



MNCA Website [dcmicrominerals.org](http://dcmicrominerals.org)  
**The Mineral Mite**



Vol. 48 – No. 10

Washington D.C. – A Journal for Micromineralogists December 2015

**December 16 Time: 6:30 p.m. – 10 p.m.**

**Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22206**

**Merry Christmas Happy Hanukah**  
**Holiday Party**

By David Fryauff, Vice President

The Micromineralogists of the National Capital Area and the Northern Virginia Mineral Club are jointly hosting this year's holiday party at the Long Branch Nature Center.



The NVMC will pay for barbeque from Red Hot & Blue. The MNCA club will provide drinks. We are asking club members, on a voluntary basis, to provide appetizers and desserts. If your last name begins with A–L, please bring an appetizer; if your last name begins with M–Z, please bring a dessert. In the holiday spirit, we are asking club members, on a voluntary basis, to bring a wrapped gift marked Micromount.

**Photo of the Month**



**Brandtite** crystals with pink rhodochrosite. Sterling Mine, Ogdensburg, Sussex Co., New Jersey  
*Pete Chin's photomicrograph*

**President's Message:**

By: Dave MacLean

Thank you all who demonstrated the wonders of micro minerals seen through a loupe and microscope to adults and children at the NVMC show 21-22 November.



We will celebrate good food and fellowship together with NVMC Wednesday 16 December at the long Branch Nature Center, Arlington. We will elect our 2016 officers then.

We have an exciting year ahead. Dr. Lance Kearns invited us to an identify day at JMU on Saturday 13 February. He asked us to bring our surplus thumbnail and larger minerals for his sale table to help support the Geology department. Lance will retire in 2016, so let us wish him and Cindy well.

I believe that the Gem Lapidary Mineral society of Montgomery County GLMSMC will invite us to demo at their show Saturday-Sunday 19-20 March at the Montgomery County Fairgrounds in Rockville.

Our own Atlantic Micromounters' Conference is scheduled for Friday-Saturday, 23-24 April at the SpringHill Marriott in Alexandria. We will need attractive mounted and unmounted microminerals for the auction. Please bring them to our January-February meetings or to JMU on 13 February.

As we celebrate Christmas, Hanukah, and New Year's let us remember and act all year long on the needs of the left over, left behind, and left out persons who are refugees, homeless, hungry, sick, lonely, and despairing.

**Previous Meeting Minutes: 11/18/15**

By: Dave MacLean, acting Secretary  
for George Reimherr



The President called the meeting to order at 1940 Wednesday 18 November 2015 at the Long Branch Nature Center, Arlington, VA. The minutes of the 28 October meeting were accepted as published in the Mineral Mite. There was no treasurer's report. The president said 2016 dues (15.00 individual and \$20.00 family) are due. Dues may be paid at the next meetings or sent to the treasurer Michael Pabst, 270 Rachel drive, Penn Laird, VA 22846.

By motion duly made and seconded, the members nominated the incumbent officers for election the 2016 president, vice president, secretary and treasurer. Per the bylaws a slate of candidates for 2016 are elected at the December 2015 meeting.

- President – Dave MacLean
- Vice-president – David Fryauff
- Secretary – George Reimherr
- Treasurer – Michael Pabst

The president circulated again a signup sheet for demonstrating micromineralogy at the NVMC show Sat-Sun 21-22 November in the Hub at GMU.

MNCA will meet with NVMC for joint Christmas party Wednesday 16 December 2015. Cynthia Payne, our founding member in 1967, died 15 November.

The Atlantic Micromounters Conference was rescheduled for Friday evening and Saturday all day 23-24 April, 2016 at the SpringHill Marriott in Alexandria. The conference chairperson is looking for speakers including a researcher from the Smithsonian.

**Announcements:** The November NoVa mini Maker Faire will be South Lakes High School/Hughes HS, Reston, VA Sunday 13 March 2016 <http://makerfaire.com/cfm>. Proposals are due by 17 January 2016 [contact@makerfairenova.com](mailto:contact@makerfairenova.com). Hobbyists of all kinds are invited to exhibit or demonstrate. MNCA may have a demo table there. By motion duly made and seconded the meeting was adjourned.

