



Desert Sky Observer

Volume 28 Issue 6

June 2008



NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
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*The Antelope Valley Astronomy Club, Inc., is a 501(c)(3) Non-Profit Corporation.
Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/
The A.V.A.C. is a Sustaining Member of The Astronomical League and the
International Dark-Sky Association.*



Up-Coming Events

June 8: Solar and Lunar Club @ [Matt Leone's](#)

June 13: Club meeting @ [S.A.G.E. Planetarium](#)*

June 16: Board meeting @ [Pedroza Flats](#)

July 5: Dark Sky Star Party @ [Mt. Pinos](#)

July 5: [Prime Desert Woodland](#) Preserve Moon Walk

* Monthly meetings are held at the S.A.G.E. Planetarium on the Cactus School campus in Palmdale, the second Friday of each month. The meeting location is at the northeast corner of Avenue R and 20th Street East. Meetings start at 7 p.m. and are open to the public. *Please note that food and drink are not allowed in the planetarium*

Club President

Terry Pedroza

As President of the Antelope Valley astronomy Club this; the DSO article, is probably the hardest thing that I have to do. I am not much of a writer so this pushes my personal envelope. I am responsible for the Christmas party and delegating responsibilities to the other board members. All in all I think that I have the easiest board position.

You are probably asking yourself why I ramble on about my position. I do this because people seem to think that being an Antelope Valley Astronomy Club board member is hard and a lot of work, it is not. Yes, sometimes we do have to spend some time on our projects but that is the exception not the rule. I have gotten back far more than I have put into being a board member. The personal growth that I have experienced far outweighs the time and effort that I have put forth. If you have shied away from running for a board position because you think that it takes too much time, please reconsider, you'll be glad that you did!

I'm sure that others will be writing about RTMC but I have to put my two cents in. It was cold, it snowed on us. There were fewer vendors than normal and there were less people but it was still a BLAST!!! Deb and I got there on Thursday; set up the AVAC base camp and the weekend began. This is one of my favorite astronomy events of the year and this year did not let me down.

The Amateur Solar Physics symposium at Mount Wilson is fast approaching. There are a total of eight openings with six spoken for. The cost is three Hundred dollars per person for the event, which includes two nights on the mountain and three days of solar physics. We will have time on the Snow telescope and instruction on using the spectrograph as well.

The cost for this event is \$300.00 per person and is due by June 16th to the AVAC. Please confirm and get your payment in as soon as possible. If we end up with less than six we will have to cancel so please confirm soon.

Clear Skies All,
Terry

Vice President***Debora Pedroza***

It suddenly occurred to me that this newsletter article is for the month of June and we are already at the halfway mark for the calendar year. It has been so fun and rewarding to serve as vice president on the board because finding speakers and activities to do at our club meetings has been so easy and the diversity just keeps growing as we watch history happen all around us!

The new Space Shuttle and the International Space Station will be the topic for our presentation at our club meeting on June 13. Our guest speaker is Bob Redman and he will have new video as well as models to demonstrate the latest technology and design of these crafts. Our essay contest winners and their families were given a sneak preview of this presentation and it was a huge hit. (Very hands on)

Many of our club members will come together at our July meeting and present a "show and tell" about the Riverside Telescope Makers Conference held at Big Bear over the Memorial Weekend. Club members, especially newer members, will get to see a wide selection of items purchased by other club members from various astronomy vendors. These vendors travel from all over the country and hearing their stories and sharing their love of astronomy is as fun as buying their goodies. We will share our RTMC adventures and introduce you to the vintage telescope.

One of the most popular instruments displayed at the Riverside Telescope Makers Conference was the LHIRES High Resolution Spectrograph. Our club president went nuts over this and I felt like I was back in my high school science class. One of the gentlemen promoting this product is Dale Mais and he has agreed to come out in August and talk to us about Mira variable stars. It should be very interesting. If you wish to get additional information about this beforehand, you can contact him at mais@vcweb.org.

Stars abound...take good care!

Director of Community Development***Karole Barker***

We had a very exciting month with our club and doing outreach at a few schools. In addition, the "Astronomy Dudes" made an appearance at Esperanza School along with "Roswell." Here is a response from one of the teachers, Monica Clark:

Hi Astronomer Dudes,

I (We) want to thank you for coming to our 5th grade class and putting on a great lesson/show. We really enjoyed viewing the sun, learning many, many new things about our solar system, and meeting the Alien.

