

MINERALS ON STAMPS

Fred Haynes
March 24, 2021





MINERAL HERITAGE FOUR STAMP BLOCK

(Carrying all four stamps in this issue.)

The four-stamp block commemorating America's Mineral Heritage is a design first in U.S. stamps whereby a diamond shape is achieved by following the Postal Service's recommendation that this block of stamps be rotated 45 degrees so that the denominations appear horizontally. Romanticists will remember that placing stamps upside down is supposed to signify love. Now, perhaps, a new dimension in stamp placement has been added by the diamond motif—a tribute to the importance of natural resources and their conservation in our lives.

The set of four ten-cent stamps on this Cover commemorates this heritage and features designs of minerals selected not for their scarcity or monetary value, but for two other reasons. First, all four of them—Amethyst, Tourmaline, Rhodochrosite and Petrified Wood—are universally recognized in lapidary (the art of cutting gems) as being typically American.

Second, they are treasured by collectors because of their aesthetic qualities and particularly admired for their colors, which are reproduced faithfully on the stamps.

Amethyst, deep lavender in color, is cut and polished as a

semi-precious gem. Tourmaline, rose red, has optical and electrical instrument application. Coral-rose colored rhodochrosite contains manganese used in steelmaking and the chemical industry. Rainbow-hued petrified wood, predominately red and yellow, is valuable to geologists in studying the structure of trees as they existed in pre-historic times.

These minerals are found in nature in four scattered parts of our nation, ranging from the town of Due West, South Carolina (amethyst) to Arizona's Petrified Forest (petrified wood) to Colorado (rhodochrosite) and San Diego County, California (tourmaline).

Actual samples from the gems and minerals collection of the Smithsonian Institution were used as models by expert engravers of the Bureau of Engraving and Printing in capturing the colorful beauty of these four distinctly American minerals on the stamps, designed by Leonard F. Buckley.

This unique set of four stamps was first placed on sale at the 1974 National Gem and Mineral Show in Lincoln, Nebraska, with first day ceremonies at the State Fair grounds.



Scott # 1538-1541, June 13, 1974



Petrified Wood – Arizona Petrified Forest

Tourmaline- San Diego County, CA

Rhodochrosite – Sweet Home Mine, Colorado

Amethyst – Due West, SC

All are Smithsonian samples designed by Leonard Buckley. First Day cover issued in Lincoln, NB at the 1974 National Gem and Mineral Show.

The Postage Stamp Tourmaline



Tourmaline Queen
Mine,
San Diego, CA



Pen and ink
drawing of "The
Postage Stamp
Tourmaline" by
W. Wilson



From T. Praszker,
Minerals Magazine #5, 2012

One of the few specimens from a famous 1913 pocket that was not processed for gems. The 7 centimeter tourmaline offset by two equally attractive terminated quartz crystals found a permanent location on a US postage stamp and could be had for 10 cents in 1973.



Philagems International

Gems, Minerals and Jewelry Study Unit

American Topical Association

A quarterly bulletin featuring articles, reports and checklists covering all phases of gems, minerals and jewelry on stamps.

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GMJSU Checklist (sortable)

2572	USA	1538	1974 Jun 13	Silicified wood	10c	MS
2573	USA	1539	1974 Jun 13	Tourmaline	10c	MS
2574	USA	1540	1974 Jun 13	Amethyst	10c	MS
2575	USA	1541	1974 Jun 13	Rhodochrosite	10c	MS
2576	USA	2700	1992 Sep 17	Azurite, (copper)	29c	MS
2577	USA	2701	1992 Sep 17	Copper	29c	MS
2578	USA	2702	1992 Sep 17	Variscite	29c	MS
2579	USA	2703	1992 Sep 17	Wulfenite	29c	MS
2580	USA	3235	1998 Aug 21	Klondike Gold Rush	32c	MN
2581	USA	3316	1999 Jun 18	California Gold Rush,	33c	MN

The GMJSU checklist includes over 2700 entries. Just over 1500 are identified as MS (mineral specimens) or GS (gemstones). The rest include mining stamps, some geology, and a few fossils, jewelry/ artifacts, and other related topics. This list seems fairly complete for minerals, but is not inclusive for other items. UNFORTUNATELY THE LAST UPDATE WAS IN 2011 !!

$PbMoO_4$ is LOVE

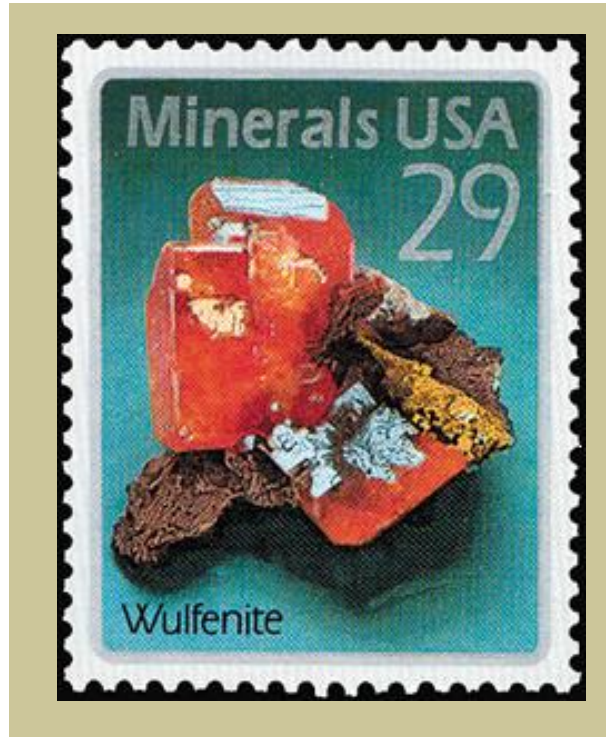


Red Cloud Mine



PbMoO₄ is LOVE

Four mineral stamps designed by Leonard Buckley from specimens in the Baird Auditorium of the Smithsonian Museum of Natural History. Printed by offset/intaglio process and issued in panes of 40. Issued Sept. 17, 1992 for domestic postage.



THE ACTUAL SPECIMEN



Americans mined wulfenite and silver at the Red Cloud Mine in Arizona from the 1860's until 1890, and then sporadically until 1941. Red Cloud wulfenites are among the best in the world because of their deep orange-red colors and their unusual size and perfection.

