023	South America
Cordon de Puntas Negras	NA	South America
Miniques	NA	South America
Tujle, Cerro	NA	South America
Caichinque	NA	South America
Tilocalar	NA	South America
Pular	NA	South America
Negrillar, La	NA	South America

Socompa	-5250	South America
Llullaillaco	1877	South America
Corrida de Cori Volcanic Field	NA	South America
Lastarria	NA	South America
Cordon del Azufre	NA	South America
Bayo Gorbea, Cerro	NA	South America
Nevada, Sierra	NA	South America
Falso Azufre	NA	South America
Incahuasi, Nevado de	NA	South America
Ojos del Salado, Nevados	750	South America
Solo, El	NA	South America
Tuzgle	NA	South America
Aracar	NA	South America
Unnamed	NA	South America
Antofagasta Volcanic Field	NA	South America
Condor, El	NA	South America

Peinado	NA	South America
Blanco, Cerro	-2300	South America
Tipas	NA	South America
Rapa Nui	NA	South America
Tupungatito	1987	South America
San Jose	1960	South America
Maipo	1912	South America
Palomo	NA	South America
Atuel, Caldera del	NA	South America
Risco Plateado	NA	South America
Tinguiririca	1917	South America
Planchon-Peteroa	2019	South America
Infiernillo	-6890	South America
Calabozos	NA	South America
Descabezado Grande	1933	South America
Azul, Cerro	1967	South America



Maule, Laguna del	-50	South America
San Pedro-Pellado	NA	South America
Longavi, Nevado de	-4890	South America
Blancas, Lomas	NA	South America
Resago, Volcan	NA	South America
Payun Matru	-5050	South America
Chillan, Nevados de	2022	South America
Tromen Volcanic Plateau	1822	South America
Antuco	1869	South America
Copahue	2021	South America
Callaqui	1980	South America
Tolhuaca	-4000	South America
Lonquimay	1990	South America
Blanca, Laguna	NA	South America
Llaima	2009	South America
Sollipulli	1240	South America

Caburgua-Huelemolle	-5050	South America
Villarrica	2023	South America
Quetrupillan	255	South America
Lanin	560	South America
Huanquihue Group	1750	South America
Mocho-Choshuenco	1937	South America
Carran-Los Venados	1979	South America
Puyehue-Cordon Caulle	2012	South America
Antillanca Volcanic Complex	-230	South America
Puntiagudo-Cordon Cenizos	1850	South America

# mutate()

- Often, the raw data isn't analyzable in its current form!
- You will need to transform columns using `mutate()`
- `mutate()` creates new columns from existing columns, **or** changes existing columns
  - **very, very useful for manipulating your data!**

# mutate()

- Uses similar syntax as summarise(): `name = function`

```
1 dataset %>%  
2   mutate(minutes = seconds / 60,  
3           hours = minutes / 60,  
4           days = hours / 24)
```

- You can use this to replace columns, not just add them:

```
1 # convert morning time to afternoon time  
2 dataset %>%  
3   mutate(hours = hours+12)
```

# Using mutate() to change variable types

- `mutate()` will be used by you for almost *everything*
  - For example - changing variable types:

```
1 # change a char column in a data frame to a factor column
2 people_factored <- people %>%
3   mutate(humor = as.factor(humor))
```

The dataset will look the same, but there is an important difference:

```
1 people
```

	name	age	humor
1	Alice	25	Bad
2	Spew	16	Good
3	Charlemagne	42	Good
4	Kay	18	Bad
5	Mackenzie	3	Terrible
6	Spirulina	16	Too Good
7	Jason	20	Good

```
1 class(people$humor)
```

```
[1] "character"
```

```
1 people_factored
```

	name	age	humor
1	Alice	25	Bad
2	Spew	16	Good
3	Charlemagne	42	Good
4	Kay	18	Bad
5	Mackenzie	3	Terrible
6	Spirulina	16	Too Good
7	Jason	20	Good

```
1 class(people_factored$humor)
```

```
[1] "factor"
```

- Open 14\_manipulate.Rmd
- Read Arranging and Filtering Rows



- Open 14\_manipulate.Rmd
- Read **Selecting and Mutating Columns**

# Joining Data Frames

# When we have multiple data frames...

- Very often, we will have multiple data frames that reflect different data sources.
- For example:
  1. A data frame with testing scores
  2. A data frame with language background information
  3. A data frame with demographic information
- Ideally, it is very easy to combine these data frames!
  - You need a column or set of columns that reflects **unique values** for each subject. This is your **key**.
    - Usually your **key** is your subject ID column!
  - Your **key** must have all unique values within a df. There cannot be two rows in a df with the same key!



# Combining data frames using dplyr

```
1 ?dplyr::`mutate-joins`
```

- This family of joins takes two data frames, **x** and **y**, and matches them by a **key**:
  - `dplyr::inner_join()` removes all rows that don't have matching values in **both** dfs
  - `dplyr::left_join()` removes rows that aren't in **x** (most common)
  - `dplyr::right_join()` removes rows that aren't in **y**
  - `dplyr::full_join()` does not remove any rows



# IF HAVE TIME...



- Open 14\_manipulate.Rmd
- Read **Recoding Variables**