

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

April 2003

SDAA Business Meeting

Will be held at:

SKF Condition Monitoring
4141 Ruffin Road
San Diego, CA 92123-1841
April 8th at 7:00 pm

Program Meeting "Gadget Night"

Bring your creations!

April 16th at 6:30PM

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

Snacks * Prizes * Info * Fun
See The Back Page for details

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April 2003 Vol. XXXIX Issue 04
Published Monthly by the
San Diego Astronomy Association
75¢/\$8.00 year
Incorporated in California in 1963

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Viewing Jupiter by Bret Akers

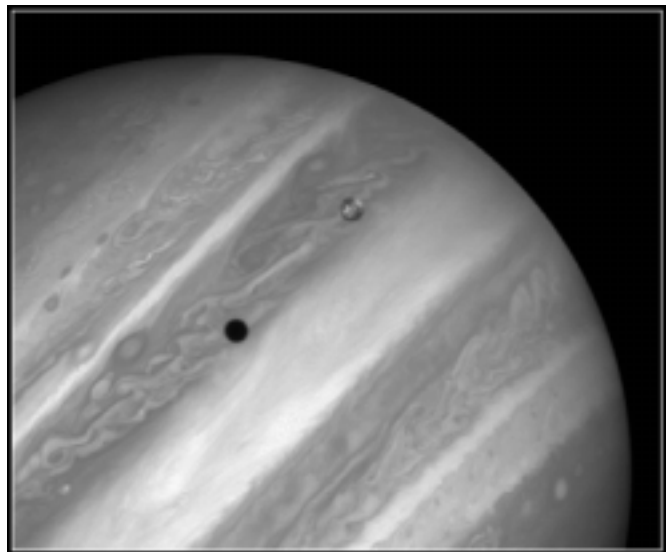
Jupiter, the gas giant that is the fifth planet from the Sun, is by far the largest and most massive planet in the Solar System with a mass about 318 times greater than Earth's. It is composed of about 90% hydrogen and 10% helium with traces of methane, water, and ammonia. Jupiter may have a solid core that's about 10 to 15 Earth masses, but we can't be certain. We may know more by the time NASA's Galileo spacecraft plunges into Jupiter's atmosphere on September 21 of this year, but it's not likely.

Observations of Jupiter have been recorded as far back as 240 BC, when Ptolemy recorded Jupiter's conjunction with a star on September 3rd of that year; however, it wasn't until 1630 that the principal cloud belts were discovered. But at first, they didn't know they were cloud belts. That discovery came about 25 years later in 1655 when G. D. Cassini (yes, that Cassini) realized that the rotational rates of the surface features were different at Jupiter's equator than away from the equator.

Jupiter has a very short rotational period. At its equator, the rotational period is

about nine hours--you can witness a complete equatorial rotation in one night. As you approach the planet's north and south poles, the rotational period slows to about 10 hours. This variance in the rotational period results in greater centripetal forces at work near the planet's equator. This gives Jupiter a noticeable bulge in the middle with an apparent flattening near the poles.

What we see in the telescope is the gas giant's outer layer of cloud belts, which are arranged in a parallel series of light and dark zones or cloud "belts." The colors that we see in Jupiter's clouds are probably due to subtle chemical reactions



Rare Hubble Portrait of Io and Jupiter. Image courtesy of NASA and the National Space Science Data Center <http://nssdc.gsfc.nasa.gov/>

of the trace elements in Jupiter's atmosphere, although the mechanisms for this are still not well understood.

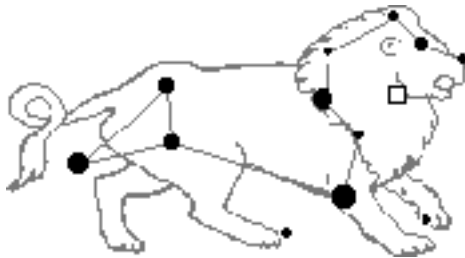
(continued on page 5)

Astronomy 101

Astronomy 101 by Scott Baker

Leo the Lion

The Constellation of Leo, the lion, is now in our Spring sky. Leo lies just to east of Gemini and Cancer, both recently discussed here. To find it, look due south around 10:00PM in March, 9:00PM in April and 8:00PM in May, and find the most recognizable feature of the constellation, the big sickle. The 21st brightest star in the sky, Alpha Leonis or "Regulus," anchors the base of the sickle. Regulus, which is 69 light years distant, was given its current name by the Polish astronomer Nicolaus Copernicus (1473-1543).



Copernicus saw Regulus as the Heaven's Guardian, one who regulated all things in the heavens, thus "Regulus." The ancients called Regulus by a different name, "Cor Leonis," meaning "The Lion's Heart." As with many constellations, peoples around the world, in diverse civilizations, saw the same objects in the sky. The Syrians knew Leo as Aryo, the Persians as Ser, to the Turk, Artan and to the Babylonians it was Aru, all meaning "Lion." The Egyptians felt that the world was created during a

time when the Sun rose in Leo, near a star known as "Denebola," which means "Lion's Tail."