PbMoO₄ is LOVE



CHAD	788B j	1998 Nov 12	Wulfenite	500f
CHAD	839	2004 Jan 15	Wulfenite	150f
MOROCCO	649	1987 Oct	Wulfenite	2d
NAMIBIA	687	1991 Jan 2	Wulfenite	1.50r
SLOVENIA	286	1997 Mar 27	Wulfenite	80t
SOUTH-WEST AFRICA	637	1989 Nov 16	Wulfenite	45c
UNITED STATES	2703	1992 Sep 17	Wulfenite	29c
YUGOSLAVIA	1501	1980 Sep 10	Wulfenite	13d
CHAD	934c	2001 Dec 27	Wulfenite (also imperf.)	500f
MALAGASY	1350c	1998 Feb 25	Wulfenite (also imperf.)	7500fr
COMORO ISLANDS	933	1998	Wulfenite s/s	1125fr
GUINEA BISSAU		2008	Wulfenite, sibnite, acanthite, metatorgernite	3000



PbMoO₄ is LOVE

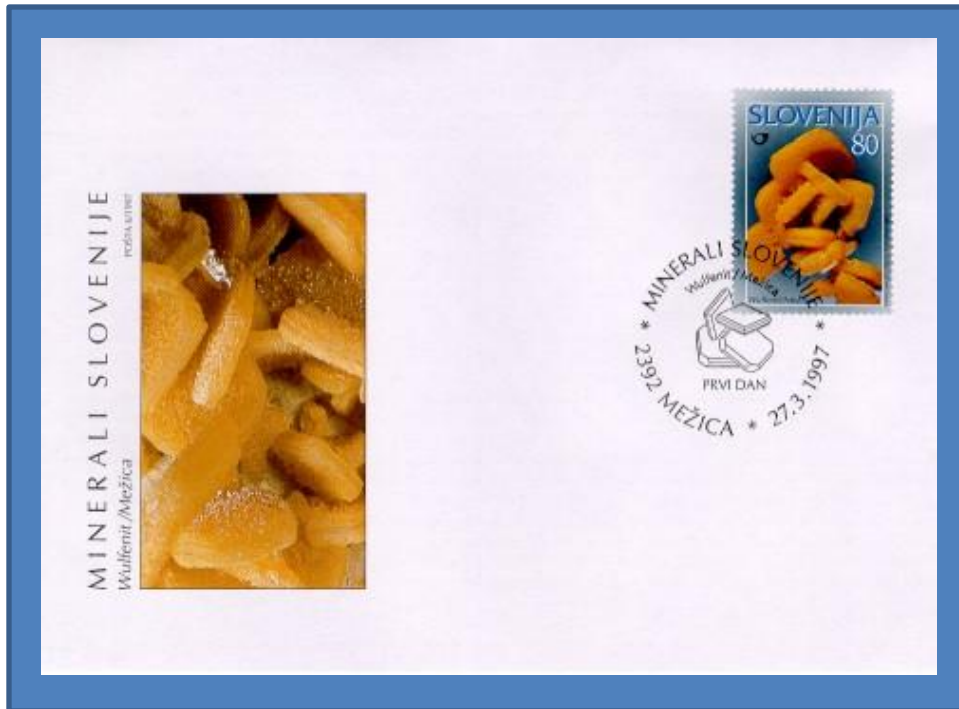
**Mezica in Slovenia – World-Famous Wulfenite Locality
by Dalibor Valebil – Nat’l Mus., Prague, Czech Republic**

At the lead and zinc deposit between Mezica and Crna in Slovenia lead was mined from the 17th century until 1994. Since the 19th century zinc was processed in addition to lead. As a secondary ore, wulfenite was mined for its molybdenum.

Extracted from Mineral Magazine 2005, v. 13 #2 pg. 105-112



**Yugoslavia Scott
1501, part of
set of 4, issued
Sept. 10, 1980**



FDC of Scott #286, March 27, 1997



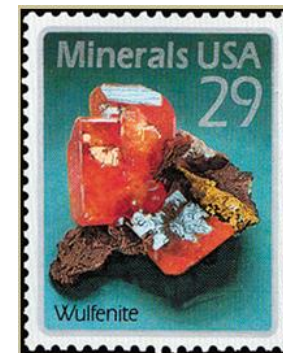
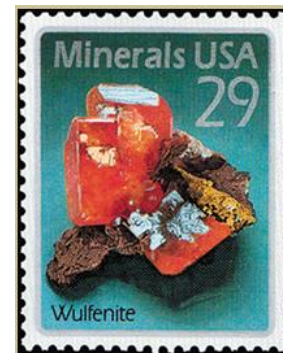
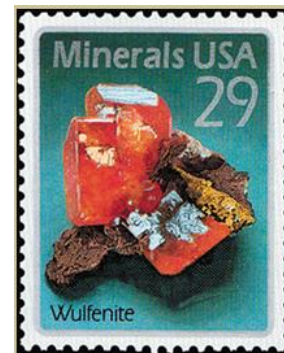
Yugoslavia 1918-2003