**Previous Program Reviewed 11/18/15**

By: Dave MacLean, acting Secretary

**Sugar Grove, West Virginia Workshop:**

Club members sorted through various vugs in the basalt. Sugar Grove, in Pendleton, West Virginia is a small village in eastern West Virginia, about 5 miles west of the Virginia state border, almost at a latitude even with Mount Sidney, VA. The exposure of igneous amygdaloidal basalt formed a dike, pushing up through much older Devonian age sedimentary rock. Sugar Grove is clearly an interesting and important site that continues to captivate local micromineralogists with its suite of well-formed crystallized minerals.

Kathy Hrechka located a fine pyrite wire, and photographed it at the meeting with magnification of 30x. *Photo below by Kathy Hrechka*



*Scott Braley also photographed Kathy's pyrite wire.*

**Cynthia Czapek Barnes Payne  
1920 - 2015**



By Susan Fisher

Cynthia Czapek Barnes Payne passed away on November 15, 2015. She will be greatly missed by her family, friends and all who knew her. We will all miss her knowledge and enthusiasm for all things in the natural world. She was a very passionate mineral collector and proficient micromounter. Cynthia was a world traveler and made friends in the mineral collecting world everywhere she went. She enjoyed field collecting and traded minerals with enthusiasts from Australia to Scandinavia. She particularly enjoyed acquiring unusual calcite specimens from little-known locations. In addition to amassing impressive calcite and micromount collections, Cynthia's accomplishments include:

President, vice-president, secretary, and treasurer of Mineral Society of the District of Columbia; Charter member and holder of numerous offices in the Micromineralogists of the National Capital Area;

Eastern Federation of Mineralogical and Lapidary Societies, Inc. committee member and judge;

Wildacres Functioning Committee and instructor;

A Smithsonian Institution Museum technician and volunteer in the Mineral Sciences Department; and Member of the Micromineralogist Hall of Fame (inducted 2006).

Cynthia began her mineral collecting career the way many of us do, picking up rocks as a child.. She was born in Patterson, New Jersey, in October 1920. She

and her sisters walked to school past the now-famous New Street Quarry and she often picked up the glittering zeolites that had been scattered during the quarrying operations. After graduation from high school, she moved to New York City and worked in a dental office. In the early 1940's, Cynthia moved to Glen Echo, Maryland and went to work for the Army Map Service. Being interested in jewelry design, she signed up for a class. Soon she discovered that she needed to know about mineralogy to understand why various rocks and minerals behaved differently when cut. This interest led her to join local mineralogical groups and take any available mineralogical classes.

While working at the Army Map Service, she met and married her first husband, Warring Barnes in 1964. Together they formed a musical instrument restoration business as well as collecting minerals from the local quarries. At one time they even had a key to the gate at the Goose Creek Quarry at Belmont Station and permission to collect there.

After Warring Barnes' untimely death, Cynthia pursued a career in photography and developed a real talent. Years later, even after moving to an assisted living facility, she was still winning prizes for her pictures. In the early 1990's she became reacquainted with a friend, Clarence Payne. They married in 1993 and began to travel. Cynthia and Clarence visited Scandinavia, Russia, England and Australia as well as trips to Arizona and Alaska. Cynthia made friends in each place and collected and traded minerals in each. All during this time, Cynthia was very active in numerous mineral societies and her contributions included teaching micromounting and exhibiting minerals at local and Eastern Federation shows. In 2006, Cynthia was honored by being inducted into the Micromineralogist Hall of Fame.

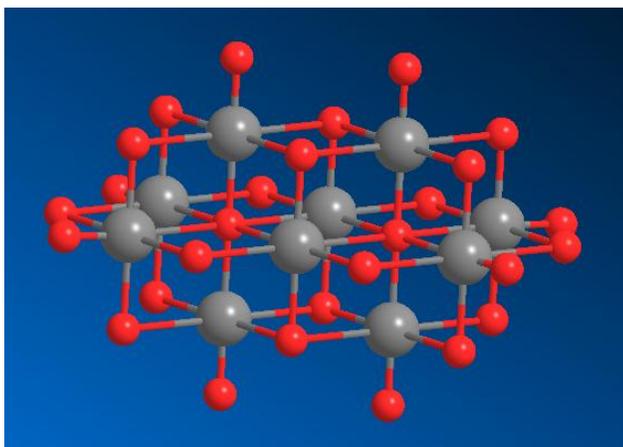
The mineral collecting community has been enriched by Cynthia's contributions. Many of us owe much of our knowledge and fervor to Cynthia's guidance and enthusiasm. Cynthia shared, mentored and encouraged many beginning collectors. Her interest in minerals was not diminished by age or illness and she will continue as a role model for all of us who were lucky enough to have known her. Cynthia donated her body to science. Therefore, no funeral service was scheduled.

