



The President's Corner

mail to: president@saguaroastro.org

I visited our sister club, EVAC, during their April 19th meeting. The visit was great and I was given a warm welcome. Since a number of EVAC members are also SAC members and we work closely on the Messier Marathon I felt I really needed to pay a "courtesy call." Essentially I wanted to thank EVAC for the cooperation we have had with them. I wanted to see how they conducted their meetings and if I could bring any ideas of how to run our organization more efficiently.

As everyone knows, EVAC is more than twice our size and the reason is simple. Their meeting location can only be described as superb! The location of the Gilbert Library is great as it is among large middle-class residential neighborhoods (lots of educated people nearby). The meeting room is large, comfortable, and well equipped with audio-visual equipment.

I noticed that the meeting activities (announcements, member presentations, guest speaker, and etcetera) were in writing and projected on screen. Meaning their activities were prepared in advance. I'm not sure we can do this as our meetings tend to be more spontaneous. I don't know if and how many member presentations we will have until just before the meeting starts.

This can be a little unnerving but I can always count on Paul Lind to have something.

Clear skies,

David



SAC President, David Dillmore at the Thunderbird Park Spring Public Star Party
Photo: Rick Rotramel

Website: saguaroastro.org Like SAC on Facebook



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Quick Calendar

Friday, May 10: **SAC Board Meeting**, 6:30 PM, in room next to SAC meeting
Friday, May 10: **SAC General Meeting**, 7:30 PM, Speakers: Bob Buchheim & Woody Sims;
Topic: "Our M51 Science Project, A Work In Progress" Also: Ted Blank, Topic: "Top Ten
Astronomical Discoveries of 2018, including latest images of Ultima Thule"
Saturday, May 11: **Thunderbird Park Spring Public Star Party**, see page 2
Saturday, June 1: **Star Party**, at the Stoneman Lake Site, weather permitting, see page 2
Tuesday, June 11: **SAC ATM/Imaging Meeting**, 6:30 PM, Paul Lind's Shop, see page 2
Friday, June 14: **SAC General Meeting**, 7:30 PM, Speaker & Topic: TBA
Saturday, June 22-29: **Grand Canyon Star Party, North Rim**, see page 2
Saturday, June 29: **Star Party**, at the Stoneman Lake Site, weather permitting, see page 2
Friday, July 12: **SAC General Meeting**, 7:30 PM, Speaker & Topic: TBA

Header image © 2000-2013 Stellarium
Developers
Scorpius setting in the southwest.



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Editor Notes



Hi Folks,

Look for a new item in the newsletter this month in the *SAC Observing* feature. SAC member Paul Dickson suggested including Guy Ottewell's *Astronomical Calendar* in the newsletter. This is a great listing of astro events to guide your star gazing activities.

The position of SAC Vice President is vacant and needs to be filled, see the duties in *Bits & Pisces*.

Best of the NGC features this month, NGC 5907, a galaxy in Draco.

Such-A-Deal has five ads, buy something!

Bits & Pisces has the minutes of the April SAC General Meeting and some SAC history.

Don't forget, this Saturday, May 11th we have the Public Star Party at Thunderbird Park to show the public the beauty of the night sky. I hope to get out there myself. Thanks to SAC member Jack Jones for arranging this event twice a year out there.

Enjoy,

Rick Rotramel, Editor

Schedule of Events 2019

SAC General Meetings

Jan 25	Feb 22 plus Board Meeting	Mar 22	Apr 12
May 10 plus Board Meeting	June 14	July 12	Aug 9 plus Board Meeting
Sept 13	Oct 11	Nov 8 plus Board Meeting	Dec ? Holiday Party

Meetings held at Grand Canyon University
3300 W. Camelback Rd. Phoenix, AZ
Engineering Building 1-202, 7:30 to 10:00 PM

ATM/Astro Imaging Meeting

Tuesday, June 11th, 6:30 PM @ Paul Lind's Shop
210 W. Tierra Buena Lane, Phoenix, AZ

Star Partys, Stoneman Lake Site
Saturday, June 1st & June 29th, Sunset * Weather permitting
<http://saguaroastro.org/stoneman-lake-directions/>

Outreach:

T-bird Park Spring Public Star Party

Saturday, May 11, 2019, 7-9:30 PM
More info: <http://saguaroastro.org/>

Grand Canyon Star Party, North Rim

Saturday to Saturday, June 22 - 29, 2019
Self-Lodger reservations open 8/1/18 - 12/31/18
Camping reservations open 1/1/19 - 3/1/19
More info: <http://saguaroastro.org/grand-canyon-star-party/>

