

# The High Desert Observer

The Bulletin of the Astronomical Society of Las Cruces

June, 2009

## President's Message

Wow, the year is half over; where has it gone? Things have slowed a bit for us with the end of the school year. It seems it is now vacation time and people are doing that annual ritual of leaving town and spending time with the family.

We do have a few things going on this month. We have a Star Party for a group of Scouts on June 12. Let's help them get their astronomy badges or whatever they get these days. We have also been invited to join TAAS, the Albuquerque Astronomy Club for a 2 day joint star party in the Datil Wells area on June 19<sup>th</sup> and 20<sup>th</sup>. My wife and I are planning on attending, weather permitting, and I have heard some rumblings that others may also make the trip. According to the light pollution map this is one of the darkest skies in the country, probably equal to some of the darkest skies in the world. This is also a great opportunity to meet and get to know some of the TAAS members. There is information on the Yahoo group about accommodations and activities. It is the middle of nowhere so don't expect any Broadway plays. There is a campground and a motel near by. Hope to see you there.

Rich has been working on finding out what we can do about the horrible light pollution perpetrator that has disrupted our Upham dark sky site. A bright flashing light placed on top of a radio tower to the west of our normal dark sky site. He is making progress. Meanwhile, Kirby has been scouting possible new dark sky sites for us to use. More to come as it develops.

WSSP White Sands Star Party is coming up and we, the ASLC, have agreed to provide the workshop speakers. So if you have an area of interest you would like to share, step up and get your name on the schedule. Let's continue to provide quality presentations, as we have in the past.

Chas Miller, a graduate student at NMSU, will be speaking at our June meeting. He is involved in several projects and hasn't decided for sure which he will be discussing. As soon as he does, we will get that information on the website. On the subject of speakers, we need to fill out the calendar of speakers through the end of the year. When I accepted this position I stated I would need help with this as I personally know few people who are capable of providing the quality of presentation you have become accustomed to. We have several members who could share their knowledge to the benefit of the rest of us and I am sure you all know people outside of our club who would bring information of interest to our members. Please contact me with any recommendations you may have.

Finally I would like to thank Chuck and Bernie for their parts in a smooth transition of the Public Outreach Chair Person. Chuck has done an outstanding job for the past year and a half. Moving forward Bernie has agreed to take on the responsibilities of the position. I have the utmost confidence in Bernie's ability and dedication and would like to welcome him to this very important and public position. I believe the ASLC public outreach coordination efforts are in good hands and the tradition of outstanding public service will live on. My personal thanks go out to both of you.

Your President and humble servant, Jerry Gaber



The Astronomical Society of Las Cruces (ASLC) is dedicated to expanding members and public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, and provides opportunities to work on club and public educational projects. Members receive *The High Desert Observer*, our monthly newsletter, membership in the Astronomical League, including AL's quarterly *A.L. Reflector*. Club dues are \$35 per year. Those opting to receive the ASLC newsletter electronically, receive a \$5 membership discount. Send dues, payable to ASLC with an application form or a note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004.

ASLC members are entitled to a \$10 discount on subscriptions to *Sky and Telescope* magazine.

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## Next Meeting

The next monthly meeting will be held June 26th at 7:30 pm in the usual place (Main Campus of the Dona Ana Community College, room 77), speaker Chas Miller from NMSU. The topic will be "Moons! What satellites can tell us about the history and nature of our solar system."

The Imaging Group will meet at 7:00 pm.

## Events

The next monthly dark sky viewing night will be held on Saturday, June 20th at the Upham site. The next moon gaze will be held at International Delights Cafe on Sat. June 27th. For these and other events, please see the ASLC website for further information:

<http://www.aslc-nm.org>.

## July Issue of the *HDO*

A note to all members, we need more contributors ! Sharpen your writing skills, share your knowledge and help bolster our newsletter! Articles for the July issue should be sent to Tony Gondola by the 10th of the month. Text should be sent as email ([acgna@comcast.net](mailto:acgna@comcast.net)) or as an attached Microsoft Word document. Images should be sent in jpg format.

