



Bulletin of the Mineralogical Society of Southern California

Volume 91 Number 3 - March, 2018

The 954th meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

March 9th, 2018 at 7:30 P.M.

**Pasadena City College
Geology Department, E-Building, Room 220
1570 E Colorado Blvd., Pasadena**

Program: Continental Drift/ Plate Tectonics: Presented by Walton Wright

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Remember: If you change your email or street address, you must let the MSSC Editor and Membership Chair know or we cannot guarantee receipt of future Bulletins

About the Program: Continental Drift/ Plate Tectonics: Presented by Walton Wright

Walt Wright is the foremost authority on the identification of Petrified Wood in the United States. In this program, he discusses how petrified wood helps in understanding plate tectonics and continental drift.

He wrote a chapter on the Triassic Chinle Formation on fossil woods in 2002, the “Secrets of Petrified Plants” in both English and German. When asked about his degrees, he sort of chuckled and said he had some, but that they were not that important, so we would just assume that he has quite a few.

His recent study is Fossil Tree Ferns out of Argentina first discovered and reported in the Southern hemisphere which was published in Review of Paleobotany & Paleontology Journal. He is presently working in Utah describing new species of seed ferns from Queensland, Australia.

Walt has worked as a botanist in one way or another in his working life, in New Mexico at the Natural Training Center B.S.A., Angeles National Forest U.S.F.S., U.C. Riverside, Santa Monica C.C., and as a consultant for numerous city, county, state, and federal jurisdictions. He received his 1st two specimens of petrified wood when he was about 10 and has been addicted ever since. Academically, his undergraduate work was at C.S.U. Fullerton and graduate work at U.C. Riverside. Leading serious botany and geology field trips started in 1967, giving Paleobotany talks from 1975, and Paleobotany seminars and classes from 1992. These programs have taken him from Dallas, TX, to Billings, MT., and Spokane, WA. to Toronto, Canada, and throughout CA., plus numerous hard to remember places in between. Foreign talks and seminars have been given in New Zealand and China.

From the Editor:

Happy March! Both the Tucson show and our Micro Conference are over and I hope everyone that attended either or both had a great time.

It looks like we will get another really interesting program from Walt Wright this month, If you can make it to the meeting you won't be disappointed. Linda Elsnau

FROM THE PRESIDENT:

Interesting Minerals, A to Z. Installment 2, the letter B: by George Rossman

Baryte, BaSO₄

First of all, the official name of the mineral is baryte, not barite (See Mineralogical Magazine, volume 38, p 102-105). That is because when the mineral was first published, the spelling was baryte. We first learned about the mineral baryte in 1778 where it was described in:

“Explication Morale du jeu DE CARTES;
Anecdote curieuse et interessante,
Sous le nom de Louis Bras-de-Fer, engage au Service du Roi.”

It was mentioned in a section describing substances that form the basis of all stones, and which were considered as simple, basic substances.

“La baryte ou terre pesante, qui est la base du sulfate de baryte ou *spath pesant*. De trèshabiles naturalists la tegardent comme un oxide metallique.”

“Baryte or heavy soil, which is the base of baryte sulphate or heavy spar. The best naturalists look at it like a metallic oxide.”

Ideally, barium sulfate would be colorless, as specimens often are. Samples recently collected near Barstow on the field trip of the Pacific Micromount Conference were colorless.



Blue barite from Colorado
Photo by G. Rossman

But, we know that many baryte specimens are blue such as the one from Colorado pictured below.

When we chemically analyze them, we do not find any copper, cobalt or other elements that are commonly



Gamma-irradiated baryte from Barstow, CA
Photo by G. Rossman

known to cause blue color. We typically just find some strontium, an element the commonly accompanies barium, but does not cause color. So, what is the source of the color. The answer involves the naturally occurring feeble background level of ionizing radiation (gamma rays). Even though the amount of background radiation is extremely feeble, a mineral exposed to it for 10's to hundreds of millions of years will accumulate a significant dose of radiation. The radiation is mostly gamma rays from the decay of naturally occurring radioactive potassium. The gamma rays can strip electrons from the oxygen atoms on the sulfate group. Normally the oxygen ions will have a 2-negative charge from its electrons, but the gamma rays can strip one of the electrons away and leave the oxygen ion with just a single negative charge. It is the O^- ion that is believed to cause the blue color in baryte. Ukrainian scientists were the ones who proposed this in Bartoshinsky VZ, Shumsky AA, Larikov AL, Dersky LS (1991) Paramagnetic and optically active centers in barites of the Ukraine. Mineralogicheskii Zhurnal 13, 73-78 (in Ukrainian).

