



# Sacnews

Issue 283

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**SAC Officers**

**President:** Jack Jones  
602-944-5488  
Spicastar@mindspring.com

**Vice President:** Steve Coe  
scoeandlross@excite.com

**Treasurer:** Peggy Kain  
Pegsi@xroads.com

**Secretary:** Jennifer Keller  
Kellerjt@WellsFargo.com

**Properties:** Adam Sunshine  
623-780-1386

**Public Events:**  
Adam Sunshine  
623-780-1386  
Asunshine@netzone.com

**Deep Sky Group:** A. J. Crayon  
602-938-3277  
Acrayon@primenet.com

**SACNEWS Editor:**  
Rick Tejera, 623-572-0713  
SaguaroAstro@aol.com

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## FILTER PERFORMANCE COMPARISONS FOR SOME COMMON NEBULAE

**Project Summary Version**  
**By David Knisely, Prairie Astronomy Club**

The following is a summary report of visual observations of emission and some larger planetary nebulae, comparing the performance of various filters intended for such objects. The instrument used was a 10 inch f/5.6 Newtonian, working at 52x, 59x, 70x, 101x, and 141x, as well as a few unaided-eye observations using the filters hand-held and looking up at the sky (for Rosette, North America, California, and Barnard's Loop). The filters used were Lumicon's DEEP-SKY, UHC, OIII, and H-Beta, and were usually all mounted in a modified Lumicon multi-filter adapter. This allowed rapid comparisons between filters, thus avoiding some of the judgment problems caused by the time needed to change filters or reports from inaccurate single-observation anecdotal accounts. Observing was done from a dark-sky site (visual naked-eye limit 6.5 to 7.0). For detailed descriptions of the objects, see any of the various observing handbooks.

Two methods were used for rating filter performance. In the first method, each filter was given a 0-5 point "Score" performance ranking behind it for each object observed:

- "Scoring" Legend
- (5): Very Large Improvement over no filter.
  - (4): Large Improvement over no filter.
  - (3): Moderate Improvement over no filter.
  - (2): Slight Improvement over no filter.
  - (1): No improvement or fainter than no filter.
  - (0): Much worse than no filter (object

marginal or not visible).

Example: OIII (4) means the OIII gave a large improvement in the view over non-filter use and contributes 4 points to its overall score total. Visual characteristics such as overall surface brightness, area of nebulosity observed, and contrast of detail were used to judge how well a filter improved the view. However, since this judgment contains some of the personal preferences of the observer, the exact results may be somewhat subjective in the long run. Different observers might have slightly different ratings of various filters on various objects, so small differences in judgments are to be expected. Still, the scoring does on average give a reasonable idea of overall filter performance. To gauge overall filter performance, the scores for each object were added up and averaged.

\*\*\* SCORING TOTALS FOR NEBULAE SO FAR SURVEYED

\*\*\*

(81 objects as of June 8th, 2000)

UHC	284 points, average rating 3.51
OIII	257 points, average rating 3.17
DEEP-SKY	178 points, average rating 2.20
H-BETA	112 points, average rating 1.38

(Continued on page 2)

(Continued from page 1)

The second method is a somewhat subjective recommendation for the best filter to use on the given object, based mainly on a personal judgment, and thus is more a matter of opinion and taste. The nebular brightness, total area shown, contrast of details, and overall view are all weighted to give an opinion of which filter will work well for which object. Other observers would doubtless have somewhat differing views on recommendations for the specific objects that were observed. When objects were best seen in two filters (i.e.: nearly equal or beneficial performance), both filters would be given the recommendation for the object, with the one yielding the better overall view being listed first and the "close second" best listed next to it.

#### RECOMMENDATION RANKING SUMMARY

UHC best on 34 nebulae, close second best on 39 nebulae.

TOTAL 1st and 2nd RECOMMENDATIONS for UHC: 73 objects.

OIII best on 32 nebulae (biased by the inclusion of some planetary nebulae), close second best on 19 nebulae. \*NOT\* recommended on 7 nebulae.

TOTAL 1st and 2nd RECOMMENDATIONS for (OIII): 51 objects

H-BETA best on 10 nebulae, second best on 2 nebulae. \*NOT\* recommended on 36 nebulae!

TOTAL 1st and 2nd RECOMMENDATIONS for H-Beta: 12 objects.