I mentioned to the other 5th grade teachers about today's lesson and I think they'll be scheduling a repeat performance next year during the solar system unit.

We had a great turn out for the Prime Desert Woodlands on May 10th; we had almost 170 people show up that night. We do have some upcoming events at Prime Desert Woodlands in June and July. I will be sending out an e-mail with the confirmed dates and times. In addition, don't forget our "Lunar Club" with Matt Leone. I will be sending out an e-mail with the confirmed dates and times for this as well.

Don't forget about Mt. Wilson on June 28th. Please don't forget to send me an e-mail or call me if you want to go to Mt. Wilson, so I can figure out how much each club member has to pay. I need this information as soon as possible.

On July 2nd there will be a star party at Edwards Air Force Base for about 30 cadets at around 6:30. I will have more information at the next meeting. I need club members to volunteer for this event, so I can advise Edwards Air Force Base how many members will be attending by mid June.

Clear Skies,
Karole



Ozone, the Greenhouse Gas

We all know that ozone in the stratosphere blocks harmful ultraviolet sunlight, and perhaps some people know that ozone at the Earth's surface is itself harmful, damaging people's lungs and contributing to smog.

But did you know that ozone also acts as a potent greenhouse gas? At middle altitudes between the ground and the stratosphere, ozone captures heat much as carbon dioxide does.

In fact, pound for pound, ozone is about 3000 times stronger as a greenhouse gas than CO₂. So even though there's much less ozone at middle altitudes than CO₂, it still packs a considerable punch. Ozone traps up to one-third as much heat as the better known culprit in climate change.

Scientists now have an unprecedented view of this mid-altitude ozone thanks to an instrument aboard NASA's Aura satellite called the Tropospheric Emission Spectrometer—"TES" for short.

Most satellites can measure only the total amount of ozone in a vertical column of air. They can't distinguish between helpful ozone in the stratosphere, harmful ozone at the ground, and heat-trapping ozone in between. By looking sideways toward Earth's horizon, a few satellites have managed to probe the vertical distribution of ozone, but only to the bottom of the stratosphere.

Unlike the others, TES can measure the distribution of ozone all the way down to the heat-trapping middle altitudes. "We see vertical information in ozone that nobody else has measured before from space," says Annmarie Eldering, Deputy Principal Investigator for TES.

The global perspective offered by an orbiting satellite is especially important for ozone. Ozone is highly

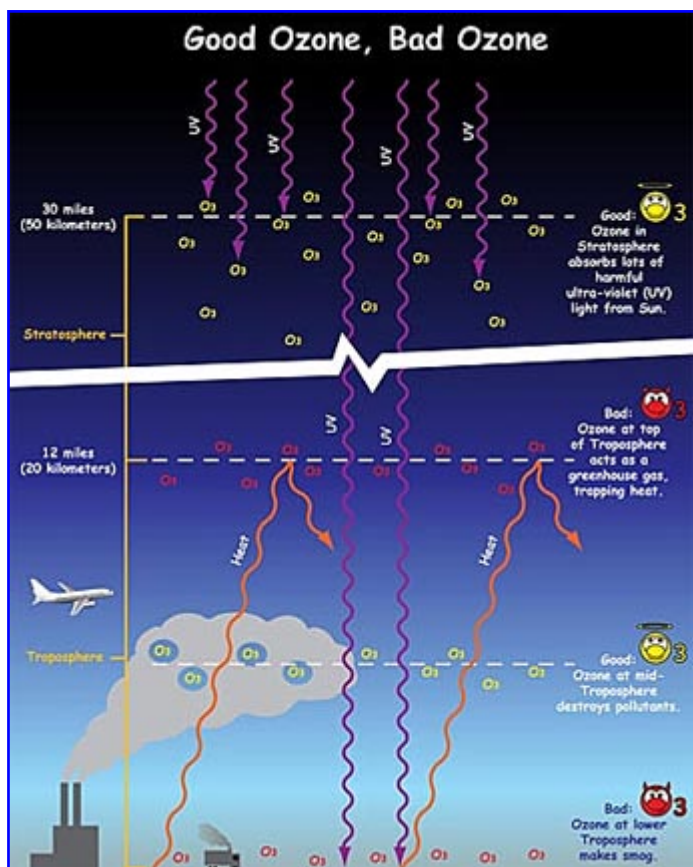
reactive. It is constantly being created and destroyed by photochemical reactions in the atmosphere and by lightning. So its concentration varies from region to region, from season to season, and as the wind blows.