Spaceflight Trivia

Can you name the mission involved in this picture below? ([See answer on page 5](#))



NASA

2019 SAC Officers

President: David Dillmore



Vice President: TBD

Treasurer: Paul Dickson



Secretary: Kevin Koziel



Properties Director & Webmaster: Robert Brewington

Photos: Susan Trask (3) and Rick Rotramel (1, of Kevin Koziel)



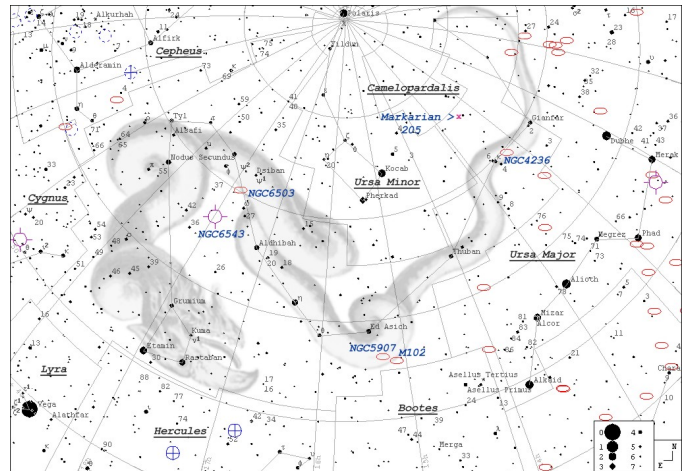
SAC Announcements

SAC Only has 32 Members
As of March 16, only 32 members have renewed for 2019.
Have you renewed?

Use the form on the last page of this issue or on the SAC website.


Best Of The NGC: NGC 5907, Edge-on Galaxy in Draco

By SAC Imagers, Observers & Sketchers



Guest image by James Yoder: C11, Starizona LF Corrector, 30 frames @ 5 minutes, QHY128c, Astronomik UHC filter, 3-30-19, location: Chandler, Arizona

Draco Star Chart

<p>Observing Chart D. M. Douglass - Tempe, AZ</p> <p>Other Names: Knife Edge or Splinter Galaxy</p> <p>Observing Program: EVAC and Astronomical League and General Observations</p> <p>Telescope and Mount: Celestron 6" SCT Mount: Celestron CG5-GT (EQ)</p> <p>CG5 Mount Control: TheSkyX Pro All slews by "closed loop" (Plate Solved) Mount Guiding: TheSkyX Pro Guide Camera: Starlight Express Lodestar X2</p> <p>Image Capture Information: Mag (SBig): (1535/22.5) = 68 FOV = 37 x 28 Arc Min Filter: Lumicon Deep Sky (UHC/LPR) w/ Baader IR/UV Cut</p> <p>Total # of frames (subs): 05 Frame exposure time (min): 02 Total exposure time (min): 10 Camera: SBig ST-8300-M Camera controlled by: TheSkyX Pro Plate Solved by: TheSkyX Pro Preprocessing and stacking: CCDStack PostProcessing: Adobe Photoshop CS3</p> <p>Type: Galaxy</p> <p>R.A. 15:15:54 DEC 56:19.7 Magnitude: 10.4 Size (Arc Min): 12.3 Constellation: Draco</p> <p>Sky Brightness and Weather Mags / sq ArcSec (v)18.5 or Bortle Scale: 6 Moon Ill = 00% - 65F - Calm</p>	<h2 style="margin: 0;">NGC-5907</h2>	<p>Observed and Imaged Date: Mar 24, 2017 Site: AAMM, Salome, AZ Elevation at Site: 1200 ft Local Time: 21:00</p>
		

David Douglass

Continued on next page...

Best Of The NGC:

NGC 5907, Edge-on Galaxy in Draco

By SAC Imagers, Observers & Sketchers

SAC Observer Steve Coe, 1949-2018

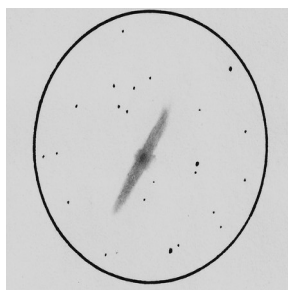
13" f/5.6, Bright, large, very much elongated, bright middle at 100X. At 200X the core is gradually brighter with a stellar nucleus.

13" f/5.6, Camp 613, 9/10, 150X, pretty bright, large, very much elongated 5X1 in PA 165, gradually brighter in the middle with a stellar nucleus. @220X shows a hint of a dark lane, thin but there about 30% of the time, it runs just north of the nucleus.