DEEP-SKY best on 7 nebulae, second best on 2 nebulae. (Provided at least some slight benefit on most objects observed.)

TOTAL 1st and 2nd RECOMMENDATIONS for DEEP-SKY: 9 objects.

Below is a sample entry from the survey log:

**NORTH AMERICAN NEBULA NGC 7000 (diffuse nebula in Cygnus).**

**DEEP-SKY:** (2) Nebular overall form is easier to see than without a filter, but only slightly.

**UHC:** (5) Very noticeable improvement in contrast over

the DEEP-SKY filter, with both "Florida" and "Mexico" now quite easy to see.

**OIII:** (4) Some improvement in contrast and detail, with brighter "spine" on east side of "Mexico" and some faint dark detail being easy to see, but nebula is somewhat fainter than in UHC.

**H-BETA:** (3) Detail is similar to OIII, but nebulosity is fainter than OIII.

**RECOMMENDATIONS FOR NGC 7000:** UHC/OIII but both H-BETA/Deep-Sky are useful on the object (UHC was brighter, but OIII shows more contrast).

#### GENERAL TRENDS IN RESULTS

So far (with a few notable exceptions), the numbers show the UHC and OIII are the filters of choice for viewing nebulae, and to some degree supports the general recommendation that if only one filter can be purchased, it should be the UHC. In performance characteristics, the UHC filter tends to reveal slightly larger and/or brighter area of nebulosity with many emission nebulae than the OIII does, while the OIII filter will often yield somewhat more contrast and dark detail on a given object. The OIII also tended to be a bit better for "blinking" small planetary nebulae than the UHC was. The H-beta filter often hurt the view of many planetaries, although one object, NGC 40 was slightly better in the H-Beta than it was in the OIII (NGC 40 was still best in the UHC overall). The inclusion of some planetary nebulae may have slightly inflated the score of the OIII filter, since in general, the OIII often performs best on those objects. The H-Beta tended to be most useful on a more limited number of objects (only about 15% of the objects surveyed), than either the UHC or the OIII filters. This may be due at least in part to the fact that many of the so-called "H-beta Objects", are low excitation very faint nebulae, and thus are near or beyond the visual limits of my ten-inch. The Deep-Sky filter almost always produced at least some gain in contrast for nearly every object observed (especially when some skyglow was present), but rarely produced a spectacular improvement of the view. Filter comparison results for each of the objects observed are available in a long version of this report.

## Pima County Passes Strict Light Law

### Wayne P. Johnson

The Pima County Board of Supervisors just voted 4-1 for the revised Outdoor Lighting Code. It sets a relatively strict cap in terms of lumens per acre for any new development, and requires full cut-off lighting for all but the internally lit signs. Kitt Peak, Mt. Hopkins, and Mt. Lemmon have explicit protection within limited radii around their summits, with restriction that will sharply limit outdoor commercial lighting.

The Supervisors listened to 2-1/2 hours of comments from the community. The convenience stores and gas stations came on very strong about the threat posed by controlled lighting to safety and security of the public and their employees. They were arguing for no lumen caps or ~1,000,000 lumen/acre limit, which produces about 4x the fluorescent illumination of our offices.

There will be a 90-day study period that involves further work and more involvement of law enforcement agencies to address safety concerns. The City of Tucson has been waiting for the County to act; they are likely to enact the same ordinance soon.

Astronomers owe real gratitude to Chairman Sharon Bronson, and Supervisors Ray Carroll and Raul Grijalva for strong support. Dan Eckstrom voted in favor and Mike Boyd was opposed.

Richard Green

*(Ed. Note: This article was Posted by Wayne Johnson (Mr. Galaxy) on Az-Observing. I am reprinting it here for those who do not have access to the internet).*

## Astronomy 101

### Are We There Yet??

#### By Rick Tejera

Just when I think I'm not going to think of anything to write about, BAM, Inspiration hits. This month's tid-bits of my mind come to you courtesy of a discussion on the AZ-Observing E-mail list. What started out as "Who wants to go to eagle Eye this weekend turned into a discussion on which of our sites are best. For sake of discussion the conversation left out Flat Iron as we were talking about the more distant sites; Sentinel, Eagle Eye and the new Cherry Rd Site.