Data from TES show that ozone's heat-trapping effect is greatest in the spring, when intensifying sunlight and warming temperatures fuel the reactions that generate ozone. Most of ozone's contribution to the greenhouse effect occurs within 45 degrees latitude from the equator.

Increasing industrialization, particularly in the developing world, could lead to an increase in mid-altitude ozone, Eldering says. Cars and coal-fired power plants release air pollutants that later react to produce more ozone.

"There's concern that overall background levels are slowly increasing over time," Eldering says. TES will continue to monitor these trends, she says, keeping a careful eye on ozone, the greenhouse gas.

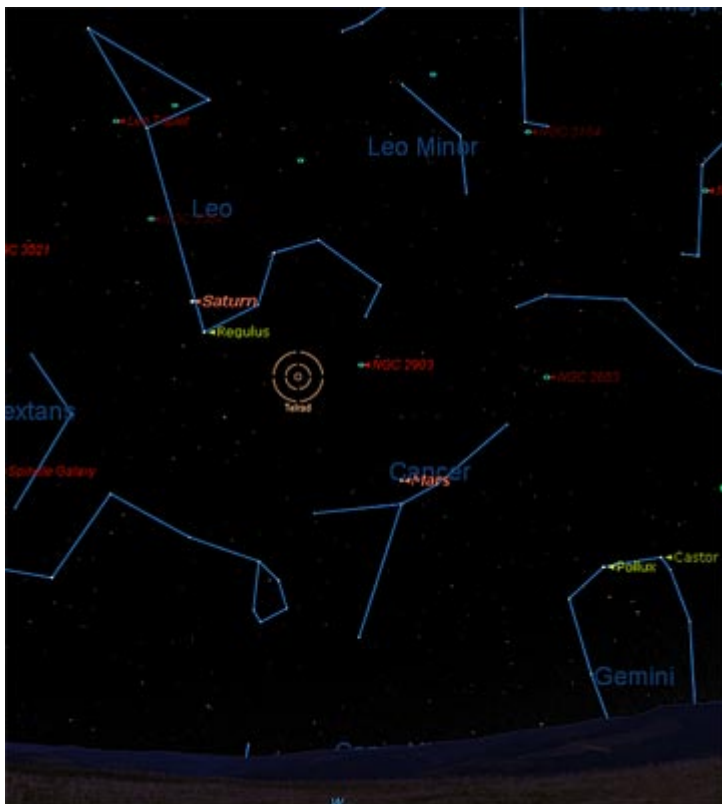
Learn more about TES and the science of ozone at tes.jpl.nasa.gov/. Kids can get a great introduction to good ozone and bad ozone at spaceplace.nasa.gov/en/kids/tes/gases.



AVAC Observing Challenge

By Tom Koonce

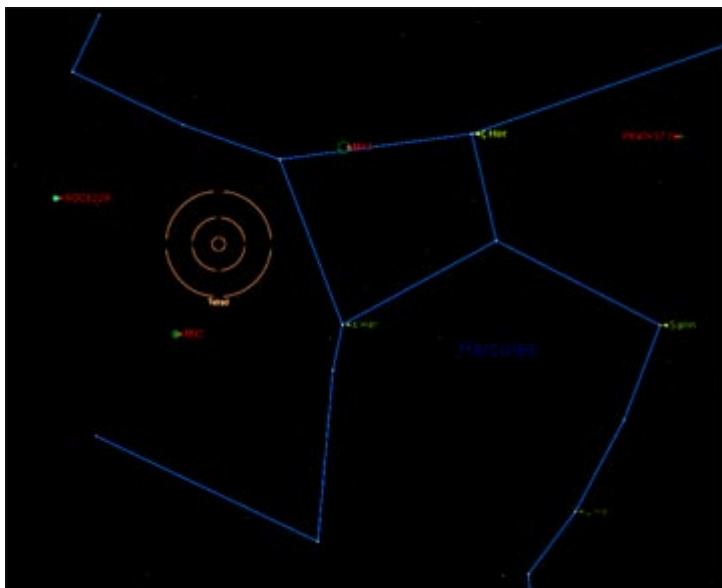
The June dark sky star party is usually the first decent weather of the year for spending most of the night outside. It also has the shortest nights of the entire year, so you won't have to get too tired.



