

San Diego Astronomy Association

Celebrating 40 Years of Astronomical Outreach



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<http://www.sdaa.org>
A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

News and Notes

January 2004

SDAA Business Meeting

Will be held at:

SKF Condition Monitoring
4141 Ruffin Road
San Diego, CA 92123-1841
January 13th at 7:00 pm

Program Meeting "Beginner's Night" January 21st 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

CONTENTS

January 2004 Vol. XXXX Issue 1
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San Diego Astronomy Association
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Amateur Astronomer	1
Astronomy 101	2
Board Meeting Minutes	3
NASA's Space Place	4
Skywatch	5
Contact Information	6
Events Calendar	7

Amateur Astronomer by Jeff, Robin & Laura Buckner

Amateur astronomer...I am the epitome of this phrase. I still don't know the constellations, I have a hard time finding basic things in the sky, and I start to get tired by 11pm.

Many years ago I joined SDAA, not because I cared what was in the sky, but because I loved my daughter who wanted to know what was out there. And we met some wonderful people who steered us up to Tierra Del Sol (thank you John and Kathy La Borde).

We attended star parties and waited patiently for years before we got a private pad site. Then we camped on it and wandered through the dark, talking to so many people and viewing so many amazing things that were otherwise out of our reach (I couldn't afford the instruments we were being allowed to view through). Everyone was always so helpful and willing to share, teaching us of the wonders being uncovered in the night.

My oldest child is off to college now, and with her she took a knowledge of the sky and an interest in the universe that she will carry with her for life. We still camp regularly at Tierra Del Sol. My youngest daughter has taken an interest in it, and I just purchased my first go-to scope. I can see this whole amateur astronomy thing has grown on me over time too.

So when I pick up my newsletter and read about some of the problems the club is having at the site - people getting upset, yelling at each other - I can only apologize for all of the others like myself,

amateurs who sometimes don't know better. Or those who bring others out to experience the cosmos up close, others who don't have the "instinct" of the night you have all picked up after many years.

I am sorry for all the pictures that were ruined. Sorry if one of us made you angry, asked another stupid question, or bumped your scope out of alignment. Really, we are sorry.

And I want to thank all of you who have put up with us for all these years, smiling while offering up yet another tidbit of useful information, allowing us amateurs to view through equipment that cost thousands of your hard-earned dollars and countless hours to master, taking the time to show the kids not only astronomers doing their astronomy thing, but showing them the goodwill and cooperation that makes SDAA what it is: 500 plus individuals with a common interest, banding together to share in the universe. It is this "together" that has helped the club grow, and helped finance improvements to Tierra Del Sol. This "together" is what encouraged me and my daughters to join in with these people of the night, all of you good people.

Thank you for allowing us to be part of the group.



Astronomy 101

Astronomy 101 by Scott Baker

Venus Rising

You've all probably noticed that bright object on the western horizon just after sunset, and maybe your kids have asked, "What's that star called?" This "Evening Star" is the planet Venus, and now through June it will be in our Western sky. Because Venus is so bright and shiny - it's the third brightest object in our sky next to the sun and moon - the ancients named the planet after the goddess of love and beauty. Other civilizations thought that Venus was made up of two objects, the morning star, called Eosphorus, and the evening star, called Hesperus.

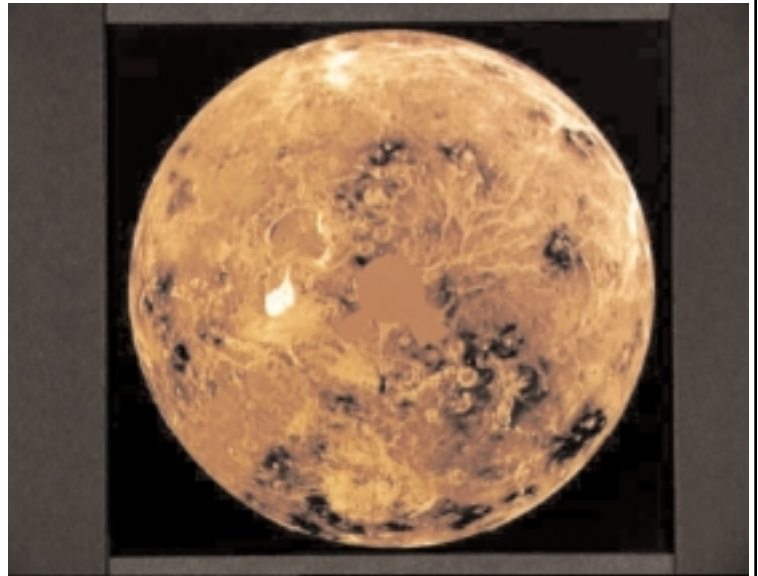
Venus is the second planet from the sun and the sixth largest in our solar system. Its orbit is the most circular of all the planets and because it is "inferior" (its orbit is closer to the sun than ours), it shows phases like our moon when observed with a telescope.