First, lets look at what makes a good site in terms of distance. I had previously written an article regarding the rating of sites and due to distance even Buckeye Hills scored 0 in the distance category. Given that bit of equal footing, what will make one site more favorable than another? First you must consider where in the sky your targets are and then consider where is there light. The ideal spot would have any light domes behind your targets. It would seem sill to drive an 1 1/2 hours and then have to look back toward the light you just left. In my opinion the best sites are west of any major light domes. Why? Simple, if you head west, any object that is in the light dome will be to the east. Give it a few hours and it'll be well out of the light and on the meridian, well placed for viewing. Likewise for objects to the north. At the very worst, if the object doesn't rise out of sky glow tonight, wait a few months and it'll be well above the horizon all night. You get the idea.

As for the sites we use, it was pointed out that the new Cherry Road site up near Dewey, while having a higher elevation, looks due south to Aurora Phoenicia. I haven't had a chance to observe there but the light dome looked pretty large. Grated, it was probably "enhanced by the clouds doing their best reflection nebula imitation, but none the less it's there. Prescott & Prescott Valley contribute their share of light to the west. My guess is if your observing northerly objects, this site would be fine, ditto stuff you can catch right after rising in the east. Sagittarius and Scorpius, maybe not.

Eagle Eye on the other hand has the Big Horn Mountains blocking off Aurora Phoenicia to the east and very good southern and western horizons. Really not much to complain about. There is the matter that the area may soon be used by hunters and other outdoors types so accessibility may become an issue.

Sentinel is by far the longest drive but in terms of distance from the center of Phoenix, it is actually only about 5 miles further than Eagle Eye (see map page 9). The best asset is Aurora Phoenicia is in the northeast and it puts you farthest south, good to bag those southerly objects like Omega Centauri.

So where to go? Once again, for my money, Eagle Eye is the best compromise between driving distance and

# Fuzzy Spot, Delphinus

## By Ken Reeves

Delphinus is a small but very prominent constellation in the autumn sky. The tight "diamond with a tail" shape almost looks like a loose cluster, but in fact, it is not. The stars range from 100 to 950 light years in distance.

The pattern has been seen as many different animals. To the Greeks it was a Dolphin, the Babylonians a Pig, and to the Bedouin of the Arabian Desert, a Riding Camel.

Although the stars are conspicuous, the constellation is poor in deep sky objects. The Night Sky Observer's Guide (Kepple and Sanner) only list 14 objects, there are 3 Herschel 400 objects, and no Messier or SAC 110 Best of the NCG objects. So let's hope for good clear, steady, and dark skies when observing Delphinus.

**NGC 6891 (20h15.2 +12 42):** We start out with 2 planetary nebulae. This one is quite small, pretty bright, slightly bluish, and has a star to the W. The UHC filter doesn't do much. It was seen as a fairly even glow with a slight halo. A very windy night when I observed this object, it might be better in steadier conditions.

**NGC 6905 (20h22.4 +20 06):** The second planetary is probably the best object in the constellation. Known as the Blue Flash Nebula, I saw it as pretty big for a planetary, somewhat bright, possibly elongated N/S but this may be due to fairly bright stars on the N, S, and E sides. It is not very well defined, no sharp edges, with no real middle, it's pretty much a blob that fades out. The E side darkens up pretty fast while on the W, it fades more evenly and gradually. The size, shape, and star pattern make this a nice object.

**NGC 6934 (20h34.2 +07 24):** Now we leave nebulous objects and enter a multiple star object. At 100X, this globular cluster is somewhat small, pretty bright with a much brighter middle, round, no stars resolved, and barely granular. There is a star immediately to W. Increasing the power to 140X, granularity is definitely seen and the middle is possibly elongated N/S.

**NGC 6956 (20h44.0 +12 30):** Moving out of our Milky Way, we head to one of the faint galaxies in Delphinus. At 140X, it was very uncertain, seen as a stellar spot

with halo around it and elongated E/W. It is very faint with a stellar nucleus or a possibly a foreground star, and an extremely faint halo. Using averted vision makes the object stand out a little. There is a group of stars to the N.

**NGC 7006 (21h01.5 +16 11):** Coming back into the Milky Way, we arrive at another globular cluster. 7006 is a very distant cluster, about 185,000 light years from Earth and 150,000 light years from the center of the galaxy. I saw it at 70X as somewhat bright, fairly small, round, and a little brighter in middle. I could see no granularity at any power.