The Greeks, probably from their travels in the Middle East, saw it as a lion as well and attached this tale to how it came to be: Hercules (you do all remember him, right?), was to perform 12 labors. His first labor was to kill the Nemean lion, a ferocious beast that descended from the moon to Earth on a meteor (more on meteors in a minute), landing in the country of Corinth. The Nemean lion terrorized and ravaged the countryside of Corinth and couldn't be destroyed by mortal man because, it was said, its hide was so tough that not spear nor weapon could penetrate it.

Hercules found the beast near its lair, a cave with two entrances. Hercules, to trap the lion, blocked the rear entrance and entered the front in search of the lion. After locating the lion and having his arrow bounce off the lion's chest, he realized that the stories of its impenetrable hide were true. Grabbing the lion around the neck, he choked it to death by ramming his fist down its throat. Hercules, having completed his first task, used the lion's skin to make a mighty shield that nothing could penetrate. The Goddess Hera, angry that the lion had been slain, raised the lion up, high in the sky, where today he can be seen as the constellation Leo, the lion.

The constellation of Leo marks the western edge of the area known as "The Realm of Galaxies," an area of the sky that is heavily populated with galaxies, lying mostly in the constellations of Virgo and Coma Berenices. Leo itself contains five nice galaxies, all of them Messier objects, which are visible with smaller telescopes: M65, M66, M95, M96 and M105 are all within the reach of a 2" and larger telescope.

The other thing Leo is famous for is the

Leonid Meteor Shower. Remember, the Nemean lion descended to Earth on a meteor. The Leonids are a meteor shower that occurs every year around November 19th and are the result of dust and debris left behind by the comet Tempel-Tuttle.



The meteors appear to come from the region of the sky (the radiant) in Leo, thus they are called the Leonids. With the recent pass of the comet in 1998, the shower has been replenished and has given very good displays for meteor watchers. The comet returns every 33 years, so the showers will slowly dwindle, until replenished again in 2031.

Desert Sunset Star Party May 1-4, 2003 by Pat and Arleen Heimann

Our Early Registration Deadline has been extended to April 15, 2003 to accommodate those of you who have been hesitant to make plans too far in advance in these volatile times. We hope many of you will join us to make the first annual Desert Sunset Star Party a memorable event. We have some great speakers each of the three nights along with afternoon vendors and demonstrations on Friday and Saturday. You'll also want to check out the scheduled tours to Mt. Hopkin's Whipple Observatory, The University of Arizona Mirror Lab, EOS Technologies, and the Biosphere 2. And don't forget to bring your items for the swap meet Saturday afternoon, and that special homemade Astro-Tool for the SAT (Simple Astronomy Tool) contest on Saturday afternoon. All registration materials are available on the web at <http://chartmarker.tripod.com/sunset.htm>



San Diego Astronomy Association

Eyepiece Shootout 11, Old School vs. New School by Bret Akers and John Kuhl

TIERRA DEL SOL, San Diego (SDAA) - Border patrol helicopters and ground vehicles converged on an area north of Tierra Del Sol Saturday night. Dozens of amateur astronomers scattered to hide from the threat of the 20-million-plus-candlepower airborne searchlight. Luckily the incident didn't last very long.

Now, back to the review...

The competitors:

A lot of people have been asking for this one, so here it is: Tele Vue's 20mm Type 2 Nagler vs. its 22mm Type 4 Nagler. One or both of these eyepieces are probably on many people's wish list. Some swear by the older 20mm Type 2 while others are convinced that "out with the old and in with the new" is the way to go. We'll see...

At one time, the 20mm Type 2 Nagler was the flagship of the Tele Vue line. However, sometime in 1999, this eyepiece was discontinued and replaced by the 22mm Nagler Type 4. To date, all of our reviews

have centered on eyepieces that can be purchased new, but the cult-like following behind the 20mm Type 2 Nagler prompted us to break our unwritten rule.

The 20mm Type 2 Nagler is a massive 8-element beast weighing in at 2.3 pounds-even heavier than the 31mm Type 5 Nagler! Warning, you may have balance issues with this eyepiece. If you're prone to dropping things, you may want to avoid this one! Obviously, it's a 2"-only barrel and has the Nagler 82-degree apparent field of view. How much? It depends on what you can negotiate.

The 22mm Type 4 Nagler is another big eyepiece, although at about a pound and a half, it's much lighter than the 20mm Type 2. It also has 6 lens elements and Tele Vue's famous (or infamous) Instadjust. Like the 20mm above, it has a 2"-only barrel and has an 82-degree apparent field of view. How much? About \$460.

Testers and observing conditions:

Same scope, same place. Hey, at least we're consistent! Actually, the air was pretty steady and we were getting some beautiful views. Unfortunately, we were battling a

few things: the aforementioned helicopter, some unexpected dampness, and a general lack of showpiece objects early in the night this time of the year...