36" f/5, 20mm Nagler, Texas Star Party '96, 6/10 seeing, 8/10 transp - dark lanes cuts the galaxy right down the middle, a perfect edge-on, splits the core perfectly, galaxy is 80% of the width of the field of view. Two knots to left of core.



15' x 15'



13" f/4.5, 135x

SAC Observer Michael Poppre

102mm ES APO, 65x, March 30, 2019 (All Arizona Messier Marathon) viewed as part of my H400 list. Edge on galaxy in Draco. Very nice, faint sliver.

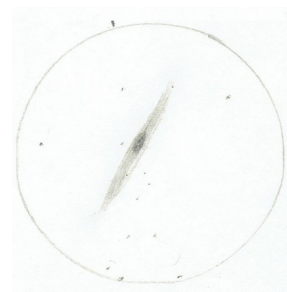
10" reflector, 50x and 85x, Noticeable shape and detail, With some averted vision, could see the central bulge in the disk. Nice example of an edge-on galaxy.

SAC Observer Rick Rotramel

16" f/4.4, Newtonian, 200x, Fairly bright, large, edge-on, with dust lane, with a slightly brighter nucleus.



15' x 15'



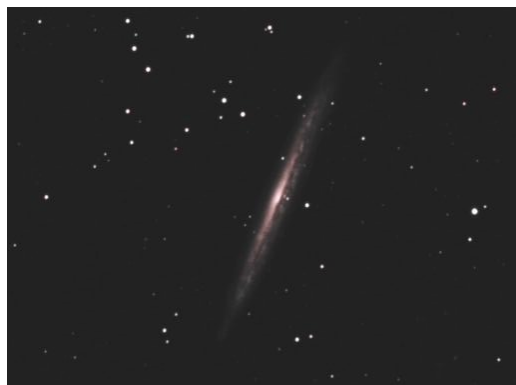
16" f/4.4, 200x

SAC Imager David Dillmore



NGC5907, ISO 1600 for 30Seconds
10-inch SCT, 6.3 Focal Reducer, Skyglow Filter
4-26-2019 Saddle Mountain Observatory

Guest Imager James Yoder



Celestron C-8 Ultima, Starizona Corrector, Canon 60Da, 28 images @ 5 min. (140 min.), Picket Post Mountain, AZ 5/8/18

Call for *Best of the NGC* images, notes and sketches.

Hello SAC imagers, observers & sketchers:

For **May**, NGC 5907 Sb galaxy in DRACO, 15 15.9 +56 19, Mag 11.4, 12.8x1.8, fine edge-on, dust lane.

For submitting images, send your file as an attachment in an email to the editor. Please send caption details of the image: Optics, camera, main software used, exposure, location and date taken.

Observation notes are sent in the email text area or as an attached file.

For scanned sketches, send a file with caption details: optics and eyepiece power used.

Email to: r.rotramel@cox.net

For **June**, NGC 6210 Planetary nebula, 16 44.5 +23 49, 9.7, mag, 20"x13" bluish, in HERCULES.

For **July**, NGC 6960, Emission Nebula, 20 45.6, +30 43, 70x6, The Veil Nebula, west half, in Cygnus.

Spaceflight Trivia Answer

40 Years Ago: Space Shuttle Enterprise rolls to the Pad, May 1, 1979

OV designation	OV-101
Country	United States
Contract award	July 26, 1972
Named after	USS Enterprise (NCC-1701) (Star Trek starship)
Status	Retired, on display at Intrepid Museum, New York City
First flight	ALT test flight on SCA
February 18, 1977	
Last flight	Ferry flight on SCA
April 27, 2012	
Time spent in space	None
Space Shuttle Enterprise	
U.S. National Register of Historic Places	
Location	New York City
Built	1976
Built by	Rockwell International
NRHP reference #	13000071
Added to NRHP	March 13, 2013



Such-A-Deal

ITEMS FOR SALE

MEADE ETX-90EC 90mm Maksutov Telescope

- Includes the following:
- #07426 8 x 21mm Erect Image Viewfinder
- #07427/#825 8 x 25mm Right Angle Viewfinder
- Deluxe Tripod
- Eyepieces:
 - Meade Ultra Wide Angle 6.7mm multi-coated
 - Meade Super Plossl 26mm LP multi-coated
- Meade 2X telenegative multi-coated
- Meade remote controller
- #880 Table Tripod for Polar Alignment of the ETX-90EC Astro Telescope
- Manual
- Compass
- Carrying Case
- Allen wrenches



- Selling on behalf of a friend, Asking \$350.00 For all.
- Contact Rick Tejera: 623-203-4121
- Email: Saguaroastro@cox.net

16-inch Dobsonian & Observing Chair

Telescope: 16-inch f/4.5 Enterprise Optics mirror, excellent figure and performance.