**PK 59-18.1 (20h50.1 +13 34):** The last deep sky object is another planetary nebula, although a very faint one. In the 20" scope at 160X using the O-III filter, I saw it as very faint, very large, and round, basically a very slight brightening in the background. There are 5 stars involved, and another star to W, which interferes with viewing this object. The object was unseen without the filter.

Since most of the deep sky objects are toughies, I decided to include a couple of double stars. These observations are from The Night Sky Observer's Guide by George Robert Kepple and Glen W. Sanner.

**Kappa (20h39.1 +10 05):** In a 4 to 6" scope at 100x: "Kappa Delphini is a pretty triple: the closer components appear yellow and the more distant member reddish."

**Gamma (20h46.7 +16 07):** In a 4 to 6" scope at 100x: "Gamma Delphini has a yellow primary with a green companion, the latter a rather rare stellar color. Some observers however see the companion as bluish. The spectral type suggests a true color for the companion of yellow-white: Gamma Delphini B probably appears greenish of bluish only by contrast with its deeply yellow primary."

**Herschel 400 Objects**  
**6905, 6934, 7006**  
**SAC's 110 Best of the NGC Objects**  
**none**

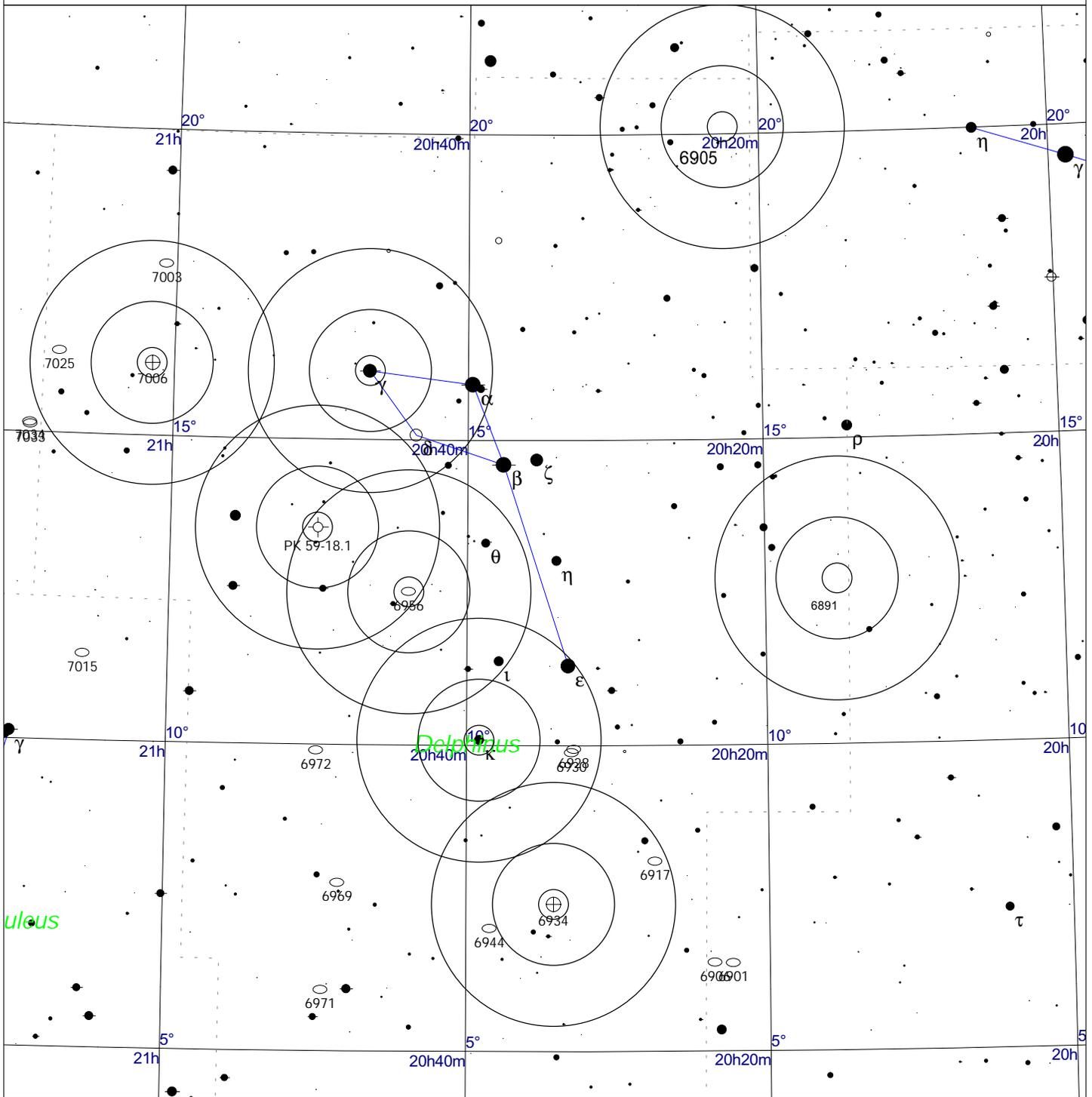
*(Continued from page 3)*

observability. Does that mean I think the other sites aren't worth the drive? Not at all. Don't forget to factor in the weather. Sentinel may be clear while Cherry Rd. is beset with moistons. Also Cherry Rd will cooler in the summer than will either Sentinel or Eagle Eye. The ac-

cessibility at Eagle Eye may well dictate Sentinel or Cherry during hunting season. Essentially the choice is yours. What is best for the situation at hand. Examine all the possibilities and then decide.

*(Continued on page 11)*

# FUZZY SPOT DELPHINUS



<p><b>STARS</b></p> <p>● &lt;math&gt;&lt;3&lt;/math&gt;    ● &lt;math&gt;&gt;8&lt;/math&gt;</p> <p>● 4</p> <p>● 5</p> <p>● 6</p> <p>● 7</p>	<p><b>SYMBOLS</b></p> <p>● Multiple star</p> <p>○ Variable star</p> <p>☄ Comet</p> <p>☉ Galaxy</p> <p>□ Bright nebula</p> <p>⊛ Dark nebula</p> <p>⊕ Globular cluster</p> <p>⊙ Open cluster</p> <p>⊖ Planetary nebula</p> <p>⊞ Quasar</p>	<p><b>SYMBOLS</b></p> <p>△ Radio source</p> <p>× X-ray source</p> <p>○ Other object</p>	<p><i>Herschel 400 Objects: 6905, 6934, 7006</i></p> <p><i>SAC 100 best of the NGC Objects: None</i></p>
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Local Time: 17:26:08 28-Jul-2000

