

SDAA

San Diego Astronomy Association

Promising the Sun, the Moon, and the Stars...and Delivering!



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A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

News and Notes

August 2003

SDAA Business Meeting

Will be held at:

SKF Condition Monitoring
4141 Ruffin Road
San Diego, CA 92123-1841
August 12th at 7:00 pm

Program Meeting August 20th at 7:00PM

Mission Trails Regional Park
Visitor & Interpretive Center
1 Father Junipero Serra Trail
San Diego, CA 92119

Snacks * Prizes * Info * Fun
Doors open at 6:30PM
See page 5 for details

CONTENTS

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Stellar Distance	1
Astronomy 101	2
A Visit to Lowell Observatory	3
NASA's Space Place	4
August Star Parties	5
Program Meetings	5
Camp with the Stars	5
RTMC Nightfall	5
Treasurer's Report	7
Skywatch	7
Contact Information	8
Events Calendar	9

Eyepiece Shootout 12, Fat Man and Little Boy by Bret Akers & John Kuhl

The competitors:

The 17mm Type 4 Nagler is a substantial 6-element eyepiece beast weighing in at 1.6 pounds-Dobsonian owners take note! It has a 2"-only barrel, the Nagler 82-degree apparent field of view, and 17mm of eye relief. How much? About \$385.

The 16mm Type 5 Nagler is a significant contrast when compared to the 17mm Type 4. It's a 1.25"-only eyepiece that uses 6 lens elements with several different extra-low-dispersion glass types. It has the Nagler standard 82-degree field of view, 10mm of eye relief and weighs only 7.5 ounces. How much? About \$320.

These two eyepieces are in an important focal range for the Nagler line. The 16mm Type 5 has the widest true field of view you can get from a 1.25" Nagler and is the upper limit for those with 1.25" focusers. The 17mm Type 4 is the shortest Nagler that requires a 2" barrel.

Testers and observing conditions:

There always seems to be a few eyepieces that garner high praise from many of the club members--the 17mm Type 4 Nagler is one of them. "That's the best eyepiece in that focal range." "It always feels right in my scope." "Why can't Tele Vue make this eyepiece without the Instadjust?" We've heard those comments so often that we were heading into this test expecting a clean sweep by the 17mm Type 4 Nagler.

It's been four months since we've done an eyepiece review so we were bound to be a bit rusty with the process. We stood there

with the two eyepieces in hand, looked at the 12.5" f/5 Dobsonian and said, "Now what do we do?" Well, after a bit of stumbling around, we were finally able to get back on track and start the process. Since there are plenty of easy-to-see objects at this time of the year and the air was fairly steady the test proceeded fairly smoothly.

On-Axis Sharpness: We point the scope at M13; it was high in the sky and was a great target for the magnifications we were using. We put in the 17mm Type 4 Nagler and had a nice sharp view, just as we were expecting. Next in the focuser was the 16mm Type 5. Hmmm. The view looked sharper, much sharper. We had to look again just to be sure. It looks like this is going to be an interesting comparison. We've already been surprised by the performance of the little 16mm.

Edge: 16mm Type 5

Off-Axis Sharpness: The sharpness difference was even more noticeable off axis. This test wasn't really that close.

Edge: 16mm Type 5

Contrast: After the surprising results of the sharpness tests, we pointed the scope at the Triffid Nebula to take a look at the contrast in the dark lanes. Once again the 17mm Type 4 Nagler displayed a very nice image. Once again the 16mm Type 5 put up a better image--with more contrast than can be accounted for by the 1mm difference in magnification. We were really surprised by this since the Type 4 Naglers have always shown such great contrast. **Edge: 16mm Type 5**

Chromatic Aberration: There wasn't a huge difference here, but we have to give

(continued on page 6)