Looking due West at Saturn's location at 10:00 pm PDT

Beginner's Challenge

Named after the Roman god Saturnus, the second largest planet in the Solar System is a worthy target of your observation this month. Saturn is just 2 ½ degrees away from Regulus, the brightest star in the constellation Leo. Leo is 35 degrees above due West at 10:00 pm PDT. This majestic giant will soon be setting into the Sun's evening glow and won't be visible again until Fall in the early morning sky. Catch it while you can!



Looking due West at Hercules, 11:00 pm PDT

Intermediate Challenge

Look a bit north of due East at 11:00 pm PDT and find the constellation of Hercules. Compare the brightness of the spectacular star cluster M13 with that of M92. Now compare the brightness of M92 with that of NGC 6229, 7 degrees northwest of M92. Globular clusters are varied in their number of stars, but the real difference in brightness and angular size between these three is that M13 and M92 are 4 times closer to us than NGC 6229. M13 is just 25,000 light years away while NGC 6229 is on the other side of the galaxy at 100,000 light years away. Now compare NGC 4229 back with M13 for a real appreciation of the beauty and brightness of M13.



Photo Credit: Scott Anttila



Clear Skies!

Tom

Desert Sky Observer

Advanced Challenge

If something seems a bit fishy about the Advanced Observing Challenge this month it's because it has a distinctly aquatic theme. Have your telescopic harpoon at the ready because we're going after NGC 4631 this month, an edge-on spiral galaxy in the constellation Canes Venatici. The entire galaxy has the general appearance of a long whale seen from the side. If you use your imagination a bit, it even has a small spout of water coming out the blowhole in the form of a small elliptical satellite galaxy NGC 4627. The Whale Galaxy has a central portion of unusually intensive star-forming going on. In fact, so many supernovae have exploded in this central region, that they have pushed huge amounts of gas outward from the plane of the Whale, distorting its planar shape. This is a scientifically interesting galaxy as well as one that should be on your public star party list.

Coordinates for NGC 4631, the Whale Galaxy:

RA: 12h 42m 09.0s

Dec: +32 deg 32 min 29 sec

Magnitude: 9.30

Local Transit: 9:11 pm PDT

The Whale Galaxy is located 5 ½ degrees (1 1/3 outer Telrad circles) northwest of the star Gamma Comae Berenices.

(Just for fun: Take a look at the nearby "Hockey Stick" galaxies NGC 4656/ NGC 4657 just ½ of a degree away to the northeast.)

AVAC Members Help Make Space Day Successful

On May 9, Lockheed Martin Corporation sponsored an annual nationwide event called "Space Day." Locally this event was held in Riverside, CA and was supported by the Antelope Valley Astronomy Club as part of our continuing Community Outreach program. The day-long event was supported this year by Club members, Jeff and Charlotte Reichman, Terry and Debora Pedroza, Dick and Kay Hague, and Tom Koonce. The AVAC presented a number of brief presentations entitled, "Rocks From The Sky" which was all about meteorites.

The event was attended by over 1200 elementary school age kids from schools around the Riverside area. Jeff had 'his son' the Alien there - much to the kids delight. During one presentation the kids even screamed in pretend fear as he took the covering off of him, then they all laughed. We had a lot of questions about meteors and meteorites, and thanks to the awesome personal collections of meteorites of Jeff, Dick and Terry, the kids got to see examples of Iron, Stony and Stony-Iron meteorites up close.

Once again the AVAC brought astronomy and science education closer to kids that might not otherwise have the opportunity to experience something as spectacular as Space Day.

Did you know ? ? ?

If the ozone layer were brought down to the Earth's surface, air pressure and temperature conditions would compress the ozone into a layer 2 to 5 mm thick!