On-Axis Sharpness:

The 20mm Type 2 started off with a bang. It didn't take long to realize that the 20mm, both on an off axis, was sharper than the 22mm. The 22mm was sharp and it looked great, but the 20mm was really sharp across the entire field. Looking at open clusters with the 20mm can be summed up with one word--wow.
Edge: 20mm Type 2

Off-Axis Sharpness:

See above comments. Edge: 20mm Type 2

Contrast:

After the 22mm was battered by the 20mm in the sharpness tests, we moved on to contrast. At first one of us thought that the 20mm was going to take this test as well; however, once we started looking for objects with very low-level contrast, we agreed that the 22mm was showing more

(continued on page 10)



This month's competitors: Tele Vue's 22mm Type 4 Nagler and 20mm Type 2 Nagler.



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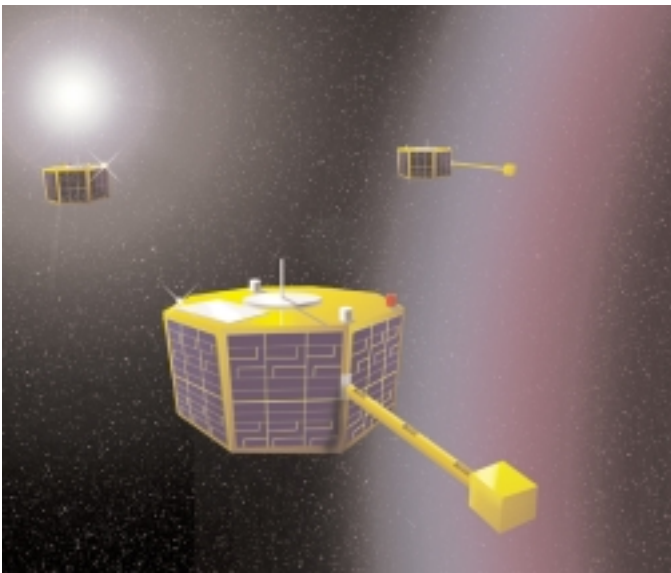


Frisbees in Space by Dr. Tony Phillips

When Pete Rossoni was a kid he loved to throw Frisbees. Most kids do--it's pure fun. But in Pete's case it was serious business. He didn't know it, but he was practicing for his future career in space exploration.

Grown-up Pete Rossoni is now an engineer at NASA's Goddard Space Flight Center. His main project there is figuring out how to hurl spacecraft into orbit Frisbee-style.

The spacecraft are small--about the size of birthday cakes. "This wouldn't work with big satellites or heavy space ships like the shuttle," notes Rossoni. But a cake-sized "nanosatellite" is just right.



Nanosatellites--nanosats for short--are an exciting new idea in space exploration. Ordinary satellites tend to be heavy and expensive to launch. The cost alone is a deterrent to space research. Nanosats, on the other hand, can travel on a budget. For example, a Delta 4 rocket delivering a communications satellite to orbit could also carry a few nanosats piggyback-style with little extra effort or expense.

"Once the nanosats reach space, however, they have to separate from their ride," says Rossoni. And that's where Frisbee tossing comes in."

Rossoni has designed a device that can fling a nanosat off the back of its host rocket. "It's a lot like throwing a Frisbee," he explains. "The basic mechanics are the same. You need to impart the spin and release it cleanly--all in about a tenth of a second." (The spinning motion is important because it allows the science magnetometer to measure the surrounding field and lets sunlight play across all of the nanosat's solar panels.)

The ST5 nanosats are designed to study Earth's magnetosphere--a magnetic bubble that surrounds our planet and protects us from the solar wind. But their primary goal, notes Rossoni, is to test the technology of miniature satellites.

"We haven't done anything like this before," says Rossoni. Soon, however, the concept will be tested. A trio of nanosats is slated for launch in 2004 on the back of a rocket yet to be determined. The name of the mission, which is managed by JPL's New Millennium Program, is Space Technology 5 (ST5).

Can groups of nanosats maintain formation as they fly through space? Will their internal systems--miniaturized versions of full-sized satellite components satisfy the demands of both the harsh space environment and critical science measurements? Is Frisbee-tossing as much fun in orbit as it is on Earth?

ST5 will provide the answers. Read about ST5 at <http://nmp.nasa.gov/st5>. Budding young astronomers can learn more at http://spaceplace.nasa.gov/st5/st5_tortillas1.htm

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

Presidential Notes - Any Researchers Out There? by Brian V. Staples

How many of you, my fellow SDAA members, perform some sort of astronomical research, either basic or applied, for purely personal reasons or to share with other like-minded research groups?

I'm not asking this question rhetorically - I really would like to hear from as many of you as possible on this subject. Those of you on the Yahoo e-groups already have this request from Scott Baker, but I'm restating it here. We are trying to gather data on past and current research efforts of SDAA members and to see if there is any interest in starting or contributing to current research efforts by groups like AAVSO, ALPO, IOTA and others. I'm sure there is even university level research that could benefit from amateur data gathering efforts. These contributions could be made by individuals, by a group of dedicated researchers, or even by the whole club.