PbMoO₄ is LOVE



Red Cloud Mine
collected March, 1981

Geronimo Mine
collected March, 1981



Stamp Error



BOLTWOODITE



BOLTWOODITE



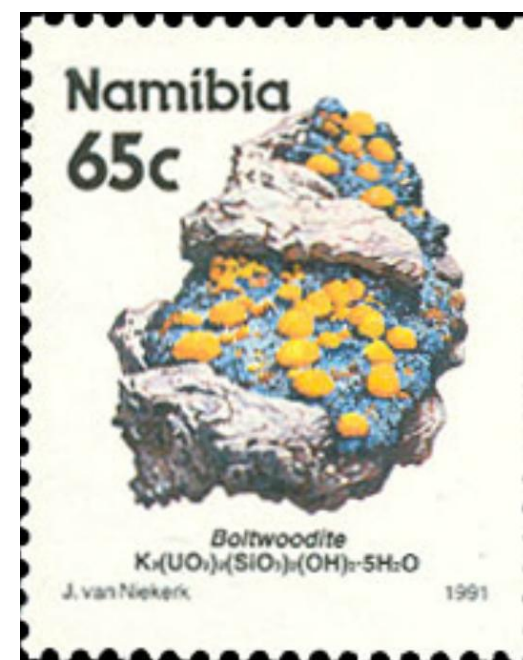
Scott #631, issued 11/16/89

$K(H_3O)(UO_2)(SiO_4)$
Incorrect formula



Scott #631A, issued 10/25/90

Corrected formula $K_2(UO_2)_2(SiO_3)_2(OH)_2 \cdot 5H_2O$



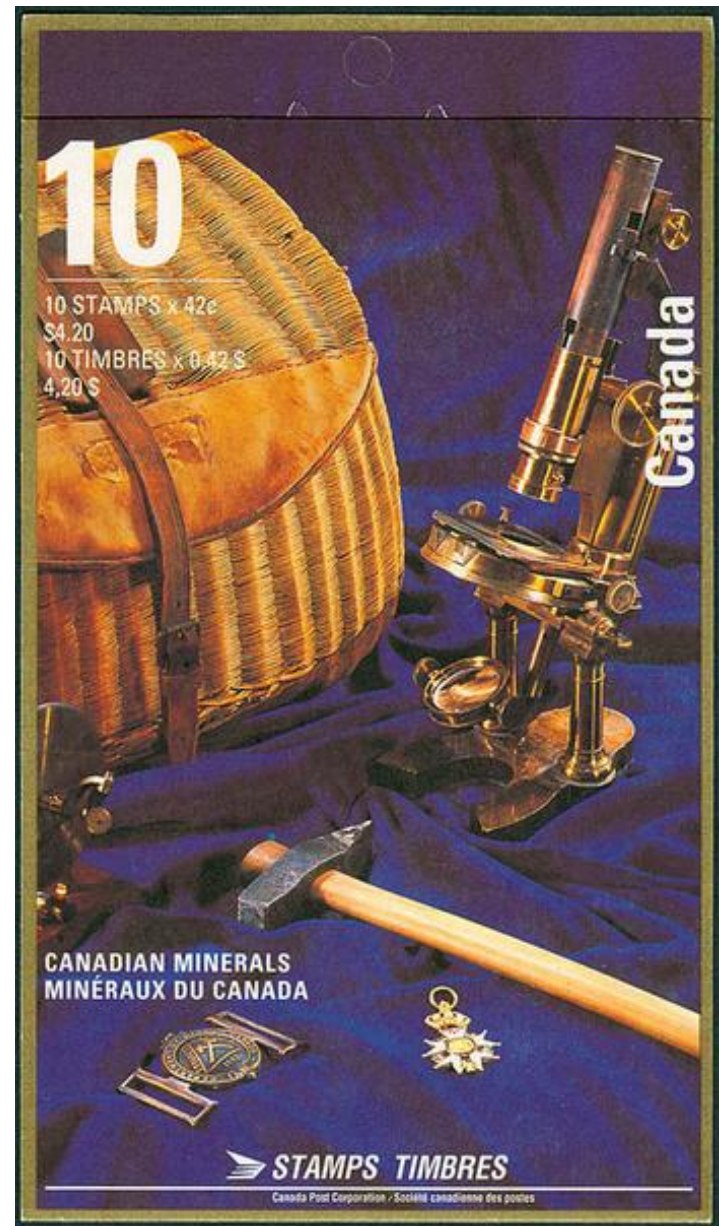
Scott #685, issued 1/2/92

CANADA



Scott #582, Aug. 2, 1972

From a set of 4 commemorating national science conferences, this stamp depicts a normal fault in layered and folded rock, while commemorating the 24th International Geological Congress, held in Montreal



**Scott #1436-1440,
Sept. 21, 1992**

CANADA

Scott #1436-1440, Sept. 21, 1992



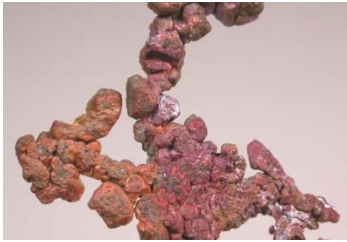
Native Copper

Galena

Native Gold

Sodalite
(polished)

Garnet
(grossular)



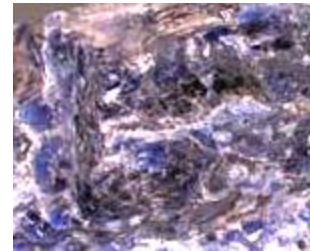
Colonial Copper
Mine, Cap D'Or,
Nova Scotia



Flamboro Quarry,
Wentworth, Ontario



Gold, Klondyke
District, Yukon



Princess Mine,
Hastings Co.,
Ontario



Jeffrey Mine,
Asbestos, Quebec



KENYA



Gypsum



Trona



Kyanite



Amazonite



Galena



Petrified Wood



Fluorite



Amethyst



Agate



Tourmaline



Beryl (Aquamarine)



Rhodolite Garnet



Corundum (Sapphire)



Corundum (Ruby)



Grossular Garnet

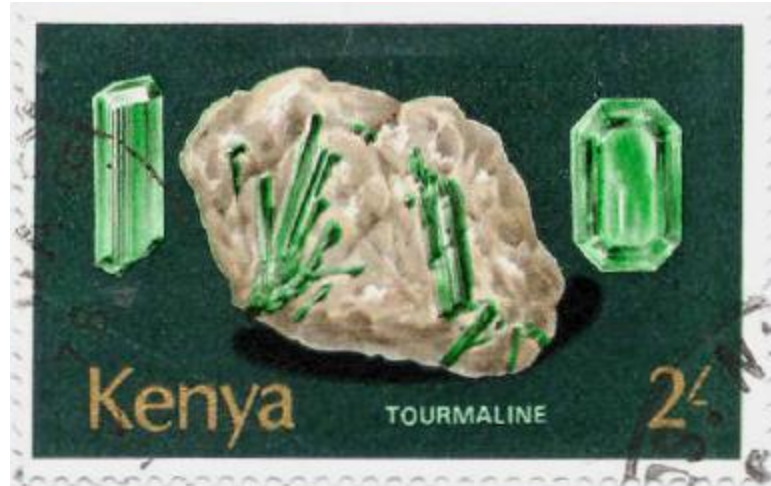




KENYA



Kenya – Scott # 98-112
December, 1977



Tourmaline (var. Elbaite)