Astronomy 101

Astronomy 101 by Scott Baker

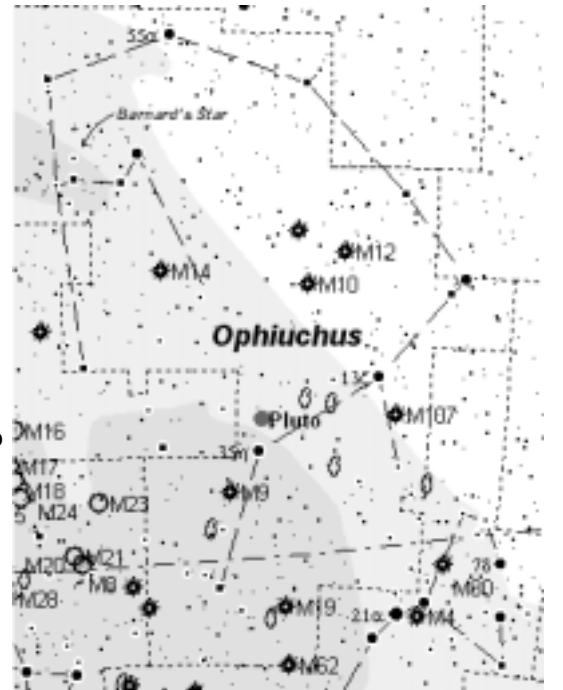
Snake Oil and Herbs

Ophiuchus - The Serpent Bearer

No matter how you pronounce it, "Off-you-cuss" or "off-ih-YOU-kuss" or "oaf-ee-YOOK-us," it's still a mouthful. This constellation, which sits atop the summer Milky Way centered above Sagittarius and Scorpio, contains some great summertime targets for binoculars and small telescopes. The Greek legend of how it came to be is based on a story of a doctor. It seems, long ago, there was a doctor by the name of Aesculapius, who traveled the land healing people and looking for better medicines. In his travels he came across a serpent and slew it, only to see another serpent carrying healing herbs that brought the first serpent back to life. He studied the serpent and learned about the healing herbs and devoted his life to healing people with his newfound knowledge.

went to see Zeus. Hades informed Zeus of Aesculapius' work and convinced him that if he continued, mortal man would become immortal, something that only Gods should be. Zeus agreed with Hades and said he would handle Aesculapius. Zeus found Aesculapius just as he was about to restore the life of Orion after his fatal scorpion sting, and he smote him with a thunderbolt. Feeling sorry for Aesculapius and admiring his work as a healer, Zeus decided to place Aesculapius in the heavens as the constellation Ophiuchus, with his serpent (Serpens Cauda and Serpens Caput) wrapped around him.

If you like Globular Clusters, then Ophiuchus is your constellation, with twenty-two globular clusters in its boundaries. The most notable globular is M62 at magnitude 6.5. This cluster is very condensed, fairly bright, and lies just five degrees above and a little left of Epsilon Scorpii. M62 is one of the most



and brightness but lacking the distortion. The other, brighter globulars in Ophiuchus are M9, M10, M12, M14 and M107.

Another interesting object in Ophiuchus is Barnard's Star. This faint 9.56 magnitude red dwarf star is the second closest star to our sun, at six light years, and has the greatest proper motion of any star in the sky, at 10.3 arc seconds a year. It's possible, using either film or sketches to record observations, to see this star's position change from year. It's presently traveling almost due north and toward us at about 103 miles per second. According to Burnham, the star will reach a minimum distance of less than 4 light years in about 8,000 years, when its proper motion will have reached 25 arc seconds per year and its brightness will be about magnitude 8.6. This star will be a challenge in small scopes but easy in an 8" or larger instrument.

If you're up to a real challenge, try for Pluto, magnitude 13.67, which lies just two degrees above Sabik (Eta Ophiuchi). You'll need a good finder chart (available from Sky & Telescope Magazine) or a computer database, and at least 10" of aperture to locate this faint planet.