Types of research that may be going on include monitoring variable stars, observing and recording transient lunar phenomena, hunting comet and minor planet, and timing of the occultation of stars and solar system objects. Your research need not be limited to the gathering of data. One member, Lloyd Duhon, is working on a Packable Remote Robotic Visual Observatory, while another, Chris Watson, is creating SkyGX, an extensive all-sky atlas (congratulations to Chris - Roger Sinnott of S&T looked over Chris' project and said that they were "very impressive" and "masterfully executed"). All such projects contribute to the body of knowledge in the amateur and professional communities.

We are gathering this data for several reasons: to see if the club can enhance its members' efforts, to use this data to secure support for the SDAA, and to toot our collective horn, (loudly, if I know my fellow SDAA members). So let's hear from you researchers of the night sky, you creators of the tools of our trade, you wanderers in the dark. Call me, mail me, e-mail me, or corner me at a program meeting and let me know what you're doing!



San Diego Astronomy Association

SDAA Board Meeting Minutes, March 11th, 2003 by Scott Baker, in place of Melinda Baker

The meeting was called to order at 7:07 PM. In attendance were Brian Staples, Jennifer Pesqueira, Scott Baker, Chris Watson, Julie Quinn, Diana and Shawn Kelly and Mike Dietz.

The minutes from the previous meeting were read by Scott Baker. It was motioned to approve the minutes, as amended and read, seconded and approved by the Board.

The Treasurer's report was given by Jennifer Pesqueira. It was motioned to approve the report, as read, seconded and approved by the Board.

The TDS Site Maintenance Report was given by Shawn Kelly. He recently restocked all the supplies, coffee, paper products, etc. No progress has been made on the pump house roof because he's still waiting to hear from Brian Mc Farland. Dennis Ritz, an observatory owner, has volunteered to purchase one half-truck load of gravel for the observatory road. Shawn asked for permission to purchase the other half for areas around the public pads. The Board motioned and approved the purchase of one half-truck load of gravel, not to exceed \$350.00, for use around the site.

Jim Traweek was not present to give an Observatory Report, but Brian Staples reported that the new VanSlyk focuser is installed and ready for use.

Library Report by Diana Kelly. Diana Kelly has volunteered to become the Librarian for the club and will take on the task of moving the library from its present location at the Fleet Space Theater to Mission Trails.

Web Page Report. Chris Watson is currently working on several new designs for the SDAA web page. The goal is to have a web page that rivals the best the web has to offer from astronomy clubs. In May, he will have links to these new concepts on the web site and will allow members to review and comment on them. Once a format is chosen, the new, improved SDAA web page

will be set up.

Old Business. No information on the installation of the barbed wire on the south fence. We are still waiting on this.

No additional information on the installation of a second pedestrian gate, near the top of observatory hill, but Scott Baker promised to have information by the next board meeting. A possible position on the fence line was briefly discussed.

New Business:

Brian Staples has requested that polls or surveys be placed on the SDAA Yahoo! Group web page to ask members about their ideas on what projects the club should be working on and what research members are conducting. This information would be used to request grants for funding club projects. Scott Baker said he would put the polls on the group page.

Viewing Jupiter (continued from page 1)

One of Jupiter's most famous features, the Great Red Spot, has been observed from Earth for over 300 years. It's an oval-shaped storm that is large enough to hold 2 Earths, about 7,200 miles by 15,000 miles in size. Throughout the observational history of Jupiter, the Great Red Spot has at times been more apparent or harder to see. These days it is fairly pale and can be a bit of a challenge to view on nights when the seeing isn't very good.

Of Jupiter's (as of this writing) 39 moons, or satellites, four of them are particularly noteworthy. These four were discovered by Galileo in 1609 and are hence named the Galilean satellites. In order of increasing distance from Jupiter, their names are Io, Europa, Ganymede, and Callisto. In general these are the only satellites of Jupiter that you will see in a telescope. However, if you have at least 15" of aperture and great transparency in the atmosphere, you may be able to catch a glimpse of Himalia, the fifth largest of Jupiter's moons. Himalia is a real challenge as it's only a little over 115 miles in diameter. In comparison, Europa, the smallest of the Galilean moons, is a

whopping 1950 miles in diameter, nearly the size of Earth's moon.

So what do you need to observe Jupiter? Not much. The Galilean satellites can be seen simply with a pair of binoculars. A 2.5" or a 3" refractor will show the two dark equatorial belts as well as satellite shadows on Jupiter's disc. If you want to see the thinner cloud belts with their additional details, you will probably need at least 6" of aperture.