## Pascoite and Related Decavanadates

By Michael Pabst

The decavanadates are a class of vanadates that contain an ion with 10 vanadium atoms:  $(V_{10}O_{28})^{6-}$ . These vanadates are water-soluble, and often form post-mining. (I usually wash my specimens with Windex and distilled water to remove dust and fibers, which are distracting in photomicrographs. When the paper towel I set them on turned orange, I realized that Magnesiopascoite was water-soluble. Luckily the exposure to water was brief.) Members of this decavanadate group include Pascoite,  $Ca_3(V_{10}O_{28}) \cdot 17H_2O$ , Magnesiopascoite,  $Ca_2Mg(V_{10}O_{28}) \cdot 16H_2O$ , and Lasalite,  $Na_2Mg_2(V_{10}O_{28}) \cdot 16H_2O$ . They are found in uranium-vanadium mines, and so they tend to be weakly radioactive, or at least the matrix may be radioactive. The complex decavanadate ion forms spontaneously when vanadate is exposed to mildly acidic conditions, pH 4-7. Here is an illustration of the decavanadate anion from Wikipedia:

[en.wikipedia.org/wiki/Sodium\\_decavanadate](http://en.wikipedia.org/wiki/Sodium_decavanadate):



**Decavanadate** ion illustration, where the gray balls represent vanadium and the red balls are oxygen.

Pascoite is monoclinic prismatic ( $2/m$ ), with  $\beta = 120.815^\circ$ . The crystal structure is unusual, comprising decavanadate anions  $(V_{10}O_{28})^{6-}$  linked together with cationic groups  $[Ca_3(H_2O)_{17}]^{6+}$ . The term sorovanadate has been used, with “soro”

referring to isolated groups of vanadate ions. The structure was solved only in 2005: Hughes J M, Schindler M, Francis C A (2005) The  $C2/m$  disordered structure of pascoite,  $Ca_3[V_{10}O_{28}] \cdot 17H_2O$ : bonding between structural units and interstitial complexes in compounds containing the  $[V_{10}O_{28}]^{6-}$  decavanadate polyanion, *The Canadian Mineralogist*, 43, 1379-1386. (In fact, the data on Pascoite in Mindat are obsolete!) Here is a good photomicrograph of Pascoite from Mindat: [www.mindat.org/photo-135430.html](http://www.mindat.org/photo-135430.html). At the latest show in Munich, I picked up a sample of Pascoite from Grand County, Utah, pictured below.



**Pascoite** (orange) with yellow Pascoite? (more finely divided? Pascoite streak is yellow). Yellow Cat Group, Thompson District, Grand County, Utah. Field of view 9 mm.

Magnesiopascoite is monoclinic prismatic ( $2/m$ ), with  $\beta = 120.3^\circ$ . I selected my specimen of Magnesiopascoite from several dozen specimens at Excalibur Minerals, because it had some interesting associated minerals, even though it was not the prettiest specimen as it sat on the shelf. Among the associated minerals might be Rossite,  $Ca(VO_3)_2 \cdot 4H_2O$ , which is a pale-yellow triclinic mineral that features chains of vanadate  $(VO_3)^-$ . In this specimen, the yellow mineral is not finely divided, and shows discernable crystals that are unlike the crystals of Pascoite, so I believe that the yellow mineral is not Pascoite, but rather Rossite or another mineral.