If you have any questions about submitting materials for publication in the *HDO*, please don't hesitate to contact me at 571-5118 or via email. Thanks in advance! Tony Gondola, Editor, ASLC Newsletter

## May 2009 Meeting Minutes

**Call to Order:** Jerry Gaber, President, Astronomical Society of Las Cruces (ASLC), called the meeting to order at 7:35 pm., 22 May 2009, Rm. 77, Dona Ana Community College.

**President's Comments:** Jerry Gaber welcomed the group and noted the visitors present. Howard and Maya Brewington were visiting.

**Secretary's Report:** There were no minutes recorded at the April 2009 meeting (Secretary absent). There was not an additional secretary's report.

**Treasurer's Report:** There was no Treasurer's report (Treasurer absent because of illness). Dues or other payments could be submitted to Bert Stevens who would forward them to the Treasurer. There was no additional treasurer's report.

### Committee Reports

**Observatory Committee:** There was no progress to report.

**Club Web Page:** Rich Richins, Club webmaster, reported that the web site receives numerous hits. He requested that imagers in the Club submit selections of their recent work, including a brief (200 words or so) description summary, for display on the site as an Image of the Week.

**Astronomy Day 2009:** This year's events on 02 May were not canceled because of the current swine flu outbreak. Solarscopes were in use at the downtown Farmers' Market and International Delights Café with good public attendance. The evening event at the Mesilla Valley Bosque State Park (MVBSP) was less well attended because of windy, cloudy weather. However, about thirty people did attend and there was a good response from both park personnel and the public. Live music performances and snacks were available. The MVBSP would like the Club to supply a full-blown monthly program in the future including astro-related story telling. This is something the Club will need to work on. Dave Dockery volunteered to present the first pre-meeting demonstration on 26 June and Steve Barkes will do the same on 24 July.

**Chihuahua Desert Nature Park (CDNP) Star Party:** This event was held on 16 May but was not completely successful. The scheduled storyteller was not present. Club members set up telescopes, but viewing conditions were very poor. The scorpion hunters had more success.

There were no additional committee reports.

### Old Business:

1. Club-logo Apparel – Ron Kramer was not present to provide an update.
2. Meade Solarscope – No update was available (see Treasure's Report above). Steve Barkes will continue research into other vendors and brands.

There was no additional old business discussed.

## **New Business:**

1. Star Parties – The next scheduled star party is for Glen Westfall's Cub Scout pack on 12 June at Veterans' Park.
2. Public Outreach Coordinator – Chuck Sterling, although doing an excellent job, must step down for family reasons. All the information and contacts for previous events are stored on a CD available to the member(s) that volunteers to take over. If there are no volunteers, the president stated that he would appoint a replacement.
3. White Sands Star Party (WSSP) 2009 – WSSP 2009 is scheduled for 11-12 September. The Alamogordo club has asked that the Club again provide mini-workshops and seminars during the day on Saturday. Start planning your presentation now so the president can provide a list to the other sponsors.
4. Astronomical League (AL) elections – As a member club of the AL, the Club has the opportunity to vote for AL officers. Bert Stevens presented the candidates for Club members' consideration. June Haley is running unopposed for AL Treasurer. Steve Barkes moved that the candidate be accepted by the Club and Jerry Gaber seconded. There was no discussion and the motion carried. Rob Burgess and William Bogardus are running for AL Secretary. William Bogardus was selected by the members present by a show of hands. Bert will submit the Club's results to the AL.
5. Rocky Mountain Star Stare, Grand Canyon Star Party, Carlsbad Caverns Star Party – All occurring in June. Check with Nils Allen for more information.

There was no additional new business for discussion.

Rich Richins offered a motion to adjourn and Ron Teissere seconded. The motion passed and the business portion of the meeting was adjourned at 8:00 pm.

## **Announcements:**

Texas Star Party (TSP) 2009 – Quite a bit of astronomy equipment was hauled to TSP by Club members and then sold to other Club members. To save the time and effort in the future, why not start doing the same at the monthly meetings?

Rich Richins – Meade 201 auto-guider, price negotiable.