So when you have your telescope pointed at Jupiter, here a checklist of features to look for:

1. Any general color effects
2. The position of the Galilean satellites
3. The appearance of a Galilean satellite during a transit
4. The appearance of a shadow on Jupiter's disc during a transit
5. The appearance of the main equatorial belts
6. The appearance details of the thinner equatorial belts
7. The appearance of any light ovals or white spots
8. The appearance of any festoons, garlands, or other details
9. The Great Red Spot



Montage of Jupiter and the Galilean moons. Image courtesy of NASA and the National Space Science Data Center <http://nssdc.gsfc.nasa.gov/>



San Diego Astronomy Association

Astronomy Day by Mike Dietz

This year we will be celebrating Astronomy Day on Saturday April 19th at the Mission Trails Regional Park visitors center from 9 a.m. to 10 p.m. We will have telescopes set up during the day for safe solar viewing and then again in the evening to view other celestial wonders. There will be astronomy displays, mirror grinding demonstrations, informational handouts, and telescope viewing. This event is always a fun filled day full of camaraderie among members and the public.

As always, we will need a lot of help for this major event. If you have any astronomy displays or photograph displays you can share for this event, if you can help with the mirror grinding demonstrations, or if you can set up a telescope for public viewing please let me know at (619)334-9930.

Directions are as follows:

From Interstate 8 - Take 8 to the Mission Gorge/Fairmount exit. Turn north onto Mission Gorge Road. Proceed down Mission Gorge Road for 4.2 miles. Look for the large wooden park sign on Mission Gorge Road. Turn left onto Father Junipero Serra Trail. The Visitor and Interpretive Center parking lot is on the left just before you get to the pipe gate on Father Junipero Serra Trail.

From Route 52 - Take 52 to the Mast Blvd.

exit in Santee. Driving east, turn left onto Mast Blvd., go under the freeway to the first traffic signal (West Hills Parkway) and turn right. Driving west, turn right onto Mast Blvd. and right onto West Hills Parkway. Take West Hills Parkway to Mission Gorge Road and turn right. Proceed down Mission Gorge Road 2.4 miles (past the Father Junipero Serra Trail entrance to Old Mission Dam and Kumeyaay Lake and Campground). Look for the large wooden park sign on Mission Gorge Road. Turn right onto Father Junipero Serra Trail. The Visitor and Interpretive Center parking lot is on the left just before you get to the pipe gate on Father Junipero Serra Trail.

Science Educators Conference by Mike Dietz

On Friday and Saturday March 14th and 15th the San Diego Astronomy Association staffed a table at the SDSEA Science Educators Conference. We had a small display and some informational handouts. This year the attendance was smaller than in previous years. A fair number of the teachers attending had heard about our star party program, but those that hadn't were pleasantly surprised to hear that it was free. I'd like to thank the following members for assisting me at the conference: Bill Armstrong, Scott Baker, Don Hamm, Terry Stewart, Bob Wetzel, and Bill Whalen.

SDAA Vice President Scott Baker and the SDAA's booth at the Science Educators Conference.



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

April Fool's Astronomy

- See that light...that's a star
- Those commercials about buying star names...give me the money instead and I'll give you a certificate that's just as valid
- Don't stick your fingers in the eyepiece
- Naglers make good Valentine's day presents
- Don't stick your fingers in the telescope
- If it says "Astro-Physics," you know it's good
- If it looks like glass...don't touch it
- Twinkling stars is a bad thing
- No, it doesn't look like a picture from Hubble

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Dr. Tony Phillips
Julie Quinn
Brian Staples

SkyWatch for April, 2003

John Mood

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

Fri., 28 March ---- Close conjunction of VENUS (mag -4.0) & URANUS (mag +5.9); just before dawn, they will be only 2.6' apart, closest planetary conjunction since 1990; will need a telescope.



Sat., 29 March ---- STAR PARTY @ Tierra del Sol.

Tues., 1 April ---- NEW MOON, 11:19 a.m., & that's no April Fool!

Wed., 2 April ---- Try for 31-HOUR-OLD New Moon just to the right of MERCURY (mag. -1.4; see below) low on the horizon at dusk.

Sun., 6 April ---- Daylight Saving Time begins; move clox forward an hour & ergo lose it!

Wed., 16 April ---- FULL MOON, 12:36 p.m.

Sat., 19 April ---- STAR PARTY @ Tierra del Sol.

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

Thurs., 1 May ---- NEW MOON, 5:15 a.m.

EVENING PLANETS:

MERCURY [* 1/2] is available the 1st half of the month, in Aries the Ram (see above, 2 April). SATURN [*] is above the horns of Taurus the Bull, & its rings are at their utmost maximum tilt this month. JUPITER [*] is still spectacularly hovering near M-44 (the Beehive cluster) in Cancer the Crab; its 4 moons are edge-on & therefore make close passes, sometimes even eclipsing each other.

MORNING PLANETS:

MARS [*] is starting to make its move as it drifts into Capricornus the Goat; it rises a couple of hours before dawn now but in August it will be the biggest & brightest it's been in human history {I'm only quoting authoritative sources!!}. VENUS is [*] dropping fast through Aquarius the Water Bearer & will soon be gone; that's the bad news; the good news is that it becomes a beautiful thin crescent as seen in a telescope as it does so; some extremely sharp-eyed young people claim to be able to see it naked eye.