PERU



Galena – PbS



Scheelite – $CaWO_4$



Fossil Bivalve

July 1999
Scott 1230-32

July 2002
Scott 1339-41



Chalcopyrite – $CuFeS_2$



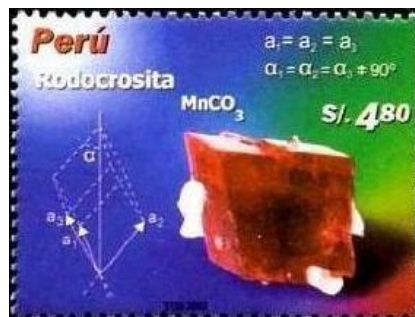
Sphalerite – ZnS



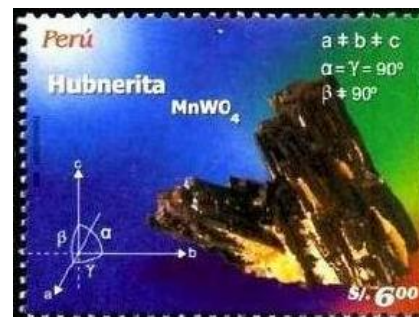
Pyrargyrite – $AgSbS_3$



Orpiment – As_2S_3



Rhodochrosite – $MnCO_3$



Huebnerite – $MnWO_4$

Jan. 2004
Scott 1372-73

April 2006
Scott 1514

SPAIN

Scott #2763a-d
Feb., 1994



Cinnabar – HgS

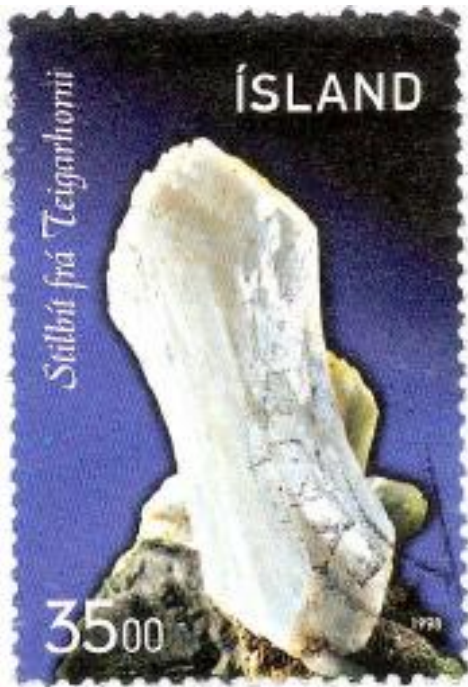
Sphalerite – ZnS

Pyrite - FeS₂

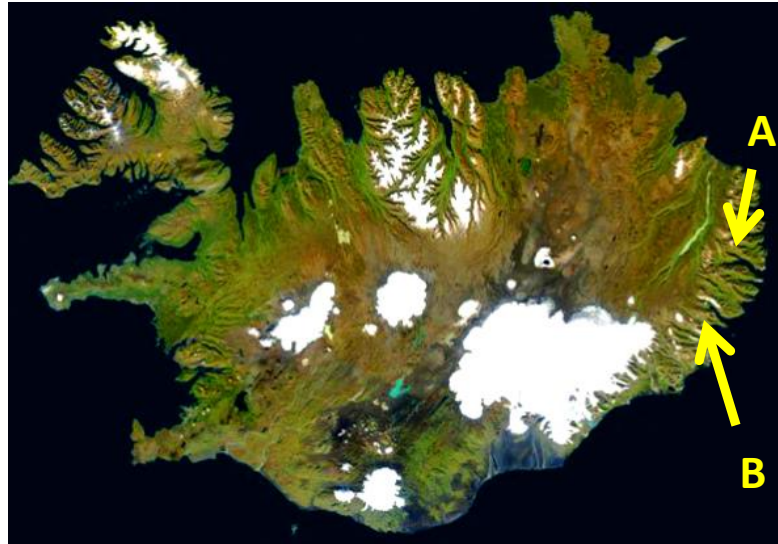
Galena - PbS

The center labels with the 4 stamps depicts the main floor of the Museo Geominero (Geomineral Museum) in Madrid. The museum is the home for over 8000 mineral specimens in 250 glass cabinets.

ICELAND



Scott #862, 1998
Stilbite from Teigarhorni (B)

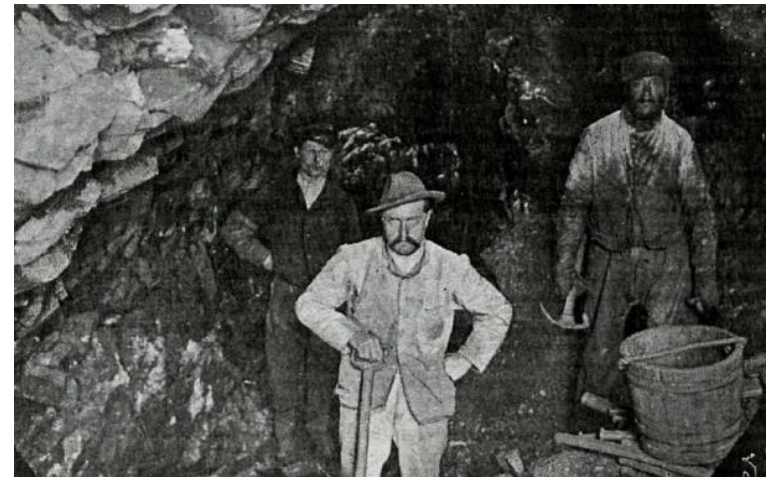


Scott #885, 1999
Calcite from Helgustodum (A)

Some interesting notes about Teigarhorni

- Zeolites from here considered world's best
- Now a Historic Preservation Site
- Highest recorded temperature in Iceland was in Teigarhorni on June 22, 1939

30.5°C, 86.9°F



Miner's in Helgustodum silver mine, 19th century

HONG KONG

Scott #994-997
Sept., 2002



The rock outcrop portions of these stamps were applied with a thermographic process, producing a shiny raised surface