Venus' rotation is somewhat unusual in that it is very slow (243 Earth days per

Venus day); its "day" actually is slower than its year! Its rotation is also "retrograde," meaning it rotates clockwise when looking down on its North pole. This is contrary to most of the planetary bodies in our solar system. Only Uranus and Pluto rotate the same way as Venus. In addition, the periods of Venus' rotation and of its orbit are synchronized such

that it always presents the same face toward Earth when the two planets are at their closest approach. Whether this is a resonance effect or merely a coincidence is not known.

Venus is often considered Earth's "sister" planet. Earth and Venus are very close in size with Venus being about 95% of



Global view of Venus from Magellan, Pioneer, and Venera data. Image courtesy of NASA's JSC Digital Image Collection: <http://images.jsc.nasa.gov>

Earth's diameter and 80% of Earth's mass. However, the similarities end there. Venus' atmosphere is much denser than Earth's, with the pressure on the surface equivalent to being one kilometer underwater on Earth! The 100% cloud cover that makes Venus so bright is also what holds in the heat of the planet and makes the surface temperatures a balmy 750°F!

As Venus climbs higher in the sky over the next few months, look for some interesting events to occur. On the 30th of December, the planets Venus and Neptune will be within two degrees of each other (called a conjunction). On the 14th of January, Venus and Uranus will be in conjunction with less than one degree of separation! You'll have to look quickly to catch these planetary conjunctions, since when it's dark enough to see the outer planets, they'll both be very close to the western horizon. On or about April 12th, Venus will have reached its highest point in the western sky. It will take almost two months for Venus to inch its way toward the setting sun, where, in June, it makes the transition from "Evening Star" to "Morning Star."



Botticelli's *The Birth of Venus* (c. 1485)



San Diego Astronomy Association

Board Meeting Minutes by Diana Baker

The meeting was called to order at 7:04 pm on December 9, 2003. In attendance were Brian Staples, Brian McFarland, Jennifer Pesqueira, Shawn and Diana Kelly, Scott and Diana Baker, Jim Traweek, Bill Griffith, Mike Quinn, Jerry Hilburn, Peter Magro, Lou Jackson and Peter DeBaan.

The last meeting's minutes were read online. A motion was made to approve the minutes; it was seconded and approved.

Jennifer Pesqueira gave the Treasurer's Report: There are now 590 members. Jennifer will send out a letter about property taxes. The club will investigate the possibility of insuring the club scopes but not the loaner scopes. A motion was made to approve the Treasurer's Report; it was seconded and approved.

Shawn Kelly gave the Site Maintenance Report: No work has been done on the pump house (the roof hasn't yet fallen in). He started to remove weeds and a tree for the water tanks, but the vendor stopped contacting Shawn. TDS is low on paper supplies, and the light bulbs were changed.

Jim Traweek gave the Observatory Report: Everything is fine. Jim is investigating thermal coverings for the west side of the club observatory, with input from Peter DeBaan. Jim made a list (with pictures) of loaner scopes for the web page. A motion was made to buy three eyepiece sets and three reflex finders for the loaner scopes; it was seconded and approved. No report on the 30", and we're stalled on the dome. The 14 1/4" mirror is still being worked on.

Brian McFarland gave the Private Pad Report: there is nothing new to report.

The Star Party Report was given: The city gave the SDAA eight parking passes to use at Stars in the Park and other events. There was no report on the school star parties.

Diana Kelly gave the Library/Education Report: Nothing was done about the library, but she will get stuff done by this

weekend.

Scott Baker gave the Membership Report: Scott Kardel was a good guest speaker at the last Program meeting, and Scott Baker has asked Scott Kardel to speak again at the Annual Banquet.

Mike Quinn gave the Newsletter Report: Last month's newsletter went out, and a new newsletter person will be needed by May or June to replace Julie Quinn. There might be some delays of January's newsletter due to the holidays.

The Website Report was given: There is nothing new to report about the website.