The proof of an idea is synthesis, so let's try to make blue baryte from the colorless baryte collected in the Barstow area. I put one of Bob Housley's colorless crystal clusters into a gamma source and guess what happened! It turned light blue in a few days and darker blue after about a month in the irradiator. That was the equivalent of about 30 million years of exposure to natural background. The picture below shows the result.

There actually are many minerals that owe their color to natural background levels of radiation. More on that in a future installment.

MINUTES of the February 16, 2018 Meeting

953rd MSSC Meeting opened on 2/16/2018 at 7:30 pm in the PCC Geology Dept by Dr. George Rossman.

New Member Arlene Gomez reported on the Tucson Show.

Pacific Micromount Conference Report by Rene. Everyone was nice and shared their tools. The loop was very helpful. The field trip to the Lead Mine was wonderful.

Merrick and Bob Housley are thinking of a field trip to Ord Mountains on 3/10 or 3/11/2018 to look for micros and other sizes of minerals.

Doctor George Rossman keeps us up to date on number of approved mineral species. We currently stand at 5327 IMA mineral species.

527 of them have been renamed or redefined (Alanite—Ce)

93 are questionable mineral species – ex. Cerium (moon)

71 are awaiting publication

1150 are grandfathered: -- zircon, zincite

81 Formally valid species discredited by IMA (parvo-mangano-edenite)

Who helps to characterize new species?

Housley	30
Rossman	45
Ma	51
Kampf	257

Larry and Leslie Neff spoke on going to Queensland for Boulder Opal, which occurs in iron stone rather than sandstone like at Coober Pedy. We saw a lot of the area around Yahwa where you will find petrified wood with boulder opal. In Coober Pedy along with the sandstone you find shells. Our speakers brought opals for us to look at and perhaps purchase.

Meeting was adjourned at 8:30 pm.

Jo Anna Ritchey, Substitute Secretary

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	April 13, 2018	Pete Goetz: American Opal Society
	May 11, 2018	Tony and Sandie Fender: "50 Unusual Things in the Mojave"
	June 8, 2018	The Webers
	July 13, 2018	<i>Chuck Howser</i>
Board Meeting	March 25, 2018	Board Meeting at Bruce Carter's house

Note: Dates and programs shown above are subject to change. Check your bulletins to confirm final information each month.

MSSC HISTORICAL MEANDERINGS by Ann Meister

In the past, field trips were a monthly activity of MSSC. Sixty years ago, the weekend of March 22 and 23, 1958, the MSSC field trip was to Ludlow in the Mojave Desert on Route 66 (before I-40 existed) and on to the fossil locality in the Marble Mountains. The meeting place was in Ludlow at 9 AM on Saturday morning. The following Field Trip Report was submitted by the chairman Gus Meister and published in the April *Bulletin*.

*_*_*_*_*_*_*_*_*_*

It looked awfully dreary outside when we got up at 3:45 A.M. to get ready for our trip. At 4:40 we started rolling into a dark and damp night. At Fontana it looked as if the clouds would lift, but soon they were down again. Even on the desert side there was no improvement and at the gas station we were told that it had been raining all night. All along the highway way beyond Newberry there were big puddles as evidence of the storm. But just about PISGAH it changed, apparently the edge of the storm. From then on it was beautiful weather, though windy.