**Siltstone
(Ping Chau)**

**Conglomerate
(Port Island)**

**Tuff
(Po Pin Chau)**

**Granite
(Lamma Island)**

FLUORITE



Germany #1106, 1969



Fluorite from Penfield Quarry



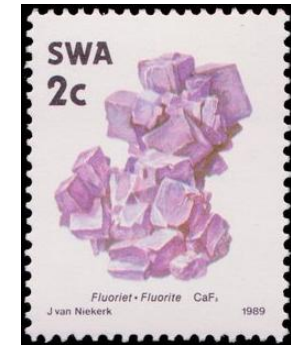
France, #2020, 1986



Thailand #1348, 1990



Fluorite on dolomite, Walworth Quarry



South-West Africa, #627, 1989



Algeria #713, 1983

MALACHITE



Zaire #1102, 1983
Dem. Rep. of Congo



Uganda #649, 1988

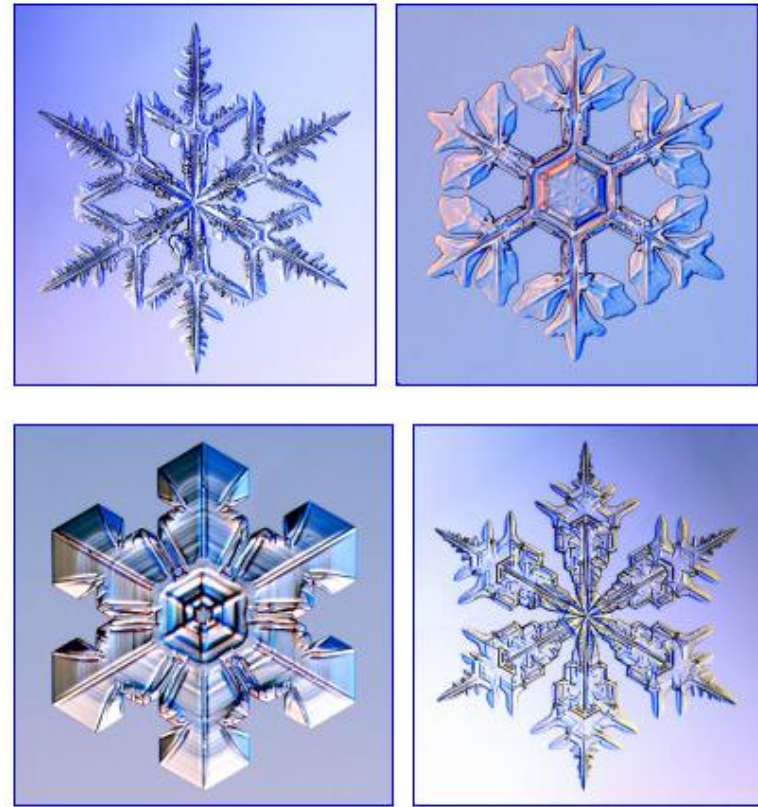


Morocco, #648, 1987





October 6, 2006 in New York, NY

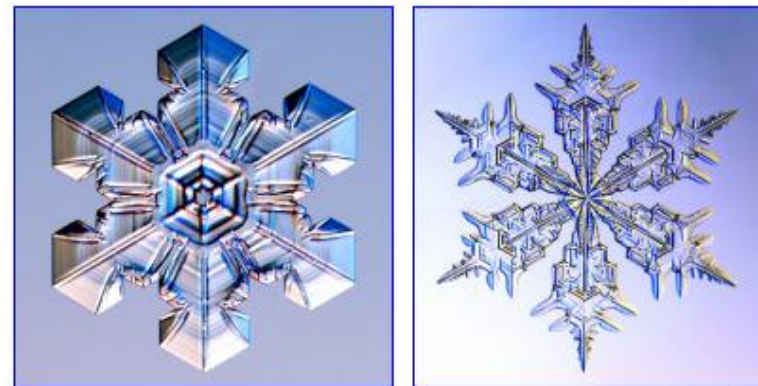
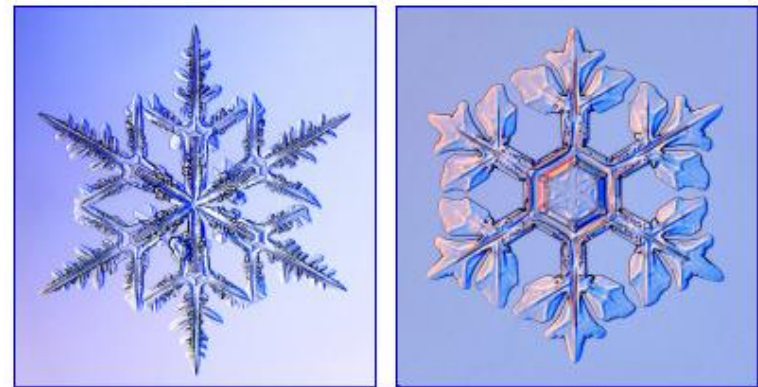


Original photos

- Physicist Kenneth Libbrecht of Pasadena, CA photographed snowflakes inside a temperature regulated enclosure with a digital camera attached to a high resolution microscope.
- The crystals appear blue because Libbrecht illuminated them with a bluish white light. The patterns are stellar dendrites, which form branching arms and hexagonally sectored plates.
- Richard Sheath cut the flakes out digitally in designing the stamps for the post office.
- The upper right snowflake was memorialized on film in Fairbanks, Alaska, the lower left in Houghton, Michigan and the other two in northern Ontario.