In Old Business, the Stars in the Park program is back in full swing with eight parking permits. In the status of the Nominating Committee, the four board positions have been filled, and Diana Baker will continue on as Recording Secretary. We still have a dire need for a

Treasurer to replace Jennifer Pesqueira. Banquet Status: It was decided to go ahead with confirming Karl Strauss as the banquet facility with the date of February 7th. (Update to minutes - This last item has changed, stay tuned for further news.)

In New Business, AISIG classes were mentioned, as was the re-mention of Clairemont High School's Observatory being in need of revamping. Jerry Hilburn proposed a pad arrangement at TDS for AISIG. Several ideas were discussed, and nothing was settled.

A motion was made to adjourn at 8:47pm.

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, click the merchandise link on the SDAA website at www.sdaa.org or call Diana Kelly at (858) 603-3323.





So Little Time, So Many Galaxies

by Dr. Tony Phillips

Fourteen billion years ago, just after the Big Bang, the universe was an expanding fireball, white hot and nearly uniform. All of space was filled with elementary particles and radiation. "Soupy" is how some cosmologists describe it.

Today the universe is completely different. It's still expanding-even accelerating-but there the resemblance ends. The universe we live in now is "lumpy." Great cold voids are sprinkled with glowing galaxies. In galaxies, there are stars. Around stars, there are planets. On one planet, at least, there is life.

How we got from there to here is a mystery.

Finding out is the goal the Galaxy Evolution Explorer, "GALEX" for short, a small NASA spacecraft launched into Earth orbit April 28, 2003. GALEX carries an ultraviolet (UV) telescope for studying galaxies as far away as 10 billion light-years.

"GALEX is a time machine," says astronomer Peter Friedman of Caltech. Because light takes time to travel from place to place, pictures of distant galaxies reveal them as they were in the past. "GALEX is investigating the evolution of galaxies over 80% of the history of our universe."

The Hubble Space Telescope can see faraway galaxies, too, but GALEX has an advantage: While Hubble looks in great detail at very small

regions of the sky, GALEX is surveying the entire sky, cataloging millions of galaxies during its 2-year mission.

GALEX is a UV mission for a reason. Friedman explains: "UV radiation is a telltale sign of star birth." Stars are born when knots of gas condense in interstellar clouds. The ones we see best are the big ones-massive stars that burn hot and emit lots of UV radiation. "These stars are short-lived, so they trace recent star formation."

Understanding star formation is crucial to studies of galaxy evolution. When galaxies collide, star formation surges. When galaxies run out of interstellar gas, star formation wanes. In galaxies like the Milky Way, spiral arms are outlined by star-forming clouds. The shapes of galaxies, their history and fate-they're all connected by star formation.

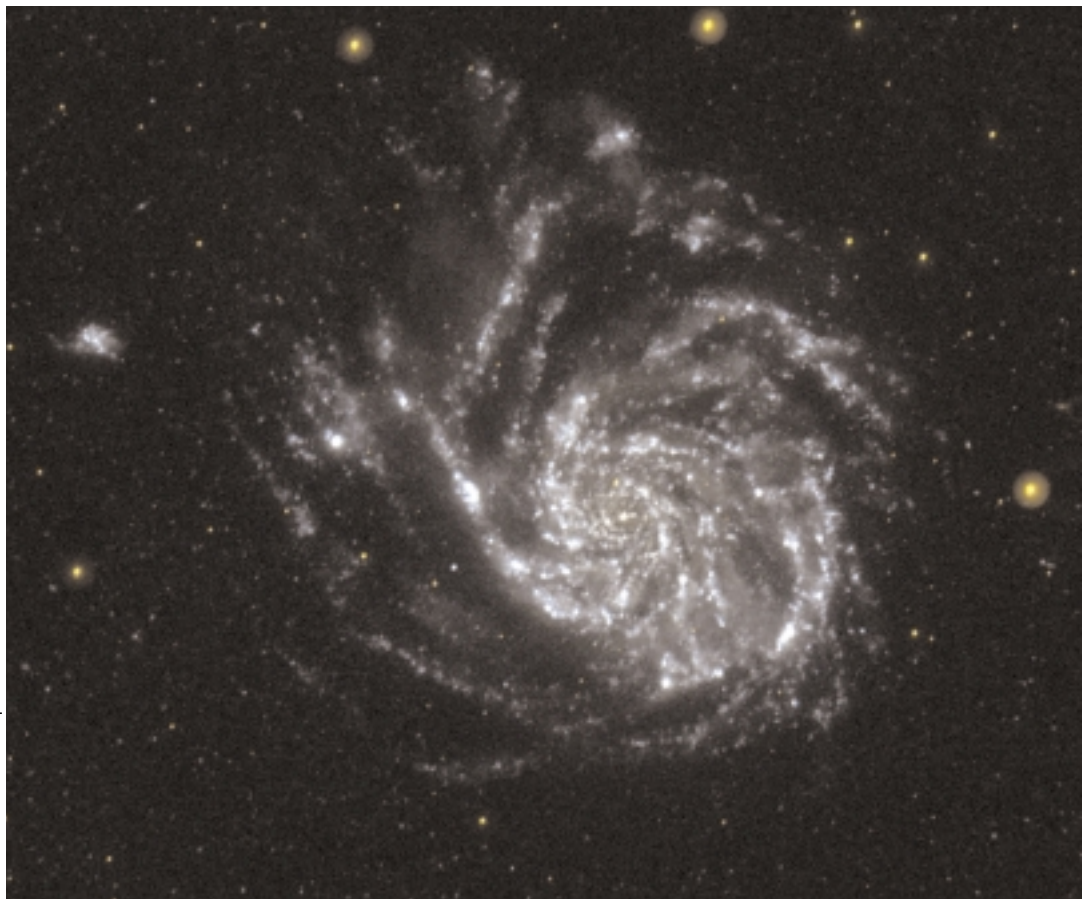
Even life hinges on star formation, because stars make heavy elements for planets and organic molecules.

