

# SCAS COAL SACK

EDUCATING SOUTH FLORIDA SINCE 1922

JUNE 2006

## A CAREER IN ASTRONOMY June Public Program

-Barb Yager

FRIDAY, JUNE 16th, 8 pm, SCAS proudly presents our distinguished speaker DR. JAMES R. WEBB, FIU research astronomer and SCAS Honorary member in the FIU Astronomy Center, Physics Building, University Park. He will guide you through the 'hoops' of making astronomy your career.

You will learn what high school subjects require top grades for a firm foundation on college and grad student levels...a major/minor course...required academic degrees...how to qualify for science projects and high school science programs offered by local universities.

On the professional level: be motivated to pursue your special interest with lots of patience! In the 21st century, very high-tech equipment and very rapid computers

have opened the door to a greater variety of careers related to astronomy: asteroid impacts (present/future)...archaeoastronomy...comet-chasing...deep-space...qualified meteor-hunting...planetary geology/meteorology...radio astronomy...solar research...writer/photographer...instructor...just to name a few. Research the job market, check salaries with major companies, send well-written, brief resumes of your accomplishments...keep a job file so you will have information for future applications. These days, no job is etched in granite!

Several agencies, companies, industries, major

media/publications rely on astronomers. An engineering background could steer you to a wide variety of exciting departments with JPL (Jet Propulsion Lab, Pasadena CA—a major company for space exploration), NASA facilities at Ames Base, California... Huntsville, Alabama... Kennedy Space Ctr., Florida and a list of space-related research laboratories nationwide. Research astronomers working at huge professional observatories are often on a time restriction and budget limitations.

Welcome the amateur astronomer! For the "backyard astronomer" you would need: comfy folding chair and table, star map, a beverage, bug cream, basic knowledge of the seasonal sky, decent brand of telescope, a variety of eye-pieces, filters and good camera for photo/imaging if you plan to go that route. You will find all of the above in a variety of sizes, colors and prices. Purchase with caution! It's wise to check with SCAS astronomers before you make your selection.

continued on p. 3

### Inside this issue:

June program  
page 1

members  
Page 3

almanac  
Page 4

star map  
page 5

may events  
Page 6

PLANETS  
page 7

FOR SCAS/NASA NEWS  
CALL THE 24-HOUR  
HOTLINE:

305 661-1375

OR VISIT THE

NEW SCAS WEB SITE:

HTTP://WWW.SCAS.ORG



Students can get a head start! Go to <http://quest.nasa.gov/lunar/outpostchallenge/index.html> to enter the Lunar Outpost Design Challenge!

# The Coal Sack

The Coal Sack is a monthly publication of the Southern Cross Astronomical Society, Inc., Miami, Florida

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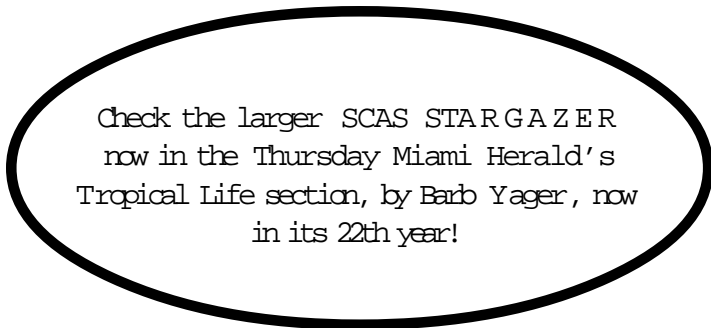
Material for the Coal Sack must be submitted to the Editor by the 25th of the month prior to publication. Please use e-mail when possible.  
Change of Address: Please notify Managing Editor Barb Yager with change of address or other membership information.

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## CLASSIFIED

### NEW WEBSITE/NEWSLETTER

Please visit Coal Sack editor Lisa Merritt's new website, [www.pegasuswriter.com](http://www.pegasuswriter.com), and sign up for our free monthly newsletter for non-profits and fundraising professionals, or browse our ebook selection.

NEW EYE-PIECE SALE! University Optics MK-70, 2" 40mm eye-piece. \$150. Vixen Lanthanum 2" or 1 1/4" 17mm eye-piece, 65 degree field. \$150. Call Chris: 305-776-1559 anytime.

THE ART OF COLLECTING METEORITES, an in-depth 232-pg. entertaining guide-book with color photos and references by astronomer/explorer Kevin Kitchinka who describes this exciting and educational hobby based on his adventures in the Andes and his friendships with renowned scientists and collectors. Only \$10.00 ! Call: 305-661-1375.

### SUPER IMAGING OFFER!

Do you have top-quality solar/celestial images & photos? SCAS member LARRY APPLE, President, Associated Photo & Imaging, 19 SW 6th Street (near Miami River) has offered to enlarge your color graphics to any size (including large wall murals) FREE! Pls contact LARRY: [larrya@apimaging.com](mailto:larrya@apimaging.com) or 305-373-4774/ 305-495-7709 (cel).

Send in your classified ads to [PegasusLM@earthlink.net](mailto:PegasusLM@earthlink.net) or [BarbYager@aol.com](mailto:BarbYager@aol.com)

# MEMBERS IN THE NEWS

-Barb Yager

DR. DON PARKER, renowned planetary imager and Executive Director of the Association of Lunar & Planetary Observers, authored and produced a stunning photo article p.84-87 in June 2006 Astronomy magazine entitled "Relive the Red Planet's Big Show"— a review of the Mars opposition 11/07/05 that showcases DON's incredible images. Thanks to digital imaging, hi-tech equipment and processing, more than 4500 CCD images/drawings by observers from 16 countries were quickly received by ALPO, British Astro. Assoc. (BAA) and Oriental Astro. Assoc. (OAA in Tokyo). DON will present a Mars paper at the July ALPO Meeting in Atlanta, Georgia. DON was the keynote speaker at the NE Astro-Imaging Forum (NEAIF) in Suffern, NY where he also conducted image processing workshops last month...LOU COX and his wife recently returned home to Ottawa after visiting relatives in France in April...fomer SCAS Board member/Historian RIC BABCOCK and lovely wife GAIL, of Salinas, CA, have joined the Potawami Indian tribe. RIC -Gentle Lightheart and GAIL- Running/leaping deer woman will celebrate the Sundance event in early July. RIC was Vice President