After a while, Hades, the god of the underworld, noticed a steady decrease in the number of souls entering the underworld, due to Aesculapius efforts. Hades decided to do something about it and

irregular-shaped globular clusters, its shape possibly caused by tidal forces due to its proximity to the galactic center (6,100 light years distance). Another fine globular is M19, almost a twin to M62 in size



San Diego Astronomy Association

A Visit to Lowell Observatory by Denis Cheng

With the Mars Conjunction and closest approach to earth in 15 years fast approaching, I'm delighted to provide this little report on my visit on June 16, 2003, to that "citadel of Mars observational history and lore," the Lowell Observatory in Flagstaff, AZ. I hadn't really planned on making this visit. I was just taking a little leisurely drive back to California from Amarillo, TX (don't ask - it's a long story...) along historical Route 66, taking in the sights along the way, which, incidentally, included that other great astronomical point of interest, Meteor Crater, 30 miles east of Flagstaff. After spending the night in the town over which Percival Lowell had decided to set up his own private observatory, I decided purely as an afterthought that, as long as I was there, I should take a look at what I originally regarded as just "a rich man's plaything" before I left town the next day. A further reason why I didn't regard this as a more "serious" sight-seeing objective (in fact, I was more interested in seeing the old buildings in the historic "old town" district of Flagstaff) was that, compared to our own Mt. Wilson and Mt. Palomar Observatories, Lowell struck me (an admitted California chauvinist) as being fairly unimpressive and even puny! After all, the largest observational instrument on site is the rather quaint and antiquated 24" Clark refractor (there is the larger 72" Perkins SCT but it's located several miles away on Anderson Mesa), and all of its supporting facilities are not very high tech or modern, either, since little has been done to update anything there since it was all initially constructed back in 1896. But I soon came to appreciate just how interesting and important a place this is to all amateur astronomers in general and anyone who has a specific interest in the planets - especially Mars! - in particular.

The first nudge away from my apathetic and condescending attitude towards Lowell Observatory came when the person who was leading the tour group in which I

found myself reminded me, during her introductory remarks, that the man who built the observatory, Percival Lowell, was someone who absolutely believed in the existence of intelligent life on Mars - he believed in "Martians!" In other words, "ol' Perci" was "a man after my own heart!" In fact, he became so committed - or obsessed - with proving their existence that he ended up spending so much of his considerable inherited wealth on the construction of this, his own private observatory on an entire mountaintop that he bought just for this purpose. And he conceived and built the observatory to be the equal of anything else that existed at that time, almost all of which were conceived and constructed by government agencies or universities. Thus, with little in the way of formal training - he held no advanced degrees in astronomy - Lowell became something of "the ultimate amateur astronomer." To this day, Lowell Observatory retains the unique distinction of being a truly independent major observatory without affiliation to, or support of, any government agency or university.

With this new appreciation of Lowell as "the ultimate amateur astronomer of his day and believer-in-Martians," (and, incidentally, you'll all be happy to know that many of the other people in the tour group were taking sufficient notice of my SDAA t-shirt and asking me about SDAA!) I was now able to view that old 24" Clark refractor and the unusually-shaped dome that houses it (shaped like an inverted ice cream cup rather than a dome) as "ultimate antiques." In other words, I now saw them as true works of art and monuments to a significant time in the history of astronomy and to a supreme dedication to a romantic concept that is now all too cruelly debunked. Man, how I love all those sci-fi tales of "bug-eyed monsters" or "little green men" from Mars penned by the likes of H. G. Wells, Edgar Rice Burroughs and Ray Bradbury! As I gazed upon that beautiful 24" Clark, I could almost see Lowell himself at its eyepiece, where he spent 22 years of his

life intensely scrutinizing the Red Planet and exhaustively gathering his evidence, which included his famous sketches of the "Martian canals," for the existence of intelligent life. What a pity that those "canals" were later to be interpreted as being merely the reflections of the capillaries in his own retina! The appreciation of the singular and, indeed, priceless value of the Clark telescope and its dome (for which movement throughout its 360 degree range is facilitated by Ford pickup truck tires!) is brought home to anyone who gazes in awe upon the incredible all wood construction of the dome. It looks like the loft of a New England barn magnified by 100 times - an exquisite work of carpentry that is well nigh unrepeatable at today's cost of labor. As the tour guide emphatically pointed out, should a fire ever erupt in the dome everything would be completely destroyed, and none of it could ever be reconstructed or replaced.