- Truss-type Dobsonian, home-made of Baltic Birch structure, bearings of Ebony Star and Teflon.
- Black fabric light shield (not shown in photo)
- 'Scope disassembles and nests into approximately 3-foot cube, to fit into your van.
- Protective box for primary mirror.

Observing chair: stand or sit comfortably, even when viewing at the zenith!

Asking:

\$1900

Contact me to schedule a visit in Gold Canyon.

Bob Buchheim

Email: oca_bob@yahoo.com

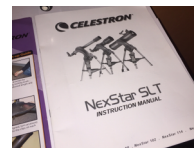
480-646-1324



Ads placed here are free to SAC members and friends. SAC is not responsible for the quality of the advertised items. If you wish to place an ad here to sell your telescope or astronomy related items, contact Rick Rotramel at: r.rotramel@cox.net

Celestron Nexstar 130 SLT

- Celestron Skyportal wifi module
- Orion Lasermate Collimator
- Celestron 2" Universal Digital Camera Adapter
- Meade 2X Barlow Lens
- 25mm & 9mm Eyepieces
- Nikon adapter ring
- Moon filter
- Original manuals and start up guides
- Original investment: over \$600
- Asking for all items: \$375.00
- Steve Scott, 602-502-4955
- Mailto:steve@equitysigngroup.com



For Sale

Orion Maksutov-Cassegrain Telescope - 127mm 5in

\$300.00

602-240-5421 or 602-499-9910

Sky-Watcher Star Adventurer Mini (Black)

I have too many toys and am selling my Star Adventurer Mini. It includes all components, manual and box. It's fully functional and in 'Like New' condition. You can control the SAM from an Android or iOS device. Details can be found on the Sky-Watcher website below.

Does not include DEC Bracket or Wedge.

- <https://www.skywatch...adventurer-mini>
- <https://www.youtube....h?v=qVSmHghQxbQ>
- <https://www.youtube....h?v=e4ecJOceRjY>
- <https://www.peterzel...rer-mini-course>



Cost new is \$299. I am asking \$180.

Jim Waters: jimwaters@cox.net

Such-A-Deal

ITEMS FOR SALE

Vixen SXW Computerized, Equatorial Mount with Starbook Controller

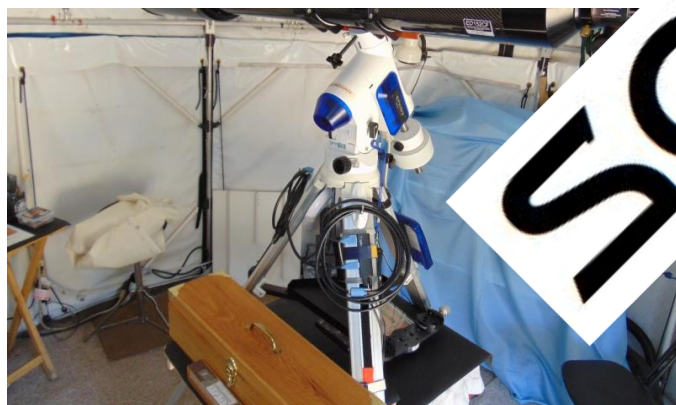
I purchased this mount with a Vixen 8" Astrograph on top of it from the estate of the past president of the Riverside Astronomical Society, the astronomical portion of that estate being sold off by RAS at a past RTMC gathering. I sold the astrograph some time ago but the mount has been my primary solar observatory mount for several years now here in Flagstaff. It comes with the manual, deluxe tripod, Starbook controller, two factory counterweights, and any features which were standard equipment on the original unit. Weight capacity is stated to be 35 pounds. It has a Vixen dovetail rail mounting. This mount is easily light enough to be transported and I occasionally drag it down to Camp Verde in the winter months to continue the solar work while staying in our trailer.

This is a very sophisticated mount with an exquisite controller system, the Starbook. It has been very happy with a coaxially mounted Lunt 80mm double stacked solar scope and a Stellarvue 80mm triplet with a Thousand Oaks white light filter on it. I also run a Celestron 9.25" cassegrain on it for planetary.

This is a very good deal at **\$1000**, exactly what I paid for it. If it makes it easier, I might be open to a part trade. I'm open to driving down to Cordes Junction or so to meet.