The Hefflingers were waiting already when we got there and soon more cars arrived. Eventually there were 8 cars at the Hansen barite deposit. Not much luck there. The barite is quite weathered and falls apart on touch. The second location (given to me by Bob Sieloff) turned up missing. I was told to follow a jeep track around the hill, across about 2 miles of open desert to another hill in back and there was some better barite. He gave me a piece from there and it is good stuff. Well, we tried. The jeep trail soon branched every which way, and the hill in back turned into a full-fledged range. Now where??? Up bounced a VOLKSWAGEN ready to pass us. So, I asked him if he knew where he was going "Yes!" he said very emphatically, so we followed him. About a mile further he got stuck and, in the conversation, it came out that he was going after some cutting agate and knew nothing about our barite. It serves me right. At any rate, we never found the spot and I got some dirty looks. Oh-----well!

After lunch the Foster boys talked us into going on to the fossils. They were itching for it all morning. They led us there and the cars had hardly stopped rolling when Merrill* and Woody* ran up the trail to the fossils. We dug the rest of the day and the next morning, and some very good pieces were found. There were remarks about there not being enough flowers to admire. Well, let me just say that everyone was so busy chasing TRILOBITES that they missed the show. I climbed up on top and over the adjoining hills and saw more different and beautiful flowers than ever before. Usually in small areas or clumps, from minute ground cover to high flowers with over one-foot stems, most delicate and colorful they were!

While sitting around a nice camp fire, with pleasant chatter and some music, a lone car came bouncing up the desert through the dark. It turned out to be Ruth [Moen] and Nettie [Modesti]. It was a beautiful night for camping. There was no moon, lots of stars, clear visibility and not too cold. You rather hate to leave a place like that. But we eventually had to. Some people went straight home over Barstow way, while some of us went over 29 Palms way. The traffic was fierce, and tie-ups prevailed a good part of the way.

I personally enjoyed the trip very much and hope that the other participants did also. In all, there were 26 good people that came in 10 cars and I want to thank them all. See you next trip. [signed] Gus

*_*_*_*_*_*_*_*_*_*

*Notes: You may have noticed Merrill Foster’s name on the Edwin Van Amringe Memorial Scholarship plaque in our refreshments room at PCC. After receiving his A.A. degree at PCC, he attended UC Berkeley for his A.B. and M.A. and Harvard University for his Ph.D. He became a professor of geology at Bradley University in Peoria, IL, maintaining his love of fossils. Woody Foster is a Professor Emeritus in the Department of Evolution, Ecology & Organismal Biology at Ohio State University. He likes bugs. The youngest of the three brothers is Robin Foster who is a botanist with the Field Museum in Chicago.

March Featured Mineral: Green

Something different this month. Since St. Patrick’s Day is coming up, let’s look at Green minerals. Since it’s a lengthy list, here are some of the green minerals that start with “A”:

All photos are © Irocks.com



Adamite : $\text{Zn}_2\text{AsO}_4(\text{OH})$
Locality: Ojuela Mine, Mapimí,
Mun. de Mapimí, Durango,
Mexico
Crystal System: Orthorhombic
4.5 cm x 3.8 cm x 3.3 cm



Adamite (Var: **Cuprian Adamite**) : $(\text{Zn,Cu})_2\text{AsO}_4\text{OH}$
Locality: Ojuela Mine, Mapimí,
Mun. de Mapimí, Durango,
Mexico
Crystal System: Orthorhombic
2.4 cm x 1.8 cm x 1.7 cm



Ajoite : $\text{K}_3\text{Cu}^{2+}_{20}\text{Al}_3\text{Si}_{29}\text{O}_{76}(\text{OH})_{16} \cdot 8\text{H}_2\text{O}$,
Quartz : SiO_2
Locality: Messina Mine, Musina,
Vhembe District, Limpopo
Province, South Africa
Crystal System: Triclinic
2.7 cm x 1.4 cm x 1.3 cm



Albite : $\text{Na}(\text{AlSi}_3\text{O}_8)$
Locality: Pili Mine, Mun. de Saucillo, Chihuahua, Mexico
Crystal System: Triclinic
 2.4 cm x 1.8 cm x 1.2 cm



Anapaite :
 $\text{Ca}_2\text{Fe}^{2+}(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$
Locality: Kerch peninsula, Crimea peninsula, Crimea Oblast', Ukraine
Crystal System: Triclinic
 5 cm x 3.7 cm x 3 cm