Upon leaving the main dome and the Clark telescope, the unique mausoleum housing the remains of Percival Lowell was pointed out to us. In the shape of a geodesic dome, one can almost imagine it floating up off the earth out into space and eventually landing on Mars as Percival Lowell would have wanted! We, then, continued along a path to another smaller dome that housed an even smaller telescope: the 13" A. Lawrence Lowell (brother of Percival and one time president of Harvard) refractor. Along the path, a scale model of the Solar System had been constructed which serves to give all who walk along the path some perspective of the relative distances between the planets. As with the 24" Clark telescope, the 13" Lowell scope, though small, still played an important role in history: it was the instrument through which Clyde Tombaugh discovered Pluto, the ninth planet in our Solar System, in 1930. Like the dome of the 24" Clark scope, the dome of the 13" Lawrence is shaped like an inverted ice cream cup and is all wood

(continued on page 4)



San Diego Astronomy Association



From the Belly of an Airplane: Galaxies by Dr. Tony Phillips

On April 28th a NASA spacecraft named GALEX left Earth. Its mission: to learn how galaxies are born, how they grow, and how they die.

"GALEX short for Galaxy Evolution Explorer is like a time machine," says Caltech astronomer Peter Friedman. It can see galaxies as far away as 10 billion light years, which is like looking 10 billion years into the past. The key to the mission is GALEX's ultraviolet (UV) telescope. UV rays are a telltale sign of hot young stars, newly formed, and also of galaxies crashing together. By studying the ultraviolet light emitted by galaxies, Friedman and colleagues hope to trace their evolution spanning billions of years.

This kind of work can't be done from the ground because Earth's atmosphere absorbs the most energetic UV rays. GALEX would have to go to space. To get it there, mission planners turned to Orbital Science Corporation's Pegasus rocket.

"Pegasus rockets are unusual because of the way they're launched from the belly of an airplane," says GALEX Project Engineer Frank Surber of JPL.

It works like this: a modified L-1011 airliner nicknamed Stargazer carries the rocket to an altitude of 39,000 feet. The pilot pushes a button and the Pegasus drops free. For 5 seconds it plunges toward Earth, unpowered, which gives the Stargazer time to get away. Then the rocket ignites its engines and surges skyward. The travel time to space: only 11 minutes.

"The aircraft eliminates the need for a large first stage on the rocket," explains Surber. "Because Stargazer can be used for many missions, it becomes a re-useable first stage and makes the launch system cheaper in the long run." (To take advantage of this inexpensive launch system, GALEX designers had to make their spacecraft weigh less than 1000 lbs the most a Pegasus can carry.)

A Pegasus has three stages not counting the aircraft. "Its three solid rocket engines are similar to the black powder rockets used by amateurs. The main difference is that the fuel is cast into a solid chunk called a 'grain'-about the consistency of tire rubber. Like black powder rockets, once the grain is lit it burns to completion. There's no turn-

ing back."

In this case, turning back was not required. The rocket carried GALEX to Earth orbit and deployed the spacecraft flawlessly. On May 22nd, the UV telescope opened its cover and began observing galaxies-"first light" for GALEX and another success story for Pegasus.

For adults, find out more about the GALEX mission at <http://www.galex.caltech.edu/>. Kids can read and see a video about Pegasus at <http://spaceplace.nasa.gov/galex/pegasus.html>.

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

Lowell Observatory Continued from page 3

in construction. An interesting note about the scope is that it has no eyepiece whatsoever - at the focal point of the lens, there is only a large metal plate with brackets designed to hold photographic plates. Thus, observations of all objects are conducted indirectly by looking at their images captured in photographs! And this is how Tombaugh found Pluto... Wow!

The tour concluded in the observatory's library which is now a museum housing all of Lowell's notebooks containing his voluminous notes and highly-detailed sketches of Mars. Also on display are the interesting antique astronomical instruments that he collected. Percival Lowell was truly a most extraordinary and inspiring man and a true mentor and model to all of us amateur astronomers - and "Mars lovers!" (Now, if only we could get a share of some of his money...)



L-1011 "Stargazer" takes off to carry Pegasus rocket on the first 39,000 feet of its climb to deliver a spacecraft to orbit.