Fred Tretta, Flagstaff, AZ

Email: ftretta@msn.com



SOLD!



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Such-A-Deal

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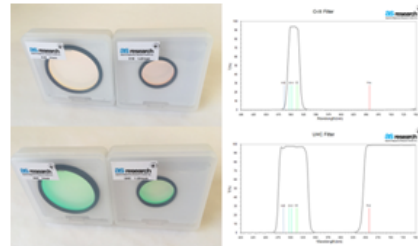
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 Closed Sun. Free Viewing Fri and Sat nights!
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The HyperStar-equipped ISERV telescope is now installed on the ISS!

The HyperStar-equipped Celestron 9.25" telescope (and its backup) that is now installed on the ISS. The scope also features a Starizona MicroTouch Autofocuser. With the Starizona gang: Steve, Scott, Dean, and Donna. (Steve has since had to move to NY because he was dressing too much like Scott.)

Call Us: (520) 292-5010

<http://starizona.com/acb/index.aspx>
dean@starizona.com



Bits & Pisces

Minutes of the April 12, 2019 SAC Meeting By Kevin Kozel, SAC Secretary

President David Dillmore called the meeting to order at 7:30 pm and asked if there are any new members or visitors tonight. One visitor was present and his name is Steve Remmy. Welcome Steve!

David also asked how many people will be going to JB's after the meeting - four folks said they will be going and this will have to be Denny's because JB's requires at least ten people to stay open past 10 pm.

The president asked for a volunteer to take over the outreach program for the Club. Tom Curry told the Club he would take over as Outreach Chairman. Thanks very much, Tom.

The president asked for members reports from around the Club. Jack Jones told us that the Thunderbird Star Party will be held on May 11, 2019 at the Glendale Conservation Park as in years past. Please see the announcement in the Club newsletter for details. This is a great opportunity to show the public how much you know and like the sky above us.

Jack also said there are Marathon t-shirts still available for purchase. Come and get them before they're all gone.

David said that we do not yet have a speaker for the May meeting. He is still looking for one at this time. David also asked for a member to fill the position of Vice President in the Club. Please consider helping out.

The Treasurer report for the month was stated by Paul Dickson and we have \$2,588 in the bank and this figure does not include the Marathon raffle money or last month's 50/50 money. This total is \$650. Paul stated we now have 40 paid members but we need at least 60 to keep the Club in the black. Please pay your dues, folks. A reminder will be sent via email this month.

Paul Lind held an ATM meeting at his shop last Tuesday evening and Paul helped Mike McDonald with his equatorial mount pier adapter. They milled a piece of aluminum to allow his mount to be placed on the pier at his home observatory. Lynn Blackburn helped Kevin Kozel with his 3" reflector by finding the proper placement of the primary mirror. The tiny scope has a very short focal length of 241 mm. With the small 0.965" eyepieces Kevin has, the power of his new scope will be from 12x to 45x. The field of view is as wide as 2.5 degrees.

Also at the ATM meeting, Paul measured Lynn's 16" mirror and the final determination for the mirror has yet to be found. Stay tuned, folks.

At Friday's meeting, Paul Lind showed the Club his images of various Messier objects taken during the *Imaging* Messier Marathon with his wide field 8" f/3.6 Astrograph. His images were very nice. Thanks, Paul. *(Paul placed third place with 99 Messier object images! The Editor)*

Our speaker tonight was Maitrayee Bose from the ASU School of Earth and Space Exploration. Professor Bose told the Club about 'Presolar Grains, Connecting Lab Studies to the Stars'. She told us that the Zodiacal Light may be made up of some presolar grains. Meteors may also contain presolar dust grains and other materials that made up the early solar system. Her talk was very in-depth and informative. Thank you, Dr. Bose!

The 50/50 drawing was held and the Club netted \$22.00.

The meeting was adjourned at 9:45 pm.

The April SAC Meeting Speaker

Maitrayee Bose
Isotope Cosmochemist
www.maitrayeebose.com

Assistant Professor
School of Earth and Space Exploration
Arizona State University

Topic: "Presolar Grains, Connecting Lab Studies to the Stars"



Maitrayee Bose

Photo: David Dillmore



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Bits & Pisces

Reminder: Pay Your Dues for 2019!

New SAC Meeting Location:

Engineering Building 1-202
It is just north of the parking garage.