Report on RTMC 2008

By Tom Koonce

40th Annual RTMC Astronomy Expo, May 24-26, 2008, Big Bear, California - YMCA Camp Oakes

In attendance were Terry and Debora Pedroza, John and Rose Moore, Karole and Shane Barker, Steve and Kate Trotta and their growing kids, Tom and Heather (soon to be) Varden (Wedding June 14!), Darrell and Nick Bennett, Bill and Jennifer Riedhart, Matt and Sue Leone & their lucky boy Michael, Leon Waller, Duane Lewis, Nathan Marion and parents, and Tom Koonce.

I guess this year the event was held in Big Brrr instead of Big Bear. It was darn COLD. It hailed on Friday and snowed(!) on Friday and Saturday morning. The snow accumulated. It was seriously cloudy the entire weekend. So you'd think we had a rotten time right? No! We had a fantastic time!! As you probably know, the three days of fun are centered on all things astronomy related. There was a great swap meet on Saturday followed by vendor sales from EVERY company involved with astronomy. Because of the weather, we didn't get the attendance turn out that we had during the previous few years, but the folks that stuck it out through the snow, hail and 10 degree cold had a true 'bonding' experience.

This year several club members purchased Ethos eyepieces. What an excellent eyepiece. Come to the next AVAC star party and take a look through one of these for an experience that you will not forget. Outside the TeleVue tent I got to look through a bino-viewer equipped with dual Ethos eyepieces mounted on a TeleVue 101NP refractor. How cool is that?

The fun started off with Michael Leone winning a \$300 Meade backpack telescope. The Trotta's won a few door prizes as did Debora and Duane. I was a 'buyer' this year, coming home with an iOptron GPS GoTo telescope mount and a couple of small items. Darrell got a night vision scope, the Trotta's got their son Chris an 8" Meade Lightbridge, and Terry got a new 'cubby' for his Explor-a-dome so that his computer will fit more conveniently into his dome, plus a complete set of miniature demonstration telescopes. You really need to mark this event on your calendar for next year and come join in the fun!

Unlike previous years I was only able to go to a single talk, the landing of the Phoenix Lander on Mars, live, on Sunday afternoon. You'd think with the weather being so cold that people would have headed inside more, but the opposite was true. We were enjoying the lack of crowds and the very unique experience of having snow at RTMC. People were friendly and good humored about the whole experience. During a brief 15 second break in the clouds, I was able to see a nice solar prominence coming off of the Sun through a binocular pair of 60 mm H-Alpha scopes outside of Howie Glatter's tent.

The event isn't just about the free stuff. If you have ever even thought of any astronomy-related product, it was for sale or trade at RTMC. The First Rule of RTMC was once again confirmed: You Can Never Bring Enough Cash to RTMC. And truthfully, I didn't. I found a great deal on a meteorite that I wanted but when I checked, evidently I had broken the First Rule... Please make your plans to come next year and hang out with us at one of the major astronomy events of the year! By the way, next year RTMC will be held during the New Moon!

RTMC 2008 Photos



Some of our members that didn't read the weather forecast, or just wanted to have some fun despite the forecast.



Tom and Heather filming the crowd just before Saturday's big raffle. People are yelling "Out Front! Out Front!" (It's an RTMC thing)



Matthew staying warm with 3 heat packs and wearing everything we brought



Darrell, Derrick, Terry, and Debora staying warm at 36 degrees awaiting the Raffle



Sue (with delicious popcorn), Matt, Michael, and Nick (and Darrell's head in lower right)

Youth Exploring Astronomy 2008

The 8th Annual Youth Exploring Astronomy Essay Contest Awards Ceremony was held on May 14, 2008 at the Sage Planetarium in Palmdale. This event was hosted by the Antelope Valley Astronomy Club and was sponsored by Lockheed Martin, NASA, Scaled Composite and X-Cor. Also on hand to congratulate the kids were Scaled Composite Engineer Zack Reeder, Captain Bob Redman, Palmdale School District's Melinda Jaggie and former winner Daniel Pincetich. The winning students received prestigious state certificates from Lisa Moulton, a representative from Sharon Runner's office and from Gail Knight, widow of the late Senator Pete Knight. Other prizes included a pair of Celestron binoculars, personalized sweatshirts, blankets and hats, books, NASA and Scaled Composite photos and an astronomy quilted tote bag. The winners also will be attending two field trips as their grand prizes: one to the Griffith Observatory in June and to JPL in July.