BEGINNING OBSERVERS:

The great Leo/Coma Berenices/Virgo cluster of galaxies is now in perfect position for viewing. Give yourself a stretch & see how many you can spot. There are 22 Messier galaxies in these 3 constellations (if one counts M-91 as NGC-4548). I'd give at least a third of 'em one & a half stars (see above) & the others no more than 2 stars. Incidentally, the Local Group (of galaxies, which includes the Milky Way, M-31 & M-33) is an outlying part of this great assemblage of galaxies.

EXPERIENCED OBSERVERS:

Of course, literally hundreds of additional galaxies are visible to the more experienced with larger scopes. Especially delightful are the numerous places where one can view several galaxies at once. Take your pick!

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!



San Diego Astronomy Association

Star Party Report by Mike Dietz

April is another very busy month for star parties with 15 currently scheduled so we are going to need a lot of help again. The Tierra Del Sol star parties this month will be on April 19th and 26th. Stars at the parks will be on April 2nd and May 7th for Balboa Park and on April 11th and May 9th for the Kumeyaay Lake Campground at Mission Trails Regional Park.

To reach the campground from North County take Hwy 52 East to the Mast Blvd. exit and turn left at the stop sign. Go East a few hundred feet to the light and turn right on West Hills Pkwy. Head South to Mission Gorge Road and turn right. Head West to the next light and turn right on Father Junipero Serra Trail. The campground will be on the right.

From South County, take Hwy 125 North to Mission Gorge Road and turn left. Head West to Father Junipero Serra Trail and follow the directions above. To reach the campground from central San Diego, take Mission Gorge Road East 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 and follow the directions above.

We will be celebrating Astronomy Day on Saturday the 19th at the Mission Trails Regional Park Visitors Center.

On Thursday April 3rd we will be in the Clairemont area for a 6:30 p.m. star party at Mt. Everest Academy. The school is located at 4350 Mt. Everest Blvd. and the school will provide PIZZA for the volunteers.

On Monday April 7th we will be at Challenger Middle School for a 7:30 p.m. star party. The school is located at 10810 Parkdale Ave. in San Diego.

We will be in La Jolla on the 9th for a 7:30 p.m. star party at Torrey Pines Elementary. The school is located at 8230 Cliffridge.

On the 10th we have a 7:30 p.m. star party at Jefferson Elementary located at 3770 Utah Street in San Diego.

We will be in the Laguna Mountains at the

Foster Lodge on Saturday April 12th for an 8 p.m. star party. They will provide dinner for the volunteers at 6 p.m. If you can come please let me know and I will give you directions.

We will be in Chula Vista on Tuesday the 22nd for a 7:30 p.m. star party at Castle Peak Middle School. The school is located at 160 Quintard.

On Friday the 25th we will be in the Rancho Bernardo area for a 7:30 p.m. star party at Westwood Elementary. The school is located at 17449 Matinal Road. From I-15, exit at Rancho Bernardo Road and go south (Left if you get off of 15N and right if you get off from 15S). Turn right on West Bernardo Road (1st traffic light). Turn left on Matinal Road, and the school is on the left hand side. They are expecting a very large crowd for this one so we could use all the help we can get.

We will be in Santee on Tuesday the 29th for a star party at Rio Seco Elementary. The school is located at 9545 Cuyamaca Avenue.

We have a special 9:00 p.m. star party on Friday May 2nd at the Maderas Golf Club in Poway. It is located at 17750 Old Coach Road. We would like to have at least 10 to 12 scopes for this one so please let me know if you can come to this one. They will be having a reception where we will be setting up so we can't set up before 7:30 p.m.

On Monday May 5th we have a 7:30 p.m. star party Hilltop Middle School. Contact Rich Bentley for details.

We will be in Rancho Penasquitos on May 6th for a 7:30 p.m. star party at Sunset Hills Elementary located at 9291 Oveido.

As always, please contact one of the star party coordinators (Rich Bentley, Mike Dietz, or Bob Nanz) to let them know that you will be attending. That way they can let you know of any changes or cancellations.

Astro-Photo Show a Success! by Scott Baker

We had 50 people turn out for the March Program meeting which featured a member astro-photo exhibition! Members who showed their work were: John Laborde, Scott Baker, Shawn Kelly, Chriss Hoffman, Don Spencer, Dean Belcher, Jose Magsaysay, Randy Marsden, Nick Marilao and Jennifer Pesqueira. The images shown ranged from rank amateur (mine) to professional quality (all the others). The members who presented their images gave helpful information to members thinking of getting into this aspect of amateur astronomy, which made it not only an enjoyable show, but a learning experience as well. The winning 50-50 prize of \$95.00, went to Diana Kelly. The remaining 50%, \$95.00, means we'll have an even nicer price for next month's meeting! The Meade 9.7mm eyepiece, sold to us at cost by Oceanside Photo and Telescope, went to Bill Armstrong. Hope you enjoy it Bill; it should be a good one for planets! Also given away were an SDAA license plate frame and two CD-ROMs of astronomy images, one donated by the Mount Laguna Observatory Association and one from NASA.