(Old room location, Building 33)

GRAND CANYON UNIVERSITY

3300 W. Camelback Road, Phoenix, AZ 85017
gcu.edu | 800-800-9776 | www.gcu.edu/campusmap

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- ♿ Handicap Parking



New Meeting Room

Parking Garage



Bits & Pisces

At the November 16, 2018 SAC Meeting:

Election of 2019 SAC Officers, Results

President: David Dillmore
Treasurer: Paul Dickson
Secretary: Kevin Kozel

Position still open: Vice President

Duties Defined, From The SAC Constitution:

Article V: Form of Government, B. Administrative Officers—Tenure of Office and Elections, 7) Duties of the Board of Directors:

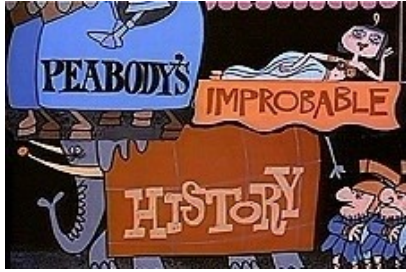
b) Duties of the Vice President shall be: The Vice President shall serve in the President's place in the event the President is absent or unable to serve for any reason. He will be in charge of club programs and both general club publicity and program publicity. He will be the one to whom other board members report the lines of communications between the President and the Board. He shall serve as chairman of the program and activities committee and shall in the execution of this duty, be responsible for coordinating and scheduling the following:

- (1) General business meetings and the program agenda;
- (2) Club activities such as star parties, etc.

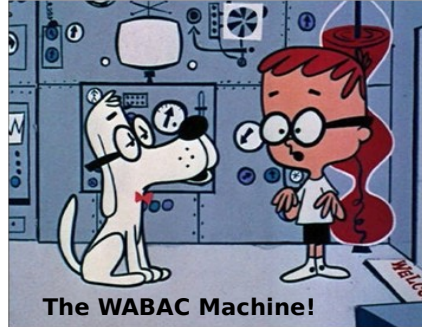




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© Peabody and Sherman, 'Rocky and Bullwinkle' Pictures



Where we going today Mr. Peabody?

25 Years Ago in SAC



Minutes of the May Meeting

President Bob Gardner opened the meeting at 7:30pm. The first announcement was that there were two speakers on archaeo-astronomy, consequently there would be no Show-and-Tell or eclipse photos. They would have to wait until the next meeting. Announcements would be kept brief and to the point. He then asked for visitors to stand and identify themselves. Several do so.

Due to the treasurer's absence there was no treasurer's report.

A.J. Crayon announced the next Deep Sky Group Meeting, June 2, and that the list of objects to be discussed were in the May and June Newsletters.

Rich Walker, Public Events Director, gave quite a list of public and private Star Parties. The largest being the annual Thunderbird Park meet at which there were 23 scopes and several hundred people. This event was also listed in a Chinese/English newspaper, in Chinese and English! Nice job. Rich is working on a star party in Payson for June 18th.

Susan Morse introduced the first speaker Ben Mixon whose avocation is archeology. His topic was the hole in the rock at Papago Park and its interesting relation to astronomy. It is astonishing how these prehistoric astronomers of more than a 1000 years ago understood the motions of the Sun and Moon. And without the help of the NGC, a telescope or computers!

The second speaker, Dr. David Jacobs an archaeologist from ASU, discussed several prehistoric digs for the Bureau of Land Management around the Lake Roosevelt area. He showed several slides and discussed the symbolism behind the pre-historic thought process. Some of the slides were still a puzzle to him and his colleagues. One in particular had walls that converged at an angle of 6 degrees. It is thought to have astronomical implications but so far they are drawing blanks (cloudy skies?). The question was put to those in attendance for an answer. So far none have been proposed.

—A.J. Crayon, SAC Secretary

10 Years Ago in SAC



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Bits & Pisces, Minutes of the May 8th, 2009 General Meeting by AJ Crayon, Secretary



After our auspicious President Richard Harshaw called the meeting to order he announced upcoming events. Depending on the publication date, the following events are scheduled - June 2nd ATM meeting at Paul Lind's house; June 5th SAC meeting; June 13th Star Party at Cherry Rd and June 19th Star Party at Five Mile Meadow.

At this time there were 35 folks in the meeting room.

Tom Polakis SKYGZR light second party on May 9th. What this means is his trucks' odometer reached 186282 miles and they were inviting club members to celebrate the momentous occasion. Gene Lucas discussed SAC display for IYA2009 at the Arizona Science Center. Gene, single handedly, spent more time than any other SAC member helping with this project. Paul Lind discussed his 12.5" f/6.3 hyperbolic astrograph (when do we start seeing some images?). Jack Jones indicated about 200 folks attended the 2009 AAMM and a few hundred at the public start party at Thunderbird Park, despite cloudy skies.

