MINERALS ON STAMPS

Fred Haynes
November 14, 2013
Members receive an Excel checklist:

The GMJSU checklist includes over 2700 entries. Just over 1500 are identified and 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.
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, predominantly red and yellow, is valuable to geologists in studying the structure of trees as they existed in prehistoric 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.
$\text{PbMoO}_4$ is LOVE

Red Cloud Mine
PbMoO$_4$ is LOVE


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.
PbMoO$_4$ is LOVE

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

FDC of Scott #286, March 27, 1997

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

Yugoslavia 1918-2003
PbMoO$_4$ is LOVE
Stamp Error

BOLTWOODITE

Scott #631, issued 11/16/89
K(H₃O)(UO₂)(SiO₄)
Incorrect formula

Scott #631A, issued 10/25/90

Corrected formula K₂(UO₂)₂(SiO₃)₂(OH)₂·5H₂O

Scott #685, issued 1/2/92
BOLTWOODITE
From a set of 4 commemorating national science conferences, this stamp depicts a normal fault in layered and folder rock, while commemorating the 24th International Geological Congress, held in Montreal.
Kenya – Scott # 98-112
December, 1977

Tourmaline (var. Elbaite)
PERU

July 1999
Scott 1230-32

Galena – PbS

Scheelite – CaWO₄

Fossil – ???

July 2002
Scott 1339-41

Chalcopyrite – CuFeS₂

Sphalerite – ZnS

Pyrargyrite – AgSbS₃

Jan. 2004
Scott 1372-73

Orpiment – As₂S₃

Rhodochrosite – MnCO₃

Huebnerite – MnWO₄

April 2006
Scott 1514
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.

- **Cinnabar** – HgS
- **Sphalerite** – ZnS
- **Pyrite** – FeS2
- **Galena** – PbS
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
The rock outcrop portions of these stamps were applied with a thermographic process, producing a shiny raised surface.

<table>
<thead>
<tr>
<th>Siltstone</th>
<th>Conglomerate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Ping Chau)</td>
<td>(Port Island)</td>
</tr>
<tr>
<td>Tuff</td>
<td>Granite</td>
</tr>
<tr>
<td>(Po Pin Chau)</td>
<td>(Lamma Island)</td>
</tr>
</tbody>
</table>
FLUORITE

Fluorite from Penfield Quarry

Fluorite on dolomite, Walworth Quarry

Germany #1106, 1969

France, #2020, 1986

South-West Africa, #627, 1989

Thailand #1348, 1990

Algeria #713, 1983
MALACHITE

Zaire #1102, 1983
Dem. Rep. of Congo

Cu$_2$CO$_3$(OH)$_2$

Uganda #649, 1988
Morocco, #648, 1987
MALACHITE

Zaire #1102, 1983
Dem. Rep. of Congo

Uganda #649, 1988

Malachite and Gems of Africa, Rochester, NY

Musonoi Mine, Kolwezi, Katanga, Dem. Rep. of Congo

Morocco, #648, 1987
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.
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. Patterns are stellar dendrites, which form brancing arms and hexagonal sectors. 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

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

<table>
<thead>
<tr>
<th>Resource</th>
<th>Production (Mt)</th>
<th>Rank</th>
<th>Reserves (Mt)</th>
<th>% in SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromite</td>
<td>6.662</td>
<td>1</td>
<td>5,500</td>
<td>76%</td>
</tr>
<tr>
<td>Manganese</td>
<td>3.635</td>
<td>1</td>
<td>4,000</td>
<td>80%</td>
</tr>
<tr>
<td>Vanadium</td>
<td>18,000</td>
<td>1</td>
<td>12.0</td>
<td>45%</td>
</tr>
<tr>
<td>Titanium</td>
<td>1.06</td>
<td>2</td>
<td>146</td>
<td>20%</td>
</tr>
</tbody>
</table>

Production through 2000

Scott #630-633, 1984
Unusual Minerals on Stamps

Columbite-Tantalite
(Fe,Mn)Nb₂O₆
Scott #599 (1988)

Wolframite
(Fe,Mn)WO₄
Scott #1106 (1971)

Wavellite
Al₃(PO₄)₂(OH)₃·5H₂O
not recognized

Ethyrite
Co₃(AsO₄)₂·8H₂O
Scott #1105 (1969)

Collected by Fred Haynes
National Limestone Quarry,
Mount Pleasant Mills, PA
Unusual Minerals on Stamps

Cordierite
\((\text{Fe}, \text{Mg})_2 \text{Al}_3 \text{Si}_5 \text{AlO}_{18}\)
Scott #194 (1994)

Scolecite
\(\text{CaAl}_2 \text{Si}_3 \text{O}_{10} \cdot 3\text{H}_2\text{O}\)
Scott #863 (1998)

Crocoite
\(\text{PbCrO}_4\)
not recognized

Dioptase
\(\text{CuSiO}_3 \cdot \text{H}_2\text{O}\)
Scott #679 (1991)
Thank you