Andradite : $\text{Ca}_3\text{Fe}^{3+}_2(\text{SiO}_4)_3$
Locality: Kamar Safed, Bazarak District, Panjsher Province, Afghanistan
Crystal System: Isometric
 1.1 cm x 1.1 cm x 0.9 cm



Andradite (Var: **Demantoid**) : $\text{Ca}_3\text{Fe}^{3+}_2(\text{SiO}_4)_3$, Stilbite
Locality: Antetazambato Demantoid-Topazolite Mine, Antetazambato, Maherivaratra Commune, Ambanja District, Diana Region, Antsiranana Province, Madagascar
Crystal System: Isometric
 3.2 cm x 2.6 cm x 2.4 cm



Anglesite : PbSO_4
Locality: Tsumeb Mine, Tsumeb, Oshikoto Region, Namibia
Crystal System: Orthorhombic
 7 cm x 6 cm x 3.5 cm



Annabergite :
 $\text{Ni}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}$
Locality: Km-3 Mine, Lavrion, Lavrion District Mines, Lavrion District, Attiki Prefecture, Greece
Crystal System: Monoclinic
 3.1 cm x 1.8 cm x 1.8 cm



Antlerite : $\text{Cu}^{2+}_3\text{SO}_4(\text{OH})_4$

Locality: Chuquicamata Mine,
Chuquicamata District, Calama,
El Loa Province, Antofagasta
Region, Chile

Crystal System: Orthorhombic
12 cm x 9 cm x 5 cm



Apophyllite

Locality: Pune District,
Maharashtra, India

Crystal System: Trigonal
2.9 x 2.5 x 2.1 cm



Aragonite : CaCO_3

Locality: Shuikoushan Mine,
Shuikoushan ore field, Changning
Co., Hengyang Prefecture, Hunan
Province, China

Crystal System: Orthorhombic
5.8 cm x 4.8 cm x 2.6 cm



Arsandesclowitzite :

$\text{PbZnAsO}_4(\text{OH})$

Locality: Ojuela Mine, Mapimí,
Mun. de Mapimí, Durango,
Mexico

Crystal System: Orthorhombic
4.6 cm x 2.5 cm x 2.5 cm



Arsentsumebite :

$\text{Pb}_2\text{Cu}(\text{AsO}_4)(\text{SO}_4)(\text{OH})$,

Azurite : $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$

Locality: Tsumeb, Oshikoto
Region, Namibia

Crystal System: Monoclinic
3.7 cm x 2.8 cm x 2.4 cm



Atacamite : $\text{Cu}_2(\text{OH})_3\text{Cl}$

Locality: Ravensthorpe,
Ravensthorpe Shire, Western
Australia, Australia

Crystal System: Orthorhombic
4.5 cm x 3.1 cm x 2.3 cm



Augelite : $\text{Al}_2\text{PO}_4(\text{OH})_3$,
Quartz : SiO_2
Locality: Mundo Nuevo Mine,
 Mundo Nuevo, Huamachuco,
 Sanchez Carrion Province, La
 Libertad Department, Peru
Crystal System: Monoclinic
 3.1 cm x 2.7 cm x 2.2 cm



Aurichalcite :
 $(\text{Zn,Cu})_5(\text{CO}_3)_2(\text{OH})_6$
Locality: Silver Hill Mine group,
 Silver Hill, Silver Hill District,
 Waterman District, Waterman
 Mts, Pima Co., Arizona, USA
Crystal System: Monoclinic
 1.7 cm x 1.3 cm x 0.8 cm



Autunite : $\text{Ca}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10-12\text{H}_2\text{O}$, **Albite** (Var:
Cleavelandite) : $\text{Na}(\text{AlSi}_3\text{O}_8)$,
Muscovite :
 $\text{KAl}_2(\text{AlSi}_3\text{O}_{10})(\text{OH})_2$
Locality: Sapucaia mine,
 Sapucaia do Norte, Galiléia,
 Minas Gerais, Brazil
Crystal System: Orthorhombic
 Autunite xl appx 6mm

Ride Share Listing

Can You Provide A Ride?