San Diego Astronomy Association

August Star Parties by Mike Dietz

We will be at Balboa Park for the monthly "Stars in the Park" program on Wednesday August 6th and September 3rd. We will be setup between the Rueben H. Fleet Science Center and the Natural History Museum in Balboa Park westward of the water fountain towards the Prado. We generally start showing up around 7 p.m. during the summertime.

To finish the week join us at Mission Trails Friday August 8th for our second Stars at the Park Program at Mission Trails Regional Park in the Kumeyaay Lake Campground day use parking area. We will be setting up around 7:00 or so. If you're heading east on Mission Gorge Rd., continue past the visitors center and over the hill into Santee. The first light, near the bottom of the hill, will be Father Junipero Serra Trail. Turn left at the light. The campground will be on the right.

We will be back at MTRP at the Kumeyaay Lake Campground a second time on Friday the 15th to host an 8 p.m. star party for church group having a mother/daughter evening. They will graciously provide dinner for the volunteers. If you are interested in coming early for the dinner please let me know so that I can give them a head count.

We finish off the month with star parties at the Tierra Del Sol site the last 2 Saturdays of the month (August 23rd and 30th).

Our Camp With The Stars program will be on the weekend of August 30th.

For those of you who would like to help the club and volunteer for star parties, contact one of the Star Party Directors:

No. County- Bob Nanz (760) 751-3992

So. County- Rich Bentley (619) 231-8791

If you are interested in scheduling a star party for a school or group you are affiliated with, please call any of the above contacts at least 6 to 8 weeks in advance to make sure you get the date you want.

Program Meetings by Scott Baker

The July Program meeting featured guest speaker Fulvio Melia, an astrophysicist from the University of Arizona, who gave a very enjoyable lecture about the black hole at the center of our galaxy. Over 55 members and guests attended the lecture and enjoyed Fulvio's talk. After the lecture there were many interesting and thought provoking questions asked by the audience, and Fulvio declared later that this was one the best turnouts and most knowledgeable groups he's had the pleasure of talking to. After the lecture, the monthly raffle was held with \$94.00 for the 50-50 prize and a nice 8mm Celestron Eyepiece, sold to us at cost by Oceanside Photo and Telescope, going to our lucky prize winners.

Next month's meeting will either be a talk by Scott Roberts, Vice President of Sales at Meade Instruments, on "How to Choose and Use Your First Telescope," or "A Beginners Guide to Star Hopping" given by yours truly. We have \$94.00 with which to buy the next prize, which should get us something very nice indeed, so make sure you make it to the next Program Meeting, 7:00 PM on August 20th, at the Mission Trails Regional Park Visitor Center Theater. Directions are available at the MTRP web page at www.mtrp.org. Don't be confused by the gate across half of the parking lot at the center, drive around and park in the lots, you won't be locked in or out.

Camp With The Stars by Mike Dietz

We will be back at William Heise Campground the weekend of August 30th. As always, you can come on Friday and stay the whole weekend. This will be Labor Day weekend so you can even stay until Monday if you like. If you can bring a telescope to share with the campers, you can camp for free. Just tell the rangers you are with the SDAA and they can direct you to

the picnic area where we will be at.

To reach William Heise Campground take Hwy 67 north through Ramona which turns into Hwy 78. Continue east on Hwy 78 through Santa Ysabel heading towards Julian. About a mile before Julian, turn right on to Pine Hills Rd. and head South. Continue about 2 miles to Frisius Drive and turn left. Head East on Frisius Dr. about 1 1/2 miles to the park entrance.

RTMC Nightfall September 26-27, 2003

Sponsored by the RTMC, Nightfall is a fall observing session held at the Palm Canyon Resort in Borrego Springs, California. The Palm Canyon Resort is a resort hotel with 60 rooms and 82 R.V. spaces. It is located 50 miles southwest of Indio. The 2003 Nightfall will be held on Friday, September 26 and Saturday, September 27.

You need to call the Palm Canyon Resort for a room or RV space at their facility. When making reservations, please indicate that you are with the RTMC or astronomy group, or you may be told that no rooms are available. Their phone number is (800) 242-0044.