October 6, 2006 in New York, NY



Original photos

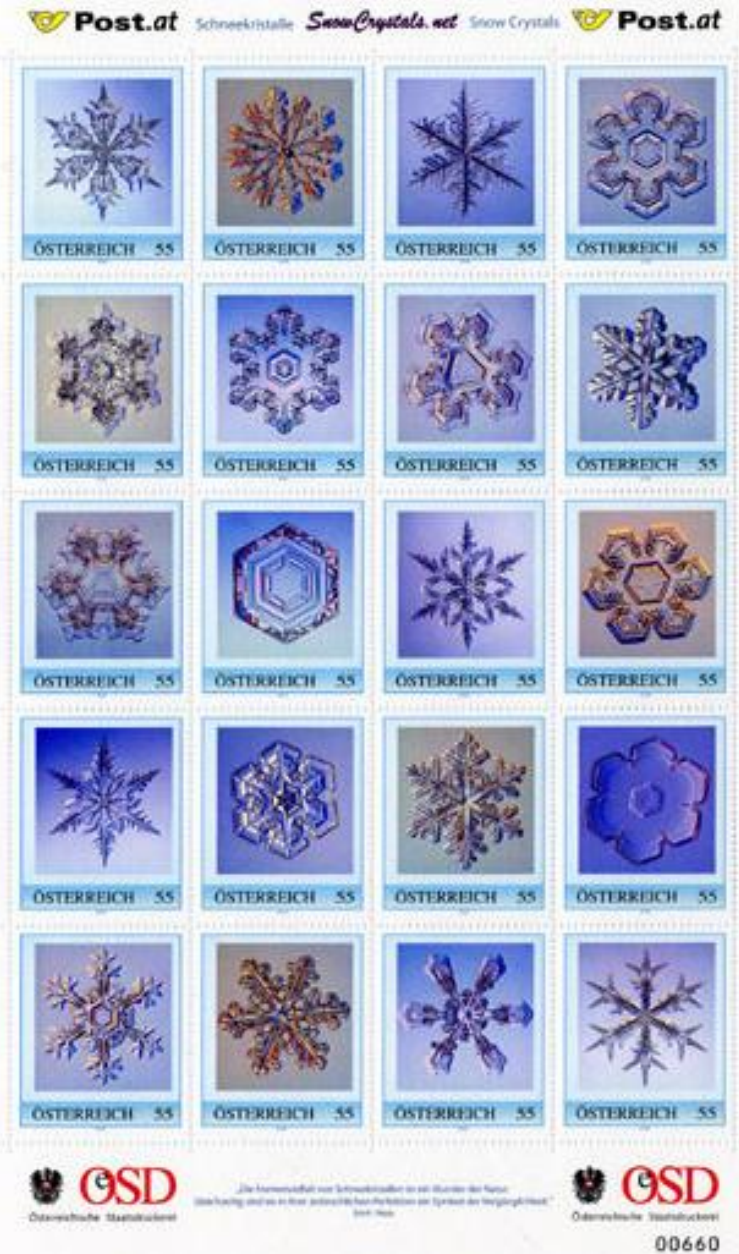


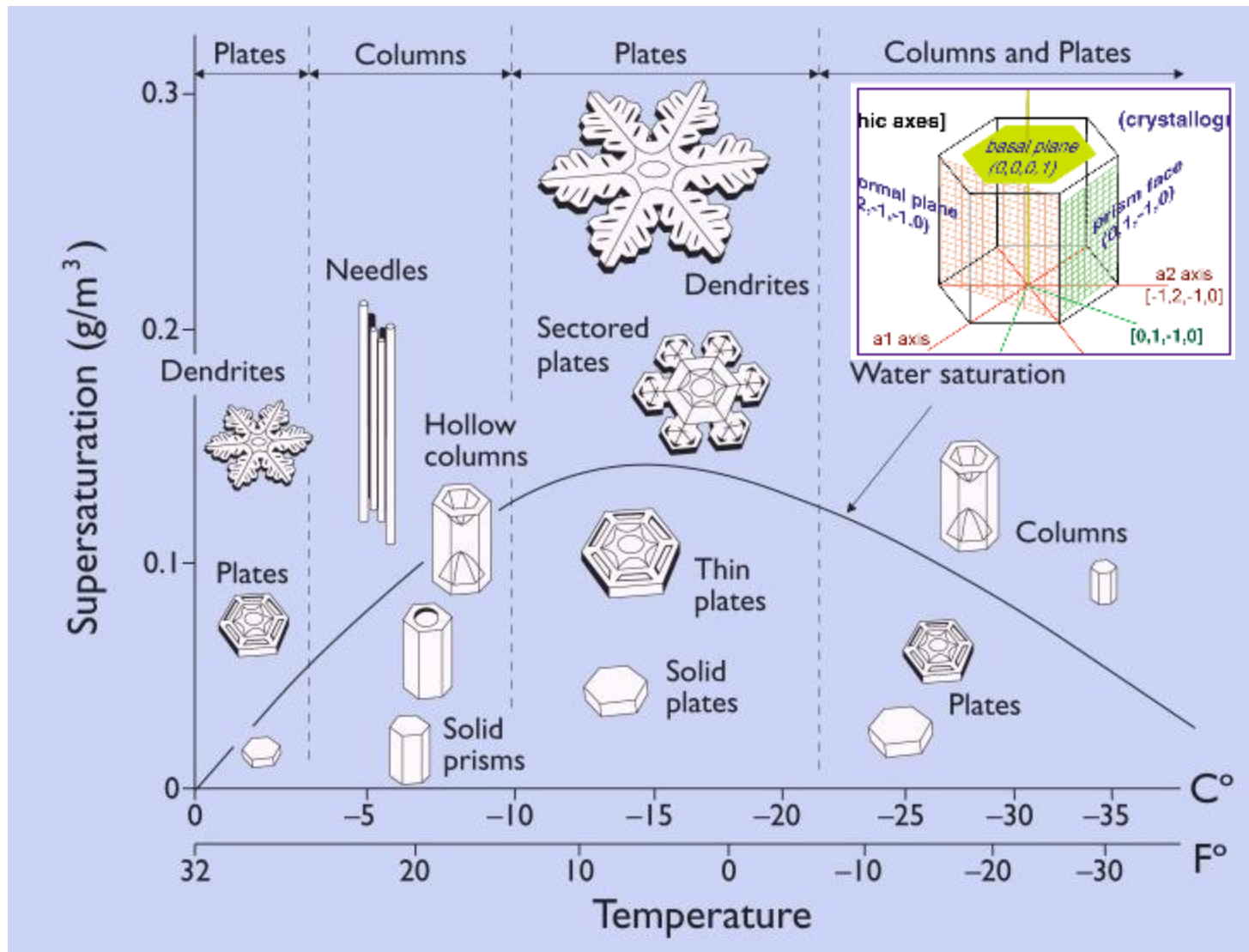
October 1, 2013, presorted postage, sold in rolls of 10,000 coiled stamps



Libbrecht went to Kiruna in northern Sweden to photograph Swedish snowflakes for a series of five 12 kroner stamps issued on November 18, 2010

Not to be outdone, Austria issued stamps depicting 20 of Libbrecht's creations.





Snowflakes form when water vapor condenses directly into ice.