Back row: Bob Redman, Debora Pedroza, Tom Koonce, Apeksha Singh, Mark Gross, Katelyn Humphrey, Rebecca Wofford, Joshua Sanchez, Michael Smith, Brian Breckner, Zachary Reeder, Jeff Reichman.

Front row: Gail Knight, Courtney Brown, Alison Malekian, Lyiam Galo, Briana Daniels, Ashley Diaz, Monet Moseley, and Terry Pedroza.

More [photos from the event](#) can be found in the clubs [photo album](#) along with photos from many of our other events.

News and Headlines

Phoenix Lands on Mars!

NASA's Phoenix spacecraft landed in the northern polar region of Mars Sunday to begin three months of examining a site chosen for its likelihood of having frozen water within reach of the lander's robotic arm.

http://science.nasa.gov/headlines/y2008/25may_phoenix2.htm

Temperature Conditions of a Supernova Recreated in UK Laboratory

Scientists are one step closer to attaining the ultimate goal: producing temperatures high enough to sustain fusion, the reaction that powers our Sun and the possible future for global energy production.

<http://www.universetoday.com/2008/05/29/temperature-conditions-of-a-supernova-recreated-in-a-uk-laboratory/>

Spitzer Spies Ghostly Magnetar

If only it were closer to Halloween. NASA's Spitzer Space Telescope has captured an infrared image showing a ghostly ring extending seven light-years across around the corpse of a massive star, called a magnetar.

<http://www.universetoday.com/2008/05/28/spitzer-spies-ghostly-magnetar/>

Astronomer discovers record-breaking asteroid

British amateur astronomer Richard Miles has discovered the fastest rotating natural object known in our solar system.

<http://www.astronomy.com/asy/default.aspx?c=a&id=6997>

New red spot appears on Jupiter

In what's beginning to look like a case of planetary measles, a third red spot has appeared next to its cousins — the Great Red Spot and Red Spot, Jr. — in the turbulent jovian atmosphere.

<http://www.astronomy.com/asy/default.aspx?c=a&id=6969>

Supernova Caught at its Very Start

Once in a while you get so lucky it's spooky. In a typical galaxy like the Milky Way, a supernova explodes once every 50 years on average. So what was the chance that the first moments of a supernova would occur while NASA's Swift X-ray satellite happened to be trained on just the right galaxy?

<http://www.skyandtelescope.com/news/19103349.html>

Comet Boattini: Barely Visible Now, Bright in July?

Comet C/2007 W1 (Boattini) has reached 6th magnitude, brighter than expected. In late May it should be visible from dark sites in the southern US and points south. When it reappears in July, will it be naked-eye?

<http://www.skyandtelescope.com/community/skyblog/observingblog/19012569.html>

Microsoft Launches Astronomy Software

Software giant Microsoft is now reaching for the stars with the release of its World Wide Telescope (WWT). This mega-program caught some media buzz back in February when developers made a public showing at a tech conference. At long last everyone can give it a spin.

<http://www.skyandtelescope.com/news/18859539.html>

A.V.A.C. Membership Information

Membership in the Antelope Valley Astronomy Club is open to any individual.

The Club has three categories of membership.

- Family membership at \$30.00 per year.
- Individual membership at \$25.00 per year.
- Junior membership at \$15.00 per year.

Membership entitles you to...

- Desert Sky Observer—monthly newsletter.
- The Reflector—the quarterly publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club telescopes, binoculars, camera, books, videos and other items.

The Desert Sky Observer is available as a separate publication to individuals at a cost of \$10.00 per year. Subscription to the Desert Sky Observer does not entitle the subscriber to membership in the Antelope Valley Astronomy Club and its associated privileges.

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Woodland Hills Camera: 5348 Topanga Canyon Blvd., Woodland Hills. 888-427-8766. www.telescopes.net

Astro-tom.com: Tom is dedicated to amateur astronomy. <http://www.astro-tom.com>

High Desert Broadcasting: General Manager, Vicky Connors (661) 947-3107; they assist us in advertising our Club.

ActonAstro: Club Web space provided by <http://www.actonastro.com>

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