Would You Like Company On The Drive To Meetings?

We have heard from several of our members that they would like to ride-share with someone to the meetings. We will list the names, general location and either a phone number or an email address of anyone who would like to connect for a ride-share. If you would like to catch a ride or would like company for the trip, let me know at msscbulletin@earthlink.net and I'll put the information in this section of the bulletin. After that, any final arrangements made are up to you. Also, If you make a connection that works for you, let me know so that I can remove your information from the bulletin. The Editor

Looking for	Who	Where	Contact at
A ride	Richard Stamberg	North Orange County, near Cal State Fullerton	See email bulletin
A ride	Catherine Govaller	San Bernardino, CA	See email bulletin

WEST COAST GEM & MINERAL SHOW

May 18 - 20, 2018

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Photo by Jeff Scovil/BC

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	Business Card	\$5.00	
	1/3 page	\$10.00	
	1/2 page	\$20.00	
	Full Page	\$35.00	

In addition, any advertiser who purchases 12 months of space in advance will receive a discount of 12 months for the price of 10 months. The copy for the ads should be mailed to the editor at bulletin@mineralsocal.org and the payment should be sent to the

MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202

Calendar of Events:

Only local area shows are listed here. Other CFMS Club shows can be found at: <http://www.cfmsinc.org/>

MARCH

March 2 - 11, IMPERIAL, CA

Imperial Valley Gem & Mineral Society

California Mid-Winter Fair & Fiesta

200 East Second Street

Hours: Weekends noon - 10 pm; Weekdays 4 pm - 10 pm

Website: www.ivgms.org [Show Page](#)

March 3 - 4: ARCADIA, CA

Monrovia Rockhounds

L. A. County Arboretum & Botanical Garden

301 North Baldwin Avenue

Hours: 9:00 - 4:30 daily

Website: www.moroks.com

March 3 - 4: TORRANCE, CA

South Bay Lapidary & Mineral Society

Ken Miller Recreation Center

3341 Torrance Blvd (entrance on Madrona)

Hours: Sat. 10 - 5; Sun. 10 - 4

Website: southbaylapidaryandmineralsociety.com

[Show Page](#)

March 3 - 4: VENTURA, CA

Ventura Gem & Mineral Society

Ventura County Fairgrounds

10 West Harbor Blvd.

Hours: Sat 10 - 5; Sun 10 - 4

Website: www.vgms.org [Show Page](#)

March 9 - 11: VICTORVILLE, CA

Victorville Valley Gem & Mineral Society

Hwy 15 / Stoddard Wells Road

Hours: 9 - 5 daily

Website: www.vvgmc.org [Show Page](#)

March 10 - 11: SAN MARINO, CA

Pasadena Lapidary Society
 San Marino Masonic Center
 3130 Huntington Drive
 Hours: Sat 10 - 6, Sun 10 - 5

Website: <https://pasadenalapidary.org> [Show Page](#)

March 17 - 18: LEMOORE, CA

Lemoore Gem & Mineral Society
 Lemoore Trinity Hall
 470 Champion Street
 Hours: Sat 10 - 6; Sun 10 - 4
 Website: [Facebook](#)

APRIL**April 6, 7 & 8: VISTA, CA**

Vista Gem & Mineral Society
 Antique Gas & Steam Engine Museum
 2040 North Santa Fe Avenue
 Hours: 9 - 5 daily
 Website: www.vistarocks.org

April 21 - 22: THOUSAND OAKS, CA

Conejo Gem & Mineral Club
 Borchard Park Community Center
 190 Reino Road
 Hours: 10 - 5 Saturday; 10 - 4 Sunday
 Website: www.cgamc.org

April 21 - 22: PASO ROBLES, CA

Santa Lucia Rock Hounds
 Paso Robles Event Center
 2198 Riverside Ave.
 Hours: Sat 10 - 5; Sun 10 - 4

Website: srockhounds.org [Show Page](#)

April 28 - 29: LANCASTER, CA

Antelope Valley Gem & Mineral Society
 Lancaster High School
 44701 - 32nd Street West
 Hours: 10 - 5 daily
 Website: www.avgem.weebly.com