Jerry Gaber – 12" Orion telescope. \$650 on Astro-Mart, \$550 to Club members.

Ray Husband – 14" CGE with multiple accessories and support equipment. \$8000 for the entire set-up but may be willing to breakup.

Friend – LX200 GPS 7" Mustoff-Cassegrain, fairly new for \$1295.

Rich suggested that he may add a For Sale page to the web site and a Classifieds could be added to the HDO.

There were no additional announcements made.

### **Awards:**

The Messier Marathon 2009 was held in March. Certificates of Achievement were presented to Dave Dockery (109 objects), Steve Barkes (110 objects), and Rich Richins (110 objects, imaged). Rich's collage of images was voted People's Choice at TSP 2009. Congratulations to all.

### **Presentation:**

This month's program was a joint presentation by TSP 2009 attendees. A series of images from the event were presented and commented on by the attendees and Club members. These included daytime presentations, an English tea for spouses and attendees, and astro images collected during the week. A good time was had by all.

This presentation was not recorded for rebroadcast on the Internet. Other meeting presentations can be accessed on the web at <http://www.aicsresearch.com/lectures/aslcnm/>.

The May 2009 monthly meeting concluded at 9:00 pm.

Respectfully submitted by John McCullough, ASLC Secretary

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## **A Call for Donations**



Several people expressed an interest in donating to the Clyde Tombaugh Endowed Scholar's Fund. Vince Dovydaitis has volunteered to help out, and will collect any and all donations during the June ASLC meeting. If a donor donates \$100, he/she will receive a signed poster (original signatures) by Clyde and Jim Christie (discoverer of Pluto's moon Charon). The poster includes copies of the original Pluto and Charon discovery plates. There are only a few of these original signature posters left, this is a good way to get a real collector's item and help out a good cause.

## The Cool Chemistry of Alien Life



*Do alien planets around other stars have the right ingredients for a pre-biotic soup?*

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it.

Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars. It's the first time any chemical has been detected around one of these small, cool stars. However, scientists are more intrigued by what was *not* there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it.

"The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars," says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland.

That's because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. "You cannot make adenine in another way," Pascucci explains. "You need hydrogen cyanide."

M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons can break this bond, but the lower-energy photons from M-dwarf stars cannot.

"Other nitrogen-bearing molecules are going to be affected by this same chemistry," Pascucci says, possibly including the precursors to amino acids and thus proteins.

To search for HCN, Pascucci's team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them.

HCN's distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars.

Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can't yet draw us a picture of alien life forms, but it's beginning to tell us what they could—and could not—be made of. "That's pretty wonderful, too," says Pascucci.

For news of other discoveries based on Spitzer data, visit [www.spitzer.caltech.edu](http://www.spitzer.caltech.edu). Kids can learn Spitzer astronomy words and concepts by playing the Spitzer "Sign Here!" game at [spaceplace.nasa.gov/en/kids/spitzer/signs](http://spaceplace.nasa.gov/en/kids/spitzer/signs).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## In Search of a lightweight Travel Mount

By George Hatfield

We often take an extended RV trip during the summer and in our travels we've visited some very dark sky areas. I have often thought it would be fun to be able to image under such pristine conditions. I've never taken my imaging equipment with me on these trips because it takes up way too much storage space in our travel trailer and truck. Besides, hauling around a 50-pound mount (Takahashi NJP) isn't my idea of fun. The tripod and counterweights would probably add another 50 lbs. So, I began looking for something lighter and smaller that could be used for wide field imaging (a la Dave Dockery) using the Canon XSi that I use for other photography on such trips.

My criteria for a travel mount were as follows: The mount head should be under 10 lbs and have accurate enough tracking to allow for up to 5-minute exposures with good star shape at an image scale of not less than 5 arcsec/pixel. I also wanted an equatorial mount since I didn't want to deal with the wedge that would be required with an Alt/Az mount. Besides, most mounts that could provide the accurate tracking I needed would be equatorial mounts. Also, guiding was not needed. I didn't want to carry another camera and scope along for guiding. Of course, cost was also a factor. I didn't want to spend more than \$1000.