I would like to thank Diana Kelly's mother (and Diana for arranging it) for making cookies for the program meeting! She has also volunteered to make them for the next six meetings. The cookies were outstanding!

I would also like to thank all the members who showed your work and for making this event a success!

Treasurer's Report by Jennifer Pesqueira

With the addition of the following members we now have a total of 533 SDAA members. Please welcome: John Alfredo, Jim Christopherson, Jere Cunningham, Mike Durschlag, Michael Yin, Eric Yiskis. Welcome to SDAA and may you enjoy clear dark skies.



San Diego Astronomy Association

Dark Matter

and other puzzling topics

Put your gray matter to work on those cloudy nights with this month's puzzle -- astronomy trivia! Email your answers to newsletter@sdaa.org by April 21.

1. What is it called when there is a second full moon in a month?
2. Which planet has the largest volcano and the largest valley in the solar system?
3. How long does it take for light to travel from the Sun to Earth?
4. What is the name of the largest moon in the solar system?
5. After the Sun and Sirius, what is the 3rd brightest star in apparent magnitude as seen from Earth?

The winners of last month's word search challenge are:

Mary and John Todd (most words overall)
Mike Dietz (most words on our list)
Gary Carradine (2nd most words on our list)

Thanks to everyone who sent in their results. The hidden words are listed below.

Last month's puzzle answer

The 60 words hidden in the word search were:

asteriod	jupiter	nebula	scintillation
astronomy	leitz	neptune	sdaa
axiom	lens	nova	seeing
big bang	magnification	observatory	space
celestron	mars	oort	star
comet	mass	orion	sun
dobsonian	meade	orthoscopic	syrtis
earth	mercury	parsec	tele vue
eclipse	messier	pentax	telescope
encke	meteor	planet	tierra del sol
eyepiece	mirror	pluto	universe
galaxy	moon	pulsar	uranus
globular cluster	nadir	questar	venus
hubble	nagler	rings	vesta
ida	near	saturn	vixen

Shingletown Star Party

The 2nd Annual Shingletown Star Party will be held from noon June 25th through noon June 30th. With the help of the Shingletown Activities Council (SAC), we have again secured the Shingletown Airport for the five days and nights. The site will accommodate hundreds of observers. The resort community of Shingletown is very nearby and provides many services. Shingletown is only 17 miles downhill from the magnificent Mt. Lassen Volcanic

National Park where the Lassen Star Party, from which the SSP grew, was held for many years.

What's available onsite:

- 110v power available for recharging batteries during the day
- Ice will be available again for a nominal fee
- Porta-Potties will be located along the length of the runway
- Several large dumpsters and a number of

Stars and Flowers Desert Star Ranch by Stuart & Bonnie Resor

Please join us for our first annual astronomy meet held April 25th, 26th, and 27th. To help offset our cost, we are asking for a \$5 per person per night fee (children 10 and under free). Since the ranch encompasses 67 acres, there is considerable opportunity to pick a remote camping spot. Our Phase One 4-acre fenced campground is also available. Showers are available at the state campground a few miles off.

The odds will be in our favor for great weather. Hot days, pleasant evenings and stars and meteors that will jump out of the sky at you.

There should be some desert flowers left, and there are many motels that should have rooms available. We will have picnic tables, fire tubs and wood. Bring water.

Please RSVP at (760) 753-8022. Call for directions and information.

"Desert Star Ranch" Site: 2299 Borrego Valley Road, Borrego Springs, California, 760-525-0076 cell. Mail address: P.O. Box 1983 Borrego Springs, California, 92004. desertstaranch@aol.com

Or: Stuart and Bonnie Resor, 1268 Blue Sky Drive, Cardiff By The Sea, California, 92007-1005, 760-753-8022, fax: 760-753-8058. resorarchitect@aol.com

trash cans

- SAC will be selling refreshments during the day at the hospitality area
- Possibly coffee. We are trying to arrange for it to be available during observing hours and in the morning.

Shingletown is located about 35 miles east of Redding in northern California on highway 44.

For details and registration information, visit <http://www.shingletownstarparty.org>



San Diego Astronomy Association

Eyepiece Shootout (continued from page 3)

detail. This test was close, but once we knew what to look for, the results were very repeatable. Edge: 22mm Type 4

Chromatic Aberration:

Another tough test. After a bit of discussion, we agreed that the 22mm was showing fewer color artifacts.

Edge: 22mm Type 4

Field Flatness:

We didn't spend a great deal of time on this test. It was easy to see that the 20mm has a flatter field than the 22mm.