UTC: 00:26:08 29-Jul-2000

Sidereal Time: 13:22:43

Location: 33° 39' 56" N 112° 49' 10" WRA: 20h34m49s Dec: +13° 10' Field: 17.9°

Julian Day: 2451754.5181

## Seeing Double

By Thad Robboson

It has been said that the road to Disneyland is paved with good intentions, and such is the case of this month's Seeing Double. All packed up, I headed out to my favorite dark site, Eagle Eye. At first, it appeared only spotted cloudy, but we would later find out that observing was not going to happen, at least not through a clear sky. My goal that night was to observe some doubles to share in this column, but I was limited to one observation...Antares. But one is better than none, and that leads me to our topic...tools that pry apart stubborn doubles.

Antares is a fairly tight double star, and its appreciable difference in magnitude makes it all the tougher to split. Even in my 8" f/6 at 120x, I couldn't get a sense of the companion...until I tried a trick I picked up on off the 33 doubles mailing list. The trick is simple; due to Antares' and its companion's spectral classes, they appear quite unique through an O-III filter. Antares gets toned down and its companion gets enhanced. Normally Antares is described as an orange with a very faint, hard to detect greenish companion. Through the O-III, it becomes bright red with a fairly easy to find deep blue companion. This also seemed to be similar through a broadband filter. Most doubles won't respond this way, but there are other tricks.

**Hex masks:** A hex mask can be made of nearly any material that you can cut cleanly. It

is simply a mask that is made to cover the business end of your scope that changes the aperture from circular to hex shaped. Instead of the star having a round airy disc, it now has 6 spikes coming from it. Turning the mask should allow the fainter star to pop out between the spikes.

**Occulting bars:** An occulting bar is a piece of thin wire, tin foil, hair, or strand of thread stretched inside an eyepiece at its field stop. If you know the approximate PA of the companion, you can orient the bar to cover the brighter primary, revealing the fainter star.

**Colored filters:** If the stars you are looking at are colored, it is possible to use the colored filters you use on planets to help show fainter companions. Much the same way that a red flashlight won't show red ink on white paper, you may have some luck making the brighter primary "disappear".