Further details are available on the RTMC Web site at <http://www.rtmc-inc.org/nightfall.html>



San Diego Astronomy Association

Eyepiece Shootout Continued from page 1

the nod to the 17mm Type 4.
Edge: 17mm Type 4

Field Flatness: We didn't spend a great deal of time on this test. It was easy to see that the 16mm has a flatter field than the 17mm. **Edge: 16mm Type 5**

Light Transmission: This is frequently a very frustrating test, but this time it was pretty easy. While performing other tests we noticed that the 16mm looked like it was transmitting more light. When we actually tested for it, it was fairly easy to see. **Edge: 16mm Type 5**

Coatings: The 16mm at first glance looked to be a bit darker, but upon further inspection there was no notable difference. **Edge: Draw**

Eye Relief and Comfort: We're going to take to easy path on this one and call it a draw. Both of these eyepieces showed some minor kidney beaming, but it wasn't an issue. The 17mm has a nice, large eye lens and ample eye-relief. We would have given it the nod if it weren't for one thing. I'm sure many of you can guess what I'm talking about--yes, the Instadjust. The 16mm really has only one real drawback. It's a bit tight on eye relief. It's probably not suitable for glasses wearers and observers who don't like to really get their eye into an

eyepiece. **Edge: Draw (unless you wear glasses)**

Conclusions: This test was a shock. Going into it, we thought that the 17mm Type 4 Nagler would obliterate the 16mm Type 5. Well...Uncle Al really surprised us this time. The Tele Vue 16mm Type 5 is sharper, has more contrast, passes more light, has a flatter field, and costs less. I can

only see 2 reasons going with the Tele Vue 17mm Type 4, you want 2" eyepieces or you wear glasses. As always, try before you buy.

Note: The opinions expressed in this review are solely those of the author(s) and do not constitute an endorsement by the San Diego Astronomy Association.



This month's competitors: The 16mm Type 5 Nagler and the 17mm Type 4 Nagler.

Show Your SDAA Pride...

with high-quality SDAA merchandise! Display your membership in style with SDAA t-shirts, polo shirts, and hats. What better way to keep warm on those cold nights at TDS than with an SDAA hooded sweatshirt? Be the talk of the road with a 'Look Up!' license plate frame. And be sure your fellow members know who you are by wearing an official SDAA nametag. For more information, visit the merchandise section of the website at <http://www.sdaa.org/SDAAContacts/SDAAContacts.htm> or call Diana Kelly at (858) 603-3323.





San Diego Astronomy Association

Treasurer's Report by Jennifer Pesqueira

With the addition of the following members we now have a total 549 of SDAA members. Please welcome Wolfgang Berger, Pat Boyce, Richard Haze, Andrew Ingersoll, Jeremy Johnson, Mark Metrovich, Bruce Simpson and Ryan Trousdale. Welcome to SDAA and may you enjoy clear dark skies.

SkyWatch for August, 2003

John Mood

[Times PST] [* = Easy] [** = Moderate] [*** = Difficult]

Sat., 26 July ---- STAR PARTY @ Tierra del Sol.

Mon., 28 July ---- NEW MOON, 11:53 p.m.

Mon., 11 Aug. ---- FULL MOON, 9:48 p.m.

Sat., 23 Aug. ---- STAR PARTY @ Tierra del Sol.

Wed., 27 Aug. ---- MARS closest to EARTH (hence, larger appearing) than anytime in the past 59, 620 years, @ 2:51 a.m. (See below, "Morning Planets.")

---- NEW MOON, 10:26 a.m.

Sat., 30 Aug. ---- STAR PARTY @ Tierra del Sol.



EVENING PLANETS:

MERCURY [*1/2] is visible in Leon the Lion low on the horizon midmonth. PLUTO [***] is in Ophiuchus the Serpent Bearer; needs a map showing stars to the 14th magnitude.

Bluish NEPTUNE [**] is in Capricornus the Goat; needs a map showing stars to the 8th mag. Greenish URANUS [*1/2] is in Aquarius the Water Carrier; shd be visible to sharp young eyes at mag 5.7.