Edge: 20mm Type 2

Light Transmission:

Another eyepiece shootout, another frustrating light transmission test. One of us nearly threw up his arms in defeat when

the seeing started playing games with us. Fortunately, we had enough patience to come to a conclusion. The 22mm transmitted more light.

Edge: 22mm Type 4

Coatings:

Two TeleVue Naglers--no noticeable difference. Edge: Draw

Eye Relief and Comfort:

Some people may question our sanity on this, but we're declaring the 20mm Type 2 the winner of this test for two reasons: (1) We can't stand the Instadjust on the 22mm Type 4, and (2) The 22mm Type 4 seemed to black out easier from poor head placement. On the downside, the 20mm Type 2 is a bit tight on eye relief. Although it's rated at 12mm, it feels like it's less. You may need to get really close to the eyepiece and rest your head on it. This may bother some people. Knowing this, if you wear

glasses, you'll probably be more comfortable with the 22mm Type 4. Edge: 20mm Type 2 (unless you wear glasses)

Conclusions:

So for those who always turn to the back page of a mystery, the winner is...well, it depends. If you want absolute sharpness, don't need glasses when observing, and can deal with the weight, the Tele Vue 20mm Type 2 Nagler may be the eyepiece for you. If you live for low-level contrast deep sky objects, want more eye relief, and want an eyepiece that feels like it went on a bit of a diet, the Tele Vue 22mm Type 4 Nagler may need to be in your future. Just 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.

Clip and Save

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San Diego Astronomy Association

SDAA Calendar of Events April 2003

S	M	T	W	T	F	S
		1 ●	2 Stars in the Park Balboa Park	3 Star Party at Mt. Everest Acad 6:30pm	4	5
6	7 Star Party at Challenger Middle School 7:30pm	8 SDAA Board Meeting SKF 7pm Star Party at Miramar Ranch Elem 7:30pm	9 ● Star Party at Torrey Pines Elem 7:30pm	10 Star Party at Jefferson Elem 7:30pm	11 Stars in the Park MTRP	12 Star Party at Foster Lodge, Laguna Mtns 8pm
13	14	15	16 ○ Program Meeting "Gadget Night" MTRP 7pm	17	18	19 Star Party at TDS Astronomy Day MTRP Visitor Ctr
20	21	22 Star Party at Castle Peak Elem 7:30pm	23 ●	24	25 Star Party at Westwood Elem School 7:30pm	26 Star Party at TDS
27	28	29 Star Party at Rio Seco Elem School 6:30pm	30			

The Back Page

Acknowledgments by Mike Dietz

The club would like to thank Roy Ang, Bill Armstrong, Don Beamann, Rich Bentley, Carolyn Corless, Peter DeBaan, Mike Dietz, Doug Hansen, Jose Magsaysay, Nick Marilao, Doug McFarland, Joe McGerald, Garry Mose, Bob Nanz, Jennifer Pesqueira, Julie and Mike Quinn, Lin Robertson, Gregory Santos, Rich Strobel, George Varga, Bob Wetzel, and Charlie (for Vallecito) for helping with the school star parties, Camp with the Stars, and Stars in the Parks programs. Your efforts are greatly

appreciated by the students, parents, and teachers.

April Program Meeting by Scott Baker

The April Program meeting will be held on April 16th in the theater at the Mission Trails Regional Park Visitor Center. This month's program will be "Gadget Night"! Gadget Night is the event at which members share the various items they've built themselves to aid them in their hobby.

This is always a popular event, so arrive early to get a good seat. If you've shown items in the past, don't be afraid to bring them again; we have a lot of new members who haven't seen them yet. So break out your gadgets and bring them to the meeting; we'd love to see them. Don't forget, the April raffle prize will be worth \$95.00, so bring your loose change and buy a few extra chances to win the raffle. Doors open at 6:30 PM and the program starts at 7:00 PM. Directions to the MTRP Visitor Center are available on the MTRP web site at www.mtrp.org.

MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193. Include any renewal cards from Sky & Telescope, Astronomy, or Odyssey magazine in which you wish to continue your subscription. The expiration date shown on your newsletter mailing label is the only notice that your membership in SDAA will expire. Dues are \$35 for Contributing Memberships; \$25 for Senior (Basic) Membership; \$3 for each Family membership. In addition to the club dues the annual rates for magazines available at the club discount are: Sky & Telescope \$29.95, Astronomy \$29, and Odyssey \$25.46. Make checks payable to S.D. Astronomy Assn. PLEASE DO NOT send renewals directly to Sky Publishing. They return them to us for processing.

SAN DIEGO ASTRONOMY ASSOCIATION
P.O. BOX 23215
SAN DIEGO, CA 92193-3215
(619) 645-8940
VOL. XXXIX • ISSUE 04 • APRIL 2003
PUBLISHED MONTHLY BY THE SAN DIEGO ASTRONOMY ASSOCIATION
SUBSCRIPTION \$8.00/YEAR • SINGLE ISSUE 75¢

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 3489
SAN DIEGO, CA.