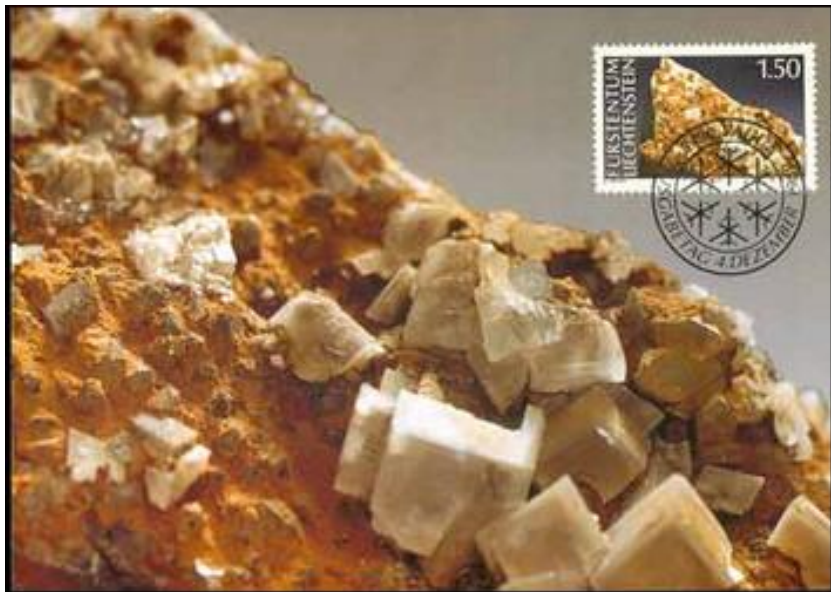
Maxicards - Liechtenstein



Scott #921 (Dec. 4, 1989)
Scepter quartz



Scott #922 (Dec. 4, 1989)
Pyrite nodule



Scott #923 (Dec. 4, 1989)
Calcite rhombs

Maxicards – South Africa

Scott #630-633, 1984

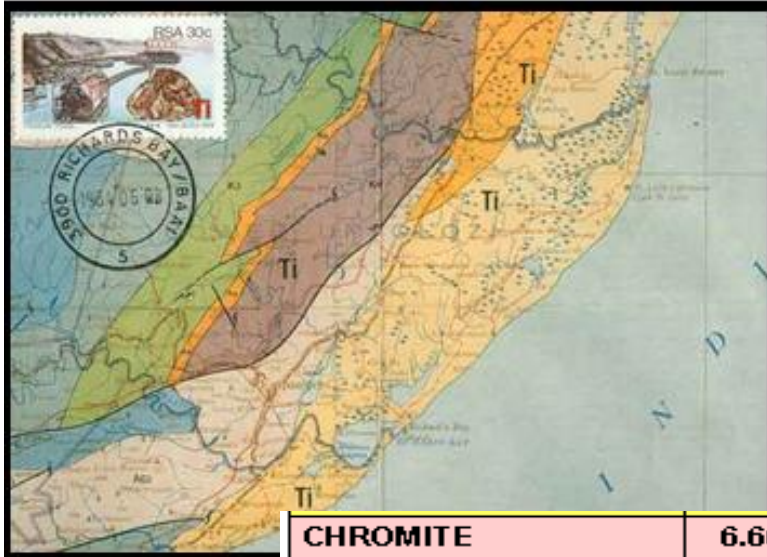
Cr



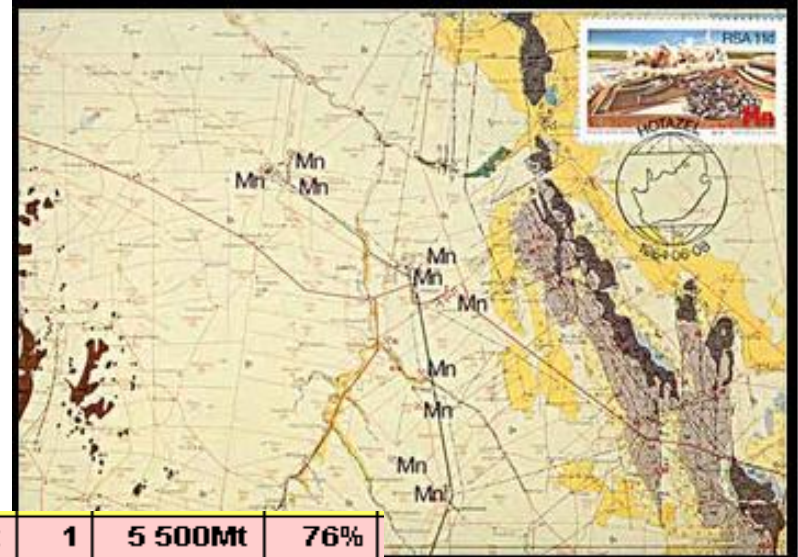
V



Ti



Mn



CHROMITE	6.662Mt	1	5 500Mt	76%
MANGANESE	3.635Mt	1	4 000Mt	80%
VANADIUM	18 000t	1	12.0Mt	45%
TITANIUM	1.06Mt	2	146Mt	20%

Production through 2000 Rank Reserves % in SA

terres australes et antarctiques françaises

Territory of the French Southern and Antarctic Lands



analcime



mordenite



“mesotype”



aragonite



rutile



magnetite



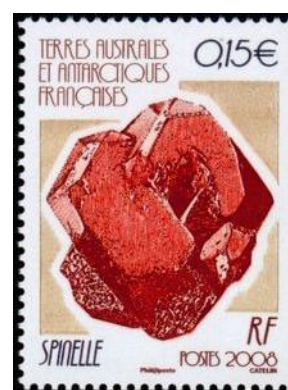
garnet (*almandine*)



ilmenite



epidote



spinel



sphene (*titanite*)

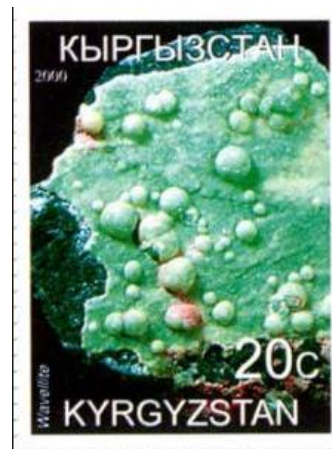
Unusual Minerals on Stamps



Columbite-Tantalite
 $(\text{Fe}, \text{Mn})\text{Nb}_2\text{O}_6$
 Scott #599 (1988)



Wolframite
 $(\text{Fe}, \text{Mn})\text{WO}_4$
 Scott #1106 (1971)



Wavellite
 $\text{Al}_3(\text{PO}_4)_2(\text{OH})_3 \cdot 5\text{H}_2\text{O}$
not recognized



Collected by Fred Haynes
 National Limestone Quarry,
 Mount Pleasant Mills, PA



Ethyrite
 $\text{Co}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$
 Scott #1105 (1969)



Unusual Minerals on Stamps



Cordierite



Scott #194 (1994)



Scolecite



Scott #863 (1998)



Crocoite



not recognized



Dioptase



Scott #679 (1991)



Gems on Stamps

Emerald

Ruby



Sapphire

Peridot

Blue Sapphire
Star Sapphire

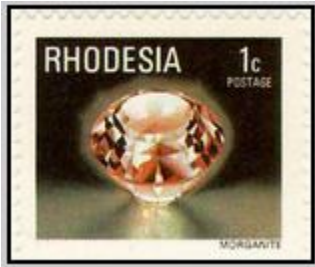
Cat's Eye
Ruby

<p>Beryl - Emerald $\text{Al}_2\text{Be}_3(\text{Si}_6\text{O}_{18})$</p>	<p>Topaz $\text{Al}_2\text{SiO}_4(\text{F},\text{OH})_2$</p>	<p>Beryl - Aquamarine $\text{Al}_2\text{Be}_3(\text{Si}_6\text{O}_{18})$</p>

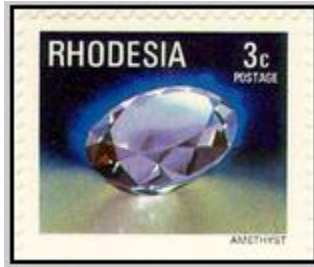
<p>Tourmaline $\text{Na}(\text{Li},\text{Al})_3(\text{Al})_6$ $[(\text{OH})_4/(\text{BO}_3)_3/\text{Si}_6\text{O}_{18}]$</p>	<p>Quartz - Amethyst SiO_2</p>

GEMS from Rhodesia - Zimbabwe

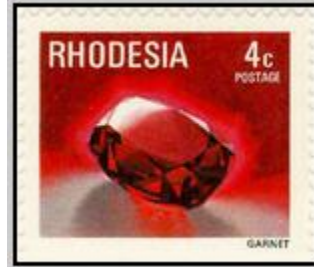
Rhodesia Scott #393-397, Aug. 1978



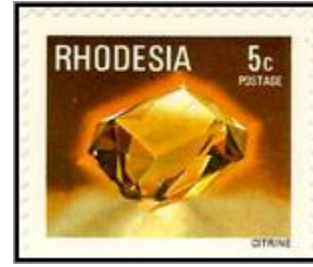
Beryl
Morganite



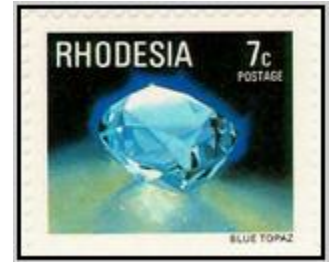
Quartz
Amethyst



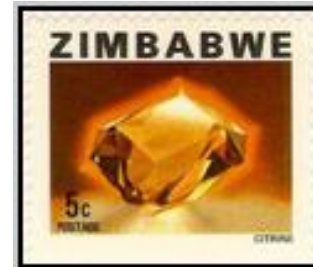
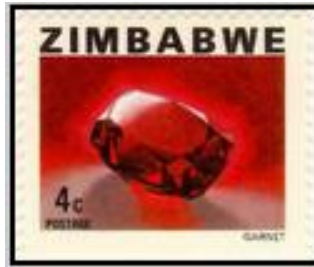
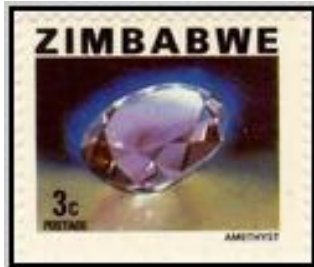
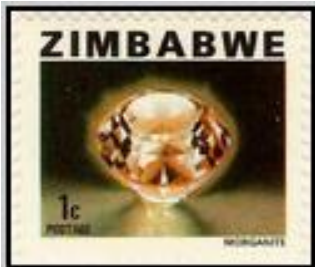
Garnet
Pyrope