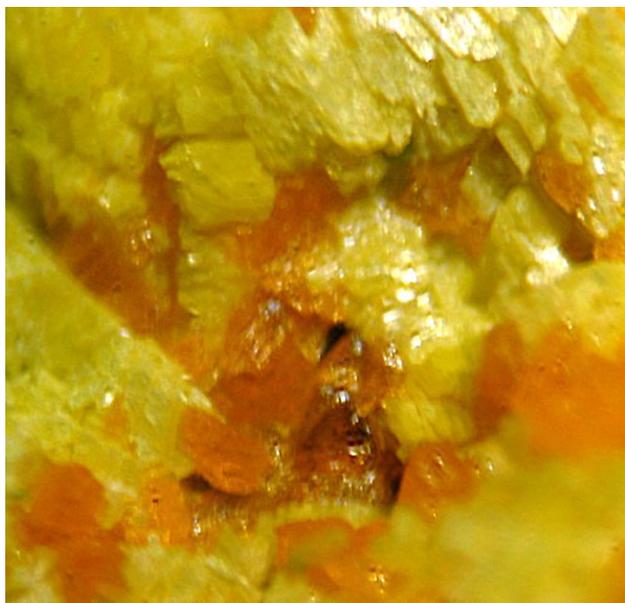
**Article continued on next page.**

## Micromineralogists of the National Capital Area, Inc.



**Magnesiopascoite** (orange) and **Rossite?** (yellow) from the Opera Box Mine, Gypsum Valley, Montrose County, Colorado. These three photos in the left column are from the same specimen. Field of view 9 mm on top photo; and, at higher magnification, 1.5 mm in middle photo, and 1 mm on lower photo.

At the recent Desautels Micromineral Symposium in Baltimore, I engaged in a costly bidding war to bring you a photo of **Lasalite**,  $\text{Na}_2\text{Mg}_2(\text{V}_{10}\text{O}_{28}) \cdot 20\text{H}_2\text{O}$ . Lasalite looks exactly like Pascoite and Magnesiopascoite, so I could have saved my money!



**Lasalite** from the 2300 Level, Pandora Mine, San Juan County, Utah. (Specimen from Dick Thomssen.) Field of view 5 mm.



Lasalite was named for the type locality: Vanadium Queen Mine, La Sal Creek Canyon, San Juan County, Utah. Lasalite is also monoclinic prismatic ( $2/m$ ), with  $\beta = 118.284^\circ$ . Here is a photo of Lasalite from Mindat that shows nice monoclinic crystals with some extra faces: [www.mindat.org/photo-520470.html](http://www.mindat.org/photo-520470.html).

Despite the bright colors, the microcrystals of these decavanadates all look rather weather-beaten. This might be due to their natural water-solubility and life in a damp mine, or there might some mishandling involved (for example, Windex).

There are more vanadium minerals in the world. However, next month we will celebrate the New Year of 2016 by moving from vanadium minerals to chromium minerals. Expect more brilliant colors!

*Photomicrography by Michael Pabst*



Smithsonian  
National Museum of Natural History

Earl Verbeek Photographs Franklin & Ogdensburg  
Minerals at the Smithsonian Institution

By Peter Chin

Earl Verbeek, assisted by Kathy Hrechka photographed minerals of Franklin and Ogdensburg at the Natural History Museum on December 2, 2015. They are participating in the Franklin Mineral Museum book project, *The Mineralogy of Franklin and Ogdensburg. A Photographic Celebration*, to commemorate its 50th Anniversary. It is a major undertaking with international reach. We have obtain contributions from major North American institutions: National Museum of Natural History, Smithsonian Institution, American Museum of Natural History, Canadian Museum of Nature, Yale and Harvard to name a few. Of course, a number of major private collections will featured as well. On the international front, we have elicited cooperation from the British Museum, National Natural History Museum Paris and the Ecole des Mines de Paris. The web site is incorrect as to the deadline for donations. The Franklin Mineral Museum is still accepting donations.

<http://www.franklinmineralmuseum.com/Fundraiser.htm>

The book will be a compendium of high resolution images of not only aesthetic specimens but also of most of the known species found in Franklin and Sterling Hill. Currently there are 361 species of which 69 were first described and 24 remain unique to the deposits. Every effort has been made to ensure that the minerals are accurately identified and in certain instances we have obtained cooperation of individuals and institutions to provide analyses.

Earl has served as Resident Geologist and Curator of both the Franklin and the Sterling Hill Mining Museums, overseeing the collections.

**Note by Kathy:** Dr. Mike Wise delivered the individual minerals from the exhibit case without labels to be photographed. I was amazed how Earl knew each one, including great historical detail. I recorded the data for him on his laptop.



Display of Franklin & Ogdensburg Minerals  
At the Natural History Museum



Earl is patiently photographing specimens.