Keep in mind that nothing helps more than clear steady skies, but using tricks like these make it possible to split some tough ones. And don't be afraid to try something that seems odd, use all the tools in your arsenal, and you might be rewarded with splitting a tough one wide open.

If you have questions, suggestions, or would like to share observations, please contact me at...[tmrob@primenet.com](mailto:tmrob@primenet.com)

# October 2000

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

## *Schedule of Events for October 2000*

- Oct. 4th** The Soviet Union launches Sputnik 1 in 1957 beginning the space race.
- Oct. 5th** First Quarter Moon at 0359 mst
- Oct. 6th** Birth of Nevil Maskelyne in 1732. Astronomer Royal from 1765 to his death in 1811, he founded the Nautical Almanac.
- Oct. 7th** **Public star Party at Thunderbird Park in Glendale. See page 9 for details.**
- Oct. 13th** Full Moon at 0153 mst
- Oct. 13th** **SAC General Meeting at Grand Canyon University; 1930. Guest Speaker TBA**
- Oct. 19th** **Deep Sky Sub Group meeting. Contact AJ Crayon for time and location at: [acrayon@primenet.com](mailto:acrayon@primenet.com) .**
- Oct 20th** Third Quarter moon at 0059 mst
- Oct. 21st** **SAC Star Party at Flat Iron Mountain Site. Sunset 1750, Ast Twilight ends 1912; Moonrise: 0141**
- Oct. 27th** New Moon at 0058 mst
- Oct. 28th** **All Arizona Star Party, Arizona City; Hosted by EVAC, [www.eastvalleyastronomy.org](http://www.eastvalleyastronomy.org) for details.**

# First Annual GPIDA Light Pollution Symposium

By Jennifer Keller

On Friday August 25th our newly formed local chapter of the International Dark-Sky Association - the Greater Phoenix IDA - held a symposium at the Arizona Science Center's Dorrance Planetarium. Christian Luginbuhl of the U.S. Naval Observatory, Flagstaff, gave an informative, thought-provoking, and motivating talk on what a dark sky is and why we need to preserve it. Liz Alvarez, Associate Director of the IDA, spoke on what IDA can do, has done, and will do to further the goal of preserving the night.

The lobby was filled with dark-sky related displays. Shirley Wood from the Illuminating Engineering Society of North America had a display of outdoor Lighting - good and bad. Sam Herchak had a Hubble Sky Cap displaying how to remedy some bad outdoor lighting. IDA had handouts and poster displays, and was able to recruit some new members. Jim Deck presented an ongoing succession of his and Joe Orman's slides of night shots over the city and urban sky glow, interspersed with some dark sky shots.

The Local Chapter of IDA was formed on May 19, 2000 by a group of concerned amateur astronomers planning a symposium to hopefully spark an interest in forming a local IDA chapter. At this very first planning symposium we formed the "GPIDA". The only requirement to be a member of the GPIDA is that you become an IDA member.

I feel that amateur astronomers have inherited the task of preserving what's left of the night sky and working toward remedying the generations of damage done - not because we don't want to drive so far to observe, but be-

cause we know the beauties and wonderment of the treasures hidden in the dark. A Milky Way we could see from our front yard initially inspired many of us at a young age. Now, there is virtually nothing left in the city sky to spark our children's imaginations.

Please consider joining the IDA. Be a part of the solution. We will have another meeting soon and need your thoughts and ideas on how to bring the Milky Way back to Phoenix.

To join IDA, visit our Web Site at [www.gpida.org](http://www.gpida.org) <<http://www.gpida.org>>, pick up a membership application at a SAC meeting, or call me and I'll get a membership application and information out to you.

*(Ed. Note: The success of the Light Pollution Symposium is due in no small part to Jennifer's Drive and vision. However we would be remiss if we did not credit some of the folks who share her vision and lent their time and effort : Jack Jones, Dr. Margaret Noble Kain; Jim Deck; Sam Herchack; Christine Shupla and many others. I apologize if I left you of the list, Your contribution is appreciated.*

*For more information contact :*

*Jennifer Keller  
Secretary, Saguardo Astronomy Club and  
A Founding Member of the Greater Phoenix  
International Dark-Sky Association*

*602 378-2496  
602 237-4511  
kellerjt@wellsfargo.com )*

***Help us bring a dark sky back to Greater Phoenix!***

## Public Star Party At Thunderbird Park

It's that time of year again. Once again Members of SAC are invited to participate in a public star party to be held at Thunderbird Park in northern Glendale. The date is Saturday, October 7th. Sunset is at 1807 so plan on arriving by 1730, to be sure you can set up and field questions from early-comers.