Astrotrac mount

The Losmandy GM8 certainly came to mind as I started this search. It is a very good mount and is widely available on the used market. I have seen several on Astromart for less than \$1500 (non-GoTo). As GEM mounts go, it is fairly lightweight, but it still weighs a little over 20 lbs and with the tripod and counter weight(s) the total weight would probably be around 50 lbs. Too much for me.

A lightweight tracking mount that is actually designed for travel is the Astrotrac (not to be confused with the Orion Astrotrack, a completely different product). This is a relatively new mount and certainly fits the bill as far as weight is concerned. It only weighs about 2.5 lbs and supposedly has a capacity of about 30 lbs. Here is a quote from Kendrick Astro (<http://www.kendrickastro.com>), one of several sites selling the Astrotrac: "Ever wanted to get out under the stars and take some long exposure sky images with your Digital SLR, or observe with a small telescope, but didn't feel like lugging heavy or awkward equipment around and spending ages setting up? Concerned about airline luggage restrictions? Are you looking for the ultimate in lightweight, high quality, highly accurate, portable tracking? If the answer is yes,

then the AstroTrac TT320X is designed with you in mind." This mount actually comes in two models, the 320 and the 320X, the latter being a new and improved model. This is not a GEM. It looks more like a boomerang! The Astrotrac runs for about 2 hours before it needs to be reset. There is a lot of information on the web about it, most of which is fairly positive. The main problem seems to be getting an accurate polar alignment and the alignment scope appears to be the Achilles heel of this mount. One user claimed to have adopted a Losmandy polar scope to the Astrotrac with excellent results. The cost is about \$800 for the mount, but the polar alignment scope would add another \$150 to the cost. Also it needs to be mounted on a good quality ball mount tripod which could add another \$200 to the cost.



Takahashi Sky Patrol II

Another lightweight mount, designed for travel, is the Takahashi Teegul Sky Patrol III. This mount is the latest in a series of lightweight mounts that Takahashi has made over the years. It is a bit hard to track the development of these mounts due to the relative lack of information on the web, but I think the first one was the P2 mount, which was followed by the P2S, Space Boy, P2Z, Sky Patrol I, Sky Patrol II and the latest, the Sky Patrol III.

The Sky Patrol mounts are very light weight (about 8 lbs) and will carry at least twice their weight in load. An optional counter weight shaft and weight can be added to increase the capacity. In a review published in S&T in August 2000, the author loaded over 14 lbs of gear on this mount with good results. The mount only has a RA motor and with a good polar alignment, tracking is good enough for multi-minute exposures with short focal length camera lenses (e.g., 50 or 100 mm). Like any other piece of Takahashi equipment, the cost

is relatively high. The basic mount is around \$1000 new, but the wedge, counterweight kit, and polar finder scope would add at least another \$400. The polar scope is not built in. It attaches to the side of the mount. This makes it a bit more difficult to obtain an accurate alignment. I have not seen any of these on Astromart.

The Takahashi P2Z is also a current mount and probably provides the most accurate tracking of any of the lightweight Tak mounts. This is a more substantial mount than the Sky Patrol models. And unlike the Sky Patrol, the P2Z is a typical GEM in design. The P2Z weighs about 15 lbs (twice as much as the Sky Patrol) and has a capacity of about 15 lbs, but could probably take much more. The P2Z is often called the “baby NJP” since both mounts have the same RA worm gear which has a reputation for providing very accurate tracking. As with the Sky Patrol, this mounts only has an RA motor. With a good polar alignment, it provides excellent imaging results at image scales above 5arcsec/pixel. This mount has a built in, illuminated, polar alignment scope, again much like the one supplied with the much larger NJP mount. The P2Z is probably the best small mount on the market from the standpoint of tracking accuracy, but its cost (about \$1500 used, \$2100 new) is a bit prohibitive for me especially since it would mainly be used for travel. The P2 and P2S are earlier models with a similar configuration, but they don’t have the NJP worm gear. They are relatively rare on the used market. Actually, the P2 was one of the original mounts made by Takahashi and was first introduced in 1971.