At last, MARS [*] at its absolute very best in Aquarius the Water Carrier!! By mid-month, it becomes technically an evening planet, but is still at its highest elevation after midnight 'til the very end of the month. See my "SkyWatch for July, 2003" for tips on viewing this totally unique opposition of Mars.

MORNING PLANETS:

SATURN [*] is in Gemini the Twins a couple of hours before dawn.

{ The Perseid meteor shower peaks on the morning of 13 Aug., but the bright Moon will drown out all but the few very brightest meteors. }

BEGINNING OBSERVERS:

While you're enjoying Mars, you'll notice a bright star below it. That's FOMALHAUT, the brightest star in the constellation Piscis Austrinus the Southern Fish & the 18th brightest star in the heavens. It gleams like a pearl in the fish's mouth & you can easily trace out the fish to its right.

EXPERIENCED OBSERVERS:

There are a number of interesting tho' dim galaxies in Piscis Austrinus. Esp check out NGC-7172 [**], a nearly edge-on spiral w/ dark equatorial band, & 3 dimmer elliptical galaxies [**1/2] just below it.

TIERRA DEL SOL

LAT = 32° 36' 46" N (± 0.1"), LONG = 116° 19' 55" W (± 0.1"), ELEV = 3710' (± 5'), at the bathroom, as determined from USGS 7.5 min 1/24000 map.

Send comments & questions to me by phone (619/225-9639), USPS (4538 Long Branch Av., San Diego, CA 92107) or my e-mail address 1happyalien@cox.net.

¡HAPPY VIEWING!

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San Diego Astronomy Association

Amateur and Armchair Astronomers -- Project Astro Needs You!

Project ASTRO is a national program of the Astronomical Society of the Pacific, to pair teachers in grades 4-9 with local astronomer and space scientist volunteers, who visit the classroom at least 4 times during the school year to lead hands-on activities.

Professional and amateur astronomers - we need you! We have teachers signing up in Chula Vista, San Diego, Escondido, Riverside, Indio, and Coachella Valley, and need astronomer volunteers to be their Project ASTRO partners.

Amateur and "armchair" astronomers are welcome - you do NOT need a degree in science or a telescope - just a knowledge of basic astronomy. With education cutbacks and a lack of teachers trained in the physi-

cal sciences, YOUR knowledge and enthusiasm can be a valuable resource in our schools to help produce the "next generation" of scientists.

This is a great opportunity to help kids learn science through hands-on activities. At the same time you can improve your own communication skills - AND HAVE FUN - with the most inquisitive and appreciative audience you can find.

Free training and an 800-page activity guide are provided at a Saturday training workshop in San Diego in August 2003. More details, and an astronomer application form can be obtained from the web-site:

<http://mamacass.ucsd.edu/projectastro/2003.html> and from the Project ASTRO San Diego Volunteer Coordinator, Dr. Philip Blanco (pblanco@ucsd.edu).

MARSpectacular Mars Desert Research Station Mars Party August 29 through 31, 2003

Imagine observing Mars this summer from a place that looks like the Red Planet - complete with a fully functional Mars Habitat and Observatory. You are cordially invited to attend a Mars Party held at the Mars Desert Research Station near Hanksville, Utah. The site was chosen for its Martian landscape and is a research facility used by the Mars Society to make studies for the human exploration of Mars. With its 6.7 magnitude skies it is an ideal location for observing the wonders of the universe. This is a free event sponsored by the Mars Society and Celestron.

More at: <http://www.marsociety.org/mdrs/musk/musksp01.asp>

Clip and Save

2003 Board of Directors and Chairpersons

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San Diego Astronomy Association

SDAA Calendar of Events

August 2003

S	M	T	W	T	F	S
					1	2
3	4	5 	6 Stars in the Park Balboa Park	7	8 Stars in the Park MTRP	9
10	11	12  SDAA Board Meeting SKF 7pm	13	14	15	16
17	18	19	20  Program Meeting MTRP 7pm	21	22	23 Star Party at TDS
24	25	26	27 	28	29	30 Star Party at TDS Camp w/the Stars Wm Heise Cmpgd
31						

The Back Page

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Your efforts are greatly appreciated by the
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