Steve Dodder discussed the Grand Canyon Star Party at the North Rim and told us that only camp sites were still available. The star party runs from June 13th to the 20th. If you plan on attending it is suggested to get your reservations in as soon as possible.

The President then Opened the Business Meeting to discuss an Amendment to By Laws in regards to SAC dues. He presented the case for - basically the treasury was dwindling down and was hovering around \$900.00. The dues increase proposed is Charter: \$32.00, Regular: \$32.00 and Family: \$48.00. A discussion followed that included both for and against. When the discussion was closed, ballots were distributed to voting members and collected after being marked. The final tally, counted by Jack Jones, Wayne Thomas and David Fredericksen, was 28 yea, 2 nay and 1 no vote. So the amendment passed over well-mingle and we will have a dues increase for 2010.

After the break our Vice President Chris Hanrahan introduced the evening's speaker, AJ Crayon and his topic - Galaxy Classification.



SAC Observing

Astronomical Calendar for May 2019

© 2018 by Guy Ottewell

The left column gives **Julian Dates** (number of days from 4713 B.C. Jan. 1 noon), useful for finding time spans between events by subtraction. The first 3 digits of the Julian date (245) are omitted.

Hours and minutes, where given, are in Universal Time.

Occasions such as "Moon 1.25° N.N.E. of Venus" are **appulses**: closest apparent approaches. They are slightly different from **conjunctions**, when one passes north of the other as measured in right ascension or in ecliptic longitude. A **quasi-conjunction** is an appulse without a conjunction, and typically happens when a planet is near its stationary moment.

For **meteor showers**: ZHR (zenithal hourly rate) is an estimate of the number to be seen under ideal conditions at the peak time if the radiant were overhead; actual rates may be very different. Peak times (predicted from where the center of the stream seems to cross Earth's orbit) are

uncertain; best to start watching the night before. Meteor are usually most abundant in the morning hours.

Tell me of errors you notice. They're inevitable, but more easily corrected here than in the former printed *Astronomical Calendars!*

universalworkshop.com/contact
This calendar may be subject to improvement. Come back to it!

Explanation of terms can be found in our glossary book *Albedo to Zodiac*. There is more about each topic in *The Astronomical Companion*. And events in this list can be traced in the large *Zodiac Wavy Chart* for the year. For all these, see

universalworkshop.com



8605.708	May	2 Thu	5	Saturn 2.71° w. of Pluto; 111° and 109° from the Sun in the morning sky; magnitudes 0.5 and 14.3; quasi-conjunction
8606.125			15	Moon 3.4° S.S.E. of Venus; 28° and 27° from the Sun in the morning sky
8606.896		3 Fri	10	Moon 2.73° S.S.E. of Mercury; 19° from the Sun in the morning sky
8607.096			14	Mars and Saturn at heliocentric opposition; longitudes 105.2° and 285.2°
8607.625		4 SAT	3	Moon 4.4° S.S.E. of Uranus; 11° and 10° from the Sun in the morning sky
8608.449			22:46	New Moon ; beginning of lunation 1192
8609.5		6 Mon		1st day of Ramadan (1440 A.H.)