Willemite crystals with calcite, Franklin Mine  
Sussex Co., NJ is featured at top of case. Short UV

## Ophirite: Utah's Mineral of the Year Discovered by Joe Marty



PHOTO BY: Anthony Kampf

A mineral discovered by retired University of Utah medical technologist Joe Marty recently received the inaugural Mineral of the Year award for 2014 by the International Mineral Association.

Marty discovered the winning mineral, ophirite, roughly 25 years ago at the Ophir Hill Consolidated mine of Utah. The mine, located in the Ophir district in the Oquirrh Mountains of Utah, closed in 1972 and Marty had received special permission to search for minerals on the fateful day he discovered ophirite.

“The announcement of the selection of ophirite as Mineral of the Year came as a pleasant surprise. My co-authors and I thought that it was a really interesting new mineral, but there are usually over a hundred new minerals described every year. So it is very satisfying to have the international community agree as well and to see that we weren’t alone in our opinion,” said Barbara Nash, a professor for the U’s Department of Geology and Geophysics who determined the mineral’s precise chemical composition. The mineral’s analysis and description involved cross-institutional efforts by lead author Anthony R. Kampf from the Natural History Museum of Los Angeles County and co-authors John M. Hughes, Nash, Stephen E. Wright, George R. Rossman and Marty.

**The first natural occurrence in history:** Ophirite forms orange-brown tablet-shaped crystals up to 1 mm long and is the first known mineral to contain an arrangement of atoms that constitute a derivative of

the Keggin structure. The Keggin structure is a form of acid comprised of oxygen, hydrogen and various metals and non-metals. “Hundreds of synthetic compounds with the Keggin structure have been fabricated by chemists and are used in a wide variety of industrial applications. But this is the first time this structure has been found to occur naturally,” said Nash.

**A discovery 25 years late:** Roughly 25 years ago, Marty was on one of his many mineral-hunting adventures looking for a mineral called scheelite. He saw and collected an unusual-looking specimen of scheelite and took it home to look at under the microscope. Unsure of what mineral was present, Marty sent it off for lab analysis. At the time, the lab didn’t possess the capability to detect what mineral was present, so Marty put it away and continued on with mineral collecting. Decades later after working alongside Kampf, Curator Emeritus of Mineral Sciences for the Natural History Museum of Los Angeles County, on numerous mineral discoveries, Marty remembered the sample of what would later be deemed ophirite and sent it to Kampf for analysis.

“Recognition is always great, but the best part of the journey, by far, has been the friendships I’ve developed with the people I’ve worked with. None of this would have been possible without their help, either,” said Marty. For Marty, the discovery of ophirite is simply one of the approximately 60 new mineral species he’s discovered or participated in the discovery of. This is a record number for an amateur collector. Marty recently received the 2015 Pinch Medal from the Mineralogical Association of Canada for his significant contributions to the advancement of mineralogy.

Kampf, who has been involved in the descriptions of more than 150 new minerals, said he enjoys the challenge of putting together everything that is needed to define a new mineral. “I do it because I relish the sense of discovery that I get, especially when the crystal structure turns out to be unique or reveals an unusual new feature,” said Kampf. “That was certainly the case for ophirite, which is particularly exciting because it is the first documented occurrence in nature of one of the most technologically useful types of compounds, which heretofore have only been synthesized laboratories.”

<http://unews.utah.edu/mineral-discovered-by-former-u-employee-named-mineral-of-the-year/>

## "Excalibur Mineral Shop" Tour in Charlottesville, Virginia

By Kathy Hrechka

On December 10, Dave MacLean, Dr. Pete Dunn, Michael Pabst, and Kathy Hrechka toured the shop and warehouse of Excalibur Minerals, owned and managed by Tony Nikischer. Tony's selection of minerals, including micromounts is quite extensive. I searched through numerous flats of Smithsonite, discovering amazing localities.



Michael Pabst discovers rare earth minerals.

Tony Nikischer publishes *Mineral News*, a Mineral Collector's Newsletter each month. Articles are written by various authors, including Michael Pabst.

Visit Excalibur Minerals website or subscribe to *Mineral News*: [www.excaliburmineral.com](http://www.excaliburmineral.com)

**Nikischerite**; A new mineral from Huanuni Tin Mine, Dalence Province, Bolivia. *Mineralogical Record*, March-April 2003 vol. 34 No. 2

Our trip was well worth the two hour drive from Alexandria, as we were given a special behind the scenes tour by Tony.