MAY**May 4, 5 & 6: YUCAIPA, CA**

Yucaipa Valley Gem & Mineral Society
 Yucaipa Music & Arts Festival
 Yucaipa Blvd and Adams St
 Hours: Fri 6 pm - 9 pm; Sat 12 noon - 10 pm, Sun 12 noon - 7 pm
 Website: www.yvgms.org [Show Page](#)

May 5 - 6: ANAHEIM, CA

Searchers Gem & Mineral Society
 Brookhurst Community Center
 2271 W. Crescent Avenue
 Hours: Sat 10 - 5; Sun 10 - 4:30
 Website: www.searchersrocks.org

Random quote from a favorite mineral book:

Definition of a Crystal: as stated in A Textbook of Mineralogy, 4th Edition by Edward Salisbury Dana, page 7, ¶ 2 & 3:

“A crystal is the regular polhedral form, bounded by smooth surfaces, which is assumed by a chemical compound, under the action of its interatomic forces when passing, under suitable conditions from the state of a liquid or gas to that of a solid.”

As expressed in the foregoing definition, a crystal is characterized, first, by its definite internal structure, and, second, by its external form. A crystal is the *normal* form of a mineral species, as of all solid chemical compounds; but the conditions suitable for the formation of a crystal of ideal perfection in symmetry of form and smoothness of surface are never fully realized. Further, many species usually occur not in distinct crystals, but in massive form, and in some exceptional cases the definite internal structure is absent.”

2018 MSSC Officers:

OFFICERS		
President	George Rossman	president@mineralsocal.org
Vice President	Renee Kraus	vicepresident@mineralsocal.org
Secretary	Angie Guzman	secretary@mineralsocal.org
Treasurer	Jim Kusely	treasurer@mineralsocal.org
CFMS Director	Jo Anna Ritchey	
Past President	Ann Meister	
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2016--2018	Bob Housley	
2016--2018	Leslie Ogg	
2018-2019	Pat Caplette	
2018-2019	Pat Stevens	
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Hospitality	Laura Davis	
Membership	Cheryl Lopez	membership@mineralsocal.org
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	programs@mineralsocal.org
Publicity	Linda Elsnau	bulletin@mineralsocal.org
Webmaster	Leslie Ogg	webmaster@mineralsocal.org

About the Mineralogical Society of Southern California

Organized in 1931, the Mineralogical Society of Southern California, Inc. is the oldest mineralogical society in the western United States. The MSSC is a member of the California Federation of Mineralogical Societies, and is dedicated to the dissemination of general knowledge of the mineralogical and related earth sciences through the study of mineral specimens. The MSSC is a scientific non-profit organization that actively supports the geology department at Pasadena City College, Pasadena, California. Support is also given to the Los Angeles and San Bernardino County Museums of Natural History. The Bulletin of the Mineralogical Society of Southern California is the official publication of the Mineralogical Society of Southern California, Inc.

The MSSC meetings are usually held the second Friday of each month, January, February and August excepted, at 7:30 p.m. in Building E, Room 220, Pasadena City College, 1570 E Colorado Boulevard, Pasadena, California. The annual Installation Banquet is held in January, and the annual Picnic and Swap Meeting is held in August. Due to PCC holidays, meetings may vary. Check the Society website for details.

The Society also sponsors the annual Pacific Micro mount Symposium held at the San Bernardino County Natural History Museum during the last weekend of January.

Annual Membership dues for the MSSC are \$20.00 for an individual membership, \$30.00 for a family membership. Bulletins are delivered by email, there is an additional annual \$20.00 fee if you prefer paper bulletins mailed to your address. The Society's contact information:

Mineralogical Society of Southern California

1855 Idlewood Rd.,

Glendale, CA 91202-1053

E-mail: treasurer@mineralsocal.org

Website: www.mineralsocal.org **The Mineralogical Society of California, Inc.**

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MSSC Bulletin Editor
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Glendale, CA 91214-2415

To:



**With Knowledge Comes
Appreciation**

***Your MSSC
Bulletin Is
Here!***