As for viewing, Venus and Mercury will be low in the west at sunset. Venus shouldn't be a problem, but Mercury will present a challenge. Find and amaze our visitors!! Mercury will set at 1905 followed by Venus at 1934. The Moon will be high in the south with a phase of .739. Good phase for the western Maria and craters like Copernicus and Kepler. Bring that lunar filter. Saturn will make it's appearance at 2025 followed by Jupiter at 2059. It will probably be a bit later before we can see them due to the mountains to the east.

As for deep sky, the constellations of the summer Milky Way will still be in good viewing position. M57, M13, M92, M29, M27 should all be easy targets. The Andromeda Galaxy and the Double Clus-

ter will also be well placed.

I've said it before and I'll say it again, If you've never attended a Public Star Party you're missing a lot of fun. You need not be an expert to participate. I Guarantee you know more than the folks attending. They'll be as interested in what you can show them as well as anyone else. The more the merrier.

Directions: Take the Loop 101 freeway to 59th Ave. exit and head North. (a right turn if you came from I-17, Left if you came from the western burbs). Continue north about 1 1/2 miles. The road will start to climb between two mountains. The entrance to the park is on the left and will be marked with a SAC sign. Follow the road around to the right past the amphitheatre and continue to the observing site on the north edge of the park.

Hope to see you there.

## SAC Observing Sites



The map at left shows our observing sites in relation to the 110-117 Stack. The circles are centered on the interchange and are 25; 50 and 75 miles from the stack, respectively.

If you want to get away from Aurora Phoneicia, Eagle Eye offers the best compromise between dark sky and distance traveled.

## Reflections

### Eagle Eye Revisted: A Close Encounter With the Beehive Cluster

By Jennifer Keller

Sixteen extreme optimists appeared out of the clouds for a star party at E2 Saturday September 2nd. Early in the evening we were able to catch glimpses of Venus peeking out through a massive cloudbank to the west before it finally gave up and settled in for the night. Through the sporadic sucker holes the seeing was pristine. I captured great views of the Andromeda Galaxy and her little buddies; Thad Robosson was able to split Antares with an O-III filter; and Jack Jones scoped out a nice view of the Dumbbell nebula.

Somehow though, the clouds always figured out which sucker hole we were observing through and rushed over to block our view before we had much of a chance to see anything or share the view with friends.

Joining us for cloud covered astronomer camaraderie were the Wil Milan family including his enjoyable children Christie and Alex, John and Cathy Matthews from EVAC, Joe Macke, Jim Deck and his friend Jay Hazard, Paul Steiner and his friend Brent and a lot of under-utilized telescopes.

The majority lost hope and went home about 11:00. A few of us stayed to rest before the drive or to call the night "camping" instead of a "loss".

I awoke abruptly at 3 a.m. to the sound of Mighty Orion swishing the clouds away with his hefty sword. (Which, by the way, was a great thing, as I only needed M42/43 to finish my Messiers). The sky was clear and dark and amazing! Jupiter and Saturn were part of a beautiful configuration with the Pleiades and the Hyades. Jupiter had to tug all his satellites up by an invisible string as if to say: "Come on

guys we agreed to be part of this show and Orion has cleared the way so get out of that bed in the morning and wash your face and hands!"

So I finished my Messier Catalog, put a few billion light years on my new focuser, finally got to try out my new black post it notes with white gel pens for some really fun astronomy drawings and satisfied a bit of "observing withdrawal" by surfing up and down the Milky Way to the lovely tune of snoring astronomers. (A. J.--beware, you may have a contender for that award!)