"Our measurements of UV radiation will tell us both the rate at which stars are forming in galaxies and the distances of the galaxies," says Friedman.

How did we get here? GALEX will show the way.

Find out more about GALEX at www.galex.caltech.edu. For children, visit The Space Place at spaceplace.nasa.gov/galex_make1.htm and make a beautiful galactic mobile while learning about some of the different shapes galaxies can take.

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



This image of Messier 101 (M101), aka the "Pinwheel Galaxy," was taken in two orbits of GALEX on June 20, 2003. M101 is 20 million light years away.



San Diego Astronomy Association

SkyWatch for January, 2004 John Mood



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

Wed., 7 Jan. ---- FULL MOON, 7:40 a.m.

Wed., 14 Jan. ---- VENUS passes only a degree from URANUS [see below].

Sat., 17 Jan. ---- PUBLIC STAR PARTY @ Tierra del Sol.

Wed., 21 Jan. ---- NEW MOON, 1:05 p.m.

Sat., 24 Jan. ---- MEMBER STAR PARTY @ Tierra del Sol.

Sat., 31 Jan. ---- PUBLIC STAR PARTY @ Tierra del Sol.

EVENING PLANETS:

VENUS [*] is still brightening as it moves from Capricornus the Goat into Aquarius the Water Carrier. URANUS [*1/2] is also in Aquarius when Venus passes it on the 14th, a good chance to spot Uranus easily [see above]. MARS [*] is in Pisces the Fishes as 3 spacecraft attempt to land on it this month; keep yr fingers crossed - of the 31 previous spacecraft sent to Mars, 19 failed completely & 3 partially failed; only 9 (29%) succeeded as planned! SATURN [*] has moved into Gemini the Twins & is at its best; need I say more??? JUPITER [*] is still in Leo the Lion & the best news is that it has finally become an evening planet!

MORNING PLANETS:

MERCURY [* 1/2] becomes visible in Sagittarius the Archer by the 2nd week of the month.

FOR ALL OBSERVERS, BEGINNING & EXPERIENCED

I'm going to vary my usual routine the next few months to talk about what I consider to be the best book on astronomy ever written, BURNHAM'S CELESTIAL HANDBOOK: An Observer's Guide to the Universe Beyond the Solar System by Robert Burnham, Jr. You may say, "What? A book? What about my terrific software programs?" Well, I know of no software that can match Burnham either, so stay with me. Even you GOTO telescope owners will discover that this book is yr best, yes, best single resource!!!

SDAA Editorial Staff



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Diana Baker
Scott Baker
Jeff, Robin & Laura Buckner
John Mood
Jennifer Pesqueira
Dr. Tony Phillips

Its 1st 2 volumes were self-published in '66, then extensively revised w/ an added 3rd volume & published by Dover in 1978. It has been in print ever since.

It is truly encyclopedic in scope, w/ 2138 pages, more than 750 photos & more than 450 diagrams & charts. Its 100+-page introduction is a mini-course in astronomy, going from EZ to difficult (for both the beginning AND the experienced!). In addition, Burnham has scattered throughout the 3 volumes 26 major articles ranging from 9 to 48 pages in length on a series of specialized astronomical topics.