**Photo below: L - R Tony Nikischer, Dr. Pete Dunn, and Dave MacLean**



Kathy Hrechka examines Smithsonite micros.



## Micromineralogists of the National Capital Area, Inc.



American Federation of  
Mineralogical Societies

AFMS)  
[www.amfed.org](http://www.amfed.org)

The Fabulous “Rock Food Table” on display at  
the AFMS/SFMS Convention in Austin, Texas



Eastern Federation of  
Mineralogical and  
Lapidary Societies

(EFMLS)  
[www.amfed.org/efmls](http://www.amfed.org/efmls)

**Communication and Involvement  
Are the Keys to Our Success!**

### **Geology Events: December:**

**16: MNCA & NVMC Holiday Party**  
6:30 p.m. Long Branch Nature Center,  
Arlington, VA 22206

### **February 2016:**

**13:** Dr. Lance Kearns has again invited MNCA along with MSDC and NVMC, to visit the mineralogy labs at James Madison University, Saturday, February 13, 2016 - that's the Saturday of Lincoln's Birthday (President's Day) weekend. Details will be as usual. It's quite possible that this will be our last invitation to JMU, as Lance will be retiring this year. Hope his replacement on the faculty is as enthusiastic about mineral specimens as he is. I'll get some details for a note in the Mineral-Mite, in January. Tom Tucker

### **April 2016:**

**22-23: Atlantic Micromounters'  
Conference - SpringHill Suites  
Alexandria, VA. 6065 Richmond  
Highway Alexandria VA 22303.  
Speakers TBD**



GeoWord of the Day and its definition:

**bouldery** (boul'-der-y) Characterized by boulders; e.g. a "bouldery soil" containing stones having diameters greater than 60 cm (24 in.) (SSSA, 1965, p.333).

All terms and definitions come from the [Glossary of Geology, 5th Edition Revised](#).

## Micromineralogists of the National Capital Area, Inc.

### American Federation of Mineralogical Societies Congratulates MNCA

By Dave MacLean



**Small Bulletins**

**2nd Place**

**Kathy Hrechka, The Mineral Mite**

**Large Bulletins**

**2nd Place**

**Carolyn Weinberger, Gem Cutters News**

**Webmaster**

**Honorable Mention**

**Julia Hrechka**

**Adult Articles**

**First Place**

**Hutch Brown, Sugarloaf Mountain: a Maryland Mystery**

**Honorable Mention**

**Al Pribula, Atoms Molecules and Ions (and Radicals), BMS**

**Kathy, congratulations and thank you for The Mineral Mite and chairing the Atlantic Micromounters' conference.**

Save the date:

**43rd Annual**

**Atlantic Micromounters' Conference**

**April 22 – 23, 2016**

Presented by

**The Micromineralogists of the National Capital Area, Inc.**

**SpringHill Suites Marriott, Alexandria, VA**

**Micromineralogists of the National Capital Area Meeting:** The 4th Wed. of each month 7:30 -10 p.m. Long Branch Nature Center, (Except Easter & Dec.) 625 S. Carlin Springs Road, Arlington VA 22204

**MNCA Purpose:** To promote, educate and encourage interest in geology, mineralogy, and related sciences.

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**The society is a member of:**

\* Eastern Federation of Mineralogical and Lapidary Societies

(EFMLS) [www.amfed.org/efmls](http://www.amfed.org/efmls)

\* American Federation of Mineralogical Societies (AFMS) [www.amfed.org](http://www.amfed.org) Affiliation

**Dues:** MNCA Membership Dues for 2016 \$15 (single) or \$20 (family)

**Payable to MNCA - Michael Pabst, Treasurer**  
270 Rachel Drive  
Penn Laird, VA 22846



**Editor's Note:**  
by Kathy Hrechka



Send your articles and photos to your editor.  
**Club Article Deadline is 5<sup>th</sup> of each month.**  
*The Mineral Mite* will be emailed on 10th.  
No newsletter July/August

**AFMS Editor's Award**  
**First Place 2011 - Mini Bulletins**

**Member inputs:**

\*Kathy Hrechka  
\*Dave MacLean  
\*Michael Pabst  
\*Pete Chin