So, what about that Beehive Cluster? Thad, Jack, Ruby and Mary Keller, and myself took off on some spelunking tours of the area the following morning. We checked out a couple of the "owl abodes" just across Eagle Eye Road & collected some really tiny skulls and femurs. Then headed off with maps and GPS to explore some mining caves off the Harquahala road. We rediscovered all kinds of history, geology, machinery, antiquities, animal tracks, plants, and insects-- the most extremely memorable of which was a swarm of killer bees! We all managed to escape with various amounts of bee stings and our lives. We were extremely blessed to have been exploring together with our vehicles nearby to run into and also very lucky none of us have serious reactions to bee stings. (The proper action in case of a bee attack is to RUN for the nearest cover...Car, building, etc. Anyplace you can seal up and not let bees into. Also, it's not a bad idea to carry some Benadryl in your first aid kit in case you do have a reaction) Please--when you explore/observe off the beaten path, always bring along a few friends, more than

*(Continued on page 11)*

## Presidents Message

### By Jack Jones

Well the monsoon season is finally over for us for another year and I must congratulate all those who stuck it out and suffered so greatly through one of the worst cloud-fests I've ever experienced. Some of us were even subject to three star party shutouts in a row, an almost unprecedented tragedy for a good percentage of the club. I myself was barely able to survive by using the few clear nights to work on the Lunar Object List and the new Urban Observing List! With new dark-sky observing sites and new members popping up, we need some of that exquisite Arizona weather once more. Let's get active again and enjoy the upcoming events being offered by our club and others around Arizona.



The Light Pollution Symposium at the Arizona Science Center was most instructive and Chris Luginbuhl showed himself to be an excellent speaker. We must invite him back soon to speak to us again in Phoenix. There are so many things that can be done around Phoenix that it is really easy right now to make a difference in the quality of lighting and the look of the city and the preservation of our dark sites around Phoenix. It's pretty much just someone asking or offering a little education at the right time and place or just voicing a preference where none was before. It can only get worse if we don't. I invite you to join the e-group for continuing information. Instructions are at the Greater Phoenix IDA section's website at [www.gpida.org](http://www.gpida.org).

*(Continued from page 10)*

one vehicle, more water than you think you'll need, a first aid kit, a cell phone if possible, and keep a constant and sharp vigilance over danger.

The good news about E2 is that it remains a nice dark site--refurbished with facilities, an educational Ramada, picnic tables and barbecues: all unlit and great conveniences for observing and hunting. The other news is hunting season will be upon us November through February so utilize this wonderful spot while you can and pre-plan an alternate meeting place or consider hunting as your alternate E2

hobby (The Harquahala Mt. Rd is passable by medium to high clearance vehicles. Arrive before sundown, and you should be able to pick out a spot further west, and then south, down the road.). I'd be happy to provide approximate GPS coordinates for an alternate site that should accommodate 6 or more cars. I'd also be happy to provide EXACT GPS coordinates of the beehive!)

*(Ed. Note: There's a lesson here someplace. Jennifer gives good advice regarding Observing with someone and being prepared. This could've had a less fortunate outcome. Just a word to the wise...Rick)*

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Don't forget how this whole thing started: "Who's Up for Eagle Eye?" on the AZ-Observing mailing list. There's no better way to keep up with the latest weather prospects and to find out who else wants to head out than here. Remember, there's safety in numbers. I, for one,

will not observe at a dark sky site by myself. Besides everyone knows it's more fun observing with someone. If you're not already on the AZ-Observing list, here's how you subscribe: Send an e-mail to "az-observing-request@psiaz.com" and put the word "Subscribe" in the subject field. That's all there is to it.

# SAGUARO ASTRONOMY CLUB

5643 W. Pontiac Dr  
Glendale, AZ 85308-9117

Phone: 623-572-0713  
Fax: 623-572-8575  
Email: Saguaro Astro@aol.com



*Videmus Stellae*

[www. Saguaroastro.org](http://www.Saguaroastro.org)

## SAC Schedule of Events

### SAC Meetings

January 21, 2000	July 14, 2000
Feb 18, 2000	August 11, 2000
March 17, 2000	September 15, 2000
April 14, 2000	October 13, 2000
May 19, 2000	November 10, 2000
Jun 16, 2000	December 9, 2000 (Holiday Party)

### Deep Sky Group Meetings

February 24, 2000	August 17, 2000
April 20, 2000	October 19, 2000
June 22, 2000	December 14, 2000

### SAC Star Parties

Date	Sunset	Astronomical Twilight Ends	Moonrise
1/29	1759	1924	0245
2/26	1824	1947	0131
3/25	1846	2010	2320
4/22	1907	2036	2350
5/27	1932	2111	0224
6/24	1944	2126	0056
7/22	1937	2114	2329
8/19	1911	2040	2204
9/23	1825	1948	0244
10/21	1750	1912	0141
11/18	1727	1853	0039
12/16	1725	1854	2336