As if all of this wasn't enuf, Burnham includes an astonishing variety of myths, history, legends, poetry, architecture, literature, art, music & philosophy from around the globe relating to astronomy. For ex., he has more than 2 pages on the very name & meaning of the word "Sirius," including Greek, Arabic, Egyptian, Roman, Sanskrit, Babylonian, Akkadian & Hindu, quoting from authors Homer & Virgil, Plutarch & Dante, & even scifi writer Isaac Asimov!

See what I mean? A "humanist astronomy" book, & a total one at that!

More next month.

TIERRA DEL SOL

LAT = 32° 36' 48" 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.

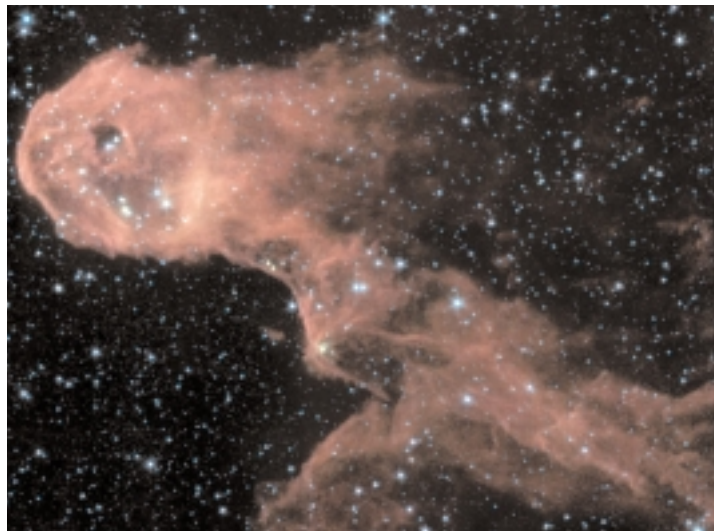
¡HAPPY VIEWING!



San Diego Astronomy Association

Spitzer Images Released

A new window to the universe has opened with the release of the first dazzling images from NASA's newly named Spitzer Space Telescope, formerly known as the Space Infrared Telescope Facility. Visit <http://www.spitzer.caltech.edu> for details and more images.



Spitzer/IRAC composite image of a dark globule in IC 1396. Image courtesy of NASA/JPL-Caltech/W. Reach (SSC/Caltech).



Messier 81. Image courtesy of NASA/JPL-Caltech/S. Willner (Harvard-Smithsonian Center for Astrophysics).

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2003 Board of Directors and Chairpersons

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SDAA Calendar of Events

January 2004

S	M	T	W	T	F	S
				1	2	3
4	5	6	7 ○ Stars in the Park Balboa Park	8	9 Stars in the Park MTRP	10
11	12	13 SDAA Board Meeting SKF 7pm	14 Star Party at Whitman Elem School, 7:00pm	15 ●	16	17 Star Party at TDS
18	19	20	21 ● Program Meeting MTRP 7pm	22	23	24 Camp w/ the Stars Vallecito Stn
25	26	27	28	29 ● Star Party at Ada Harris Elem School, 7:00pm	30 Star Party at Miramar Ranch Elem, 7:00pm	31 Star Party at TDS

The Back Page

Newsletter Editor(s) Sought by Julie Quinn

I've enjoyed helping with the production of this newsletter for the last year and a half, but I'll soon be relocating to the dark skies of Michigan, and my cohort Bret Akers has decided to hang up his editor's hat after two years, so, come spring, the SDAA will need someone to take over the editing of the News & Notes. If you have a few hours a month to give to your astronomy club, please contact me at newsletter@sdaa.org. Experience with page layout, especially QuarkXpress, would be optimal, but any-

one with computer experience and a desire to help is welcome to apply.

Treasurer's Report by Jennifer Pesqueira

With the addition of the following members we now have a total of 588 SDAA members. Please welcome Michael Abel, Ronald Bostick, Chuck Falcone, Steven Kemp, Robert Lyons, James Phelps, Rajan Subramanian, Tom Thacher and John Walker. Welcome to SDAA and may you enjoy clear dark skies!

Be on the Lookout!

Look for your invitation to the SDAA banquet to arrive in your mailbox in the weeks to come. This annual event is sure to include great food, intriguing conversation, and the opportunity to win fabulous prizes. Don't miss out!



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 \$32.95, 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.

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