Takahashi P2Z mount



Takahashi Space Boy mount

The Space Boy came out after the P2S, but before the P2Z and from its configuration it seems to be a precursor to the Sky Patrol mounts. Like the Sky Patrol, the Space Boy is not your typical GEM. Its modular design allows it to be used in several configurations. For example, the mount quickly converts from its EQ orientation to an Atl/Az mount complete with slow motion manual controls on both axes. The RA head can also be used by itself on a tripod which provides a very compact and ultra small travel mount. The Space Boy weighs about the same as the Sky Patrol mounts. The big advantage over the Sky Patrol models is that the Space Boy does have a built-in illuminated polar scope, much like the P2Z. It only has an RA motor and tracking is said to be generally good enough for large image scale astrophotography. A good polar alignment is, of course, the key to good results.

Yet another light weight travel mount is the Kenko Skymemo single-axis mount available from Hutech (<http://www.sciencecenter.net/hutech/>). Again, this is not your usual GEM. Due to its dual arm configuration, it can carry two cameras at once, or one with a counterweight. The capacity of this mount is about 11 lbs. It tracks in RA and any DEC adjustment must be though the head on the tripod or on the camera. The polar scope is built in and it comes with a dedicated mini-tripod. There is a good review of the mount on Cloudy Nights and it points out some of the mount's strengths and shortcomings. Overall, the tracking was quite good, but trying to get the mount polar aligned with the short tripod was a challenge. Some sort of adapter would be needed to use another tripod with longer legs. One feature not seen with the other mounts mentioned here (other than the GM8) is that a DEC motor is available as an option which allows guiding.



Kenko Skymemo mount

So what did I buy? Cost was not a big differentiating factor. Most of the mounts listed above cost around \$1000. The Tak P2Z is about twice that amount, but is probably the best mount of the group. Like so many other things in this hobby, more money is often the solution to most problems! I was certainly interested in the Astrotrac because of its compactness and lightweight, but I had concerns about the difficulty of getting a good polar alignment. The Hutech Kenko mount also looked interesting, but again, it had polar alignment issues. So, I ended up buying a used Space Boy mount on Astromart. Part of my decision was based on the fact that it was available used and the others were not at the time.



Thus far I have not had a lot of opportunity to test the mount. The moon has either been out or the sky has been covered with clouds. One nice feature of the Space Boy is that it comes with its own compact tripod. The illuminated polar alignment scope seems to work very well. I was able to take some 4-minute 200 mm telephoto images with my Canon XSi and they were not bad, especially if I secured the lens as shown. There was some elongation in RA, but it was an acceptable amount for wide-field images. I will know more about its performance when we get back from our summer trip. At the very least, the mount will provide a good platform for solar imaging and viewing.

Takahashi Space Boy mount with 200 mm lens

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## July 20<sup>th</sup> 1969: Where Were You?

By Tony Gondola

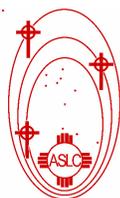
Forty years ago next month, the first moon landing and moonwalk took place. For anyone who experienced it, it's a day they will never forget. For me it was the constant worry of would they make it? Would the long and fragile daisy chain of technical events that had to go just right, remain intact? Would man and machine be up to the challenge? It's easy to forget with the passage of time, but back then, no one really knew. The world collectively held its breath as they neared the surface. My memory of that event is still as clear as if it were yesterday, A hazy, humid, New England July afternoon, sitting in the screened porch, watching the animation of the LEM nearing the surface followed by the sharp sense of relief at the words "Tranquility Base here, the Eagle has landed." As those words came down through the cold, dark of space and into billions of TVs and radios the world over, the people of earth, for one short moment, were one. It was no longer about race, borders and conflict but it was about the bravery of three men, the audacity of a free country and what could be achieved if the will was there. Something worth remembering as we face the new challenges in the global society of the 21<sup>st</sup> century.



Looking back at the LEM at the end of the Apollo 11 moonwalk (NASA)

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for Over 50 Years