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8609.5			Eta Aquarid meteors; ZHR 50; peak May 6 7; 1 day after New
8609.708		5	Moon 7.9° S.S.E. of the Pleiades; 16° and 15° from the Sun in the evening sky
8610.396		22	Moon 2.23° N. of Aldebaran; 24° from the Sun in the evening sky
8611.5		8 Wed	Eta Lyrid meteors; ZHR 3; peak May 8 21; 3 days before First Quarter
8611.542		1	Moon 3.2° S.S.E. of Mars; 38° from the Sun in the evening sky
8612.167		16	Mercury 1.26° S.S.E. of Uranus; 14° from the Sun in the morning sky; magnitudes -0.8 and 5.9
8613.286		9 Thu 19	Moon at ascending node; longitude 109.3°
8613.625		10 Fri 3	Moon 6.3° S. of Pollux; 65° and 64° from the Sun in the evening sky
8613.742		6	Venus at southernmost latitude from the ecliptic plane, -3.4°
8615.550		12 SUN 1:12	First Quarter Moon
8616.188		17	Moon 2.88° N.N.E. of Regulus; 98° from the Sun in the evening sky
8617.412		13 Mon 21:54	Moon at perigee; distance 57.86 Earth-radii
8617.876		14 Tue 9	The equation of time is at a maximum of 3.65 minutes.
8618.053		13	Sun enters Taurus, at longitude 53.47° on the ecliptic
8619.979		16 Thu 12	Moon 7.1° N.N.E. of Spica; 148° from the Sun in the evening sky
8620.435		22	Mars at northernmost declination, 24.56°
8622.208		18 SAT 17	Venus 1.08° S.S.E. of Uranus; 23° from the Sun in the morning sky; magnitudes -3.9 and 5.9
8622.382		21:10	Full Moon
8623.136		19 SUN 15	Mercury at ascending node through the ecliptic plane
8623.354		21	Moon 7.8° N.N.E. of Antares; 167° and 168° from the Sun in the morning sky
8624.250		20 Mon 18	Moon 1.71° N.N.E. of Jupiter; 157° from the Sun in the morning sky
8624.833		21 Tue 8	Sun enters the astrological sign Gemini, i.e. its longitude is 60°
8625.038		13	Mercury at superior conjunction with the Sun; 1.322 AU from Earth; latitude 1.42°
8625.104		15	Mercury 3.7° S.S.E. of the Pleiades; 0° and 4° from the Sun in the evening sky; magnitudes -2.3 and 2.9
8626.300		22 wed 19	Moon at descending node; longitude 288.5°
8626.458		23	Moon, Saturn, and Pluto within circle of diameter 2.94°; 130° west of the Sun
8626.458		23	Moon 0.63° S.E. of Saturn; 131° from the Sun in the morning sky
8627.805		24 Fri 7	Mercury at perihelion, 0.3075 AU from the Sun
8629.229		25 SAT 18	Mercury 6.5° N.N.W. of Aldebaran; 5° and 8° from the Sun in the evening sky; magnitudes -1.8 and 0.9
8630.059		26 SUN 13	Moon at apogee; distance 63.36 Earth-radii
8630.190		16:33	Last Quarter Moon
8631.333		27 Mon 20	Moon 3.5° S.S.E. of Neptune; 78° from the Sun in the morning sky
8635.083		31 Fri 14	Moon 4.5° S.S.E. of Uranus; 35° from the Sun in the morning sky



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Mail Address

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2019 Board Mtgs:

February 22, 6:30 pm
 May 10, 6:30 pm
 August 9, 6:30 pm
 November 8, 6:30 pm

Occultation Info

Wayne Thomas has asteroid occultation info for the greater Phoenix Area:

[Mail to:tomwaymas@gmail.com](mailto:tomwaymas@gmail.com)

Meeting Location: Grand Canyon University is located at 3300 W. Camelback Rd, Phoenix, AZ. We meet in Engineering Building 1-202, 7:30 to 10:00 PM.



Parking: Turn into the campus from Camelback Road at 33rd Ave. and drive straight and stop at the guard station. Tell the guard you are attending the astronomy club meeting. Then, drive into parking garage and park.

Saguaro Astronomy Club

Saguaro Astronomy Club (SAC), Phoenix, Arizona, was formed in 1977 to promote fellowship and the exchange of scientific information among its members-amateur astronomers. SAC meets monthly for both general meetings and star parties, and regularly conducts and supports public programs on astronomy. Membership is open to anyone with these interests.

Saguaro Skies is posted as a pdf file monthly on the SAC website,

www.saguaroastro.org/content/SACNEWS/newsindex.htm

for browsing or downloading for SAC members and friends of SAC. A email announcement of the monthly newsletter release is included with membership.

Direct all membership inquiries to the SAC Treasurer by using the membership form found in this newsletter. For editorial and SUCH-A-DEAL advertising inquiries, contact the Saguaro Skies Editor.

Contacting This Issue's Authors

If you wish to write to an author in this month's issue, contact them by sending your message to the editor of Saguaro Skies, Rick Rotramel, at: r.rotramel@cox.net

I will then forward your questions or comments to the author.

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- \$32.00 Individual Membership
- \$36.00 Family Membership



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**Saguaro
Astronomy Club**

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*SAC has several email lists. To subscribe, simply send an email to the list address with **Subscribe** on the subject line.*

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SAC-Forum@freelists.org - SAC Forum is a general discussion list for members to discuss the club or astronomy in general.

SAC-Board@freelists.org - SAC Board is a list for discussions of club business. If you'd like to see how the club is being run, this is the list for you.

AZ-Observing@freelists.org - AZ-Observing is not a SAC list, but many members participate. This is the list for discussions on observing around the state.

Please download the PDF version of the monthly newsletter from our website. When the newsletter is published a message will be sent to the email address provided above containing a URL to the current newsletter.

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