Quartz
Citrine



Topaz
Blue

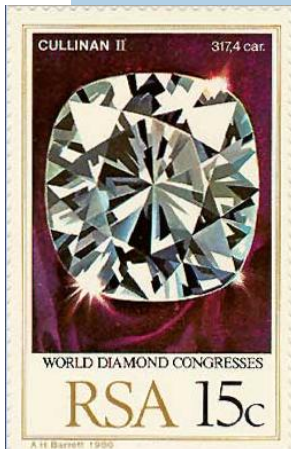
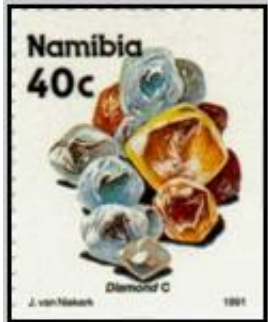


Zimbabwe Scott #414-418, April, 1980

In April of 1980 Rhodesia finally achieved de jure sovereignty from the United Kingdom and was renamed Zimbabwe. From 1965-1980 the landlocked country in southern Africa was an unrecognized state after unilaterally declaring itself free of the British Empire.

As a result of the 1980 independence, this set of gem stamps was simply re-issued under the new name for the country.

Southern Rhodesia to Rhodesia to Zimbabwe

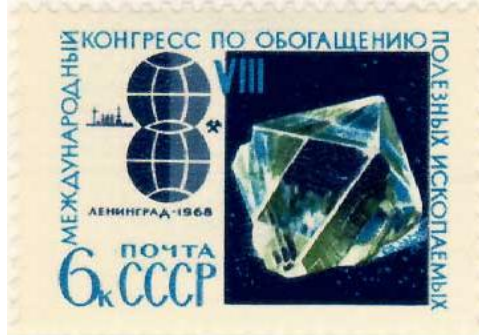


Swaziland/Eswatini in 2018

Diamonds and Diamond Mining



South-west Africa



Russia



Zimbabwe



Tanzania



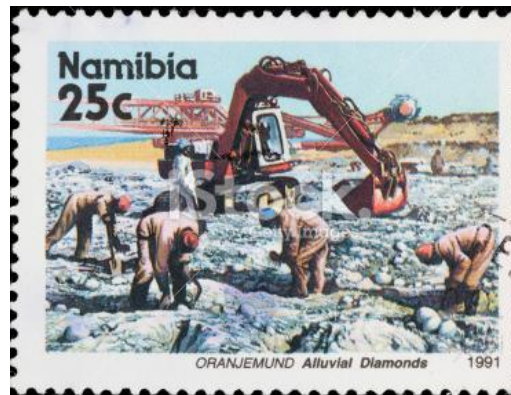
Togo



Thailand



Tanzania

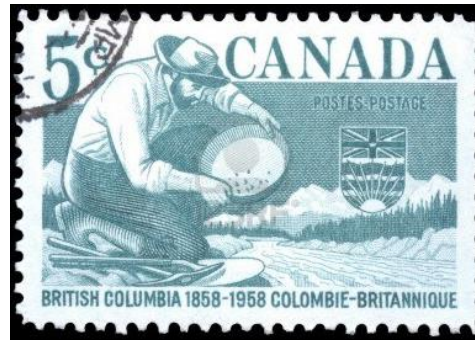


Namibia

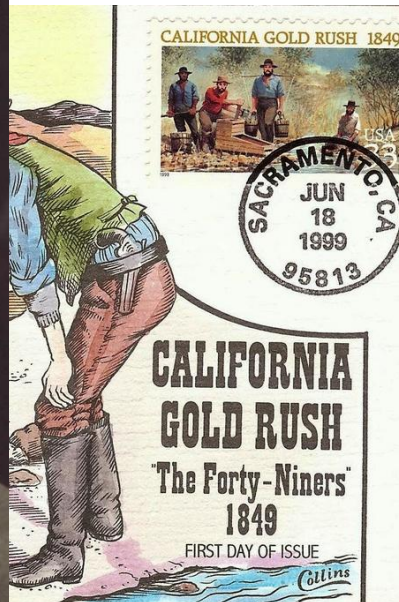
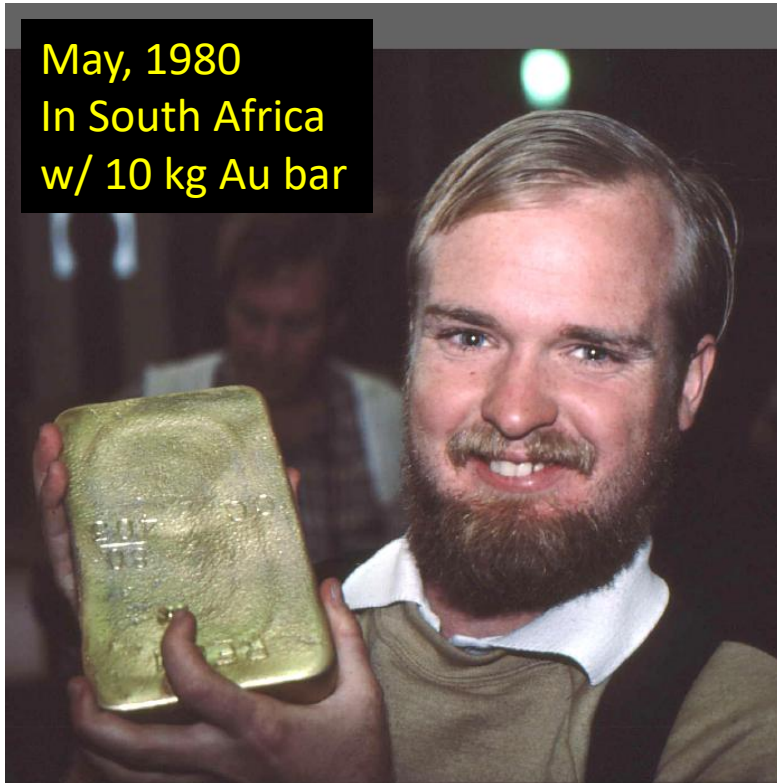


Botswana

GOLD



May, 1980
In South Africa
w/ 10 kg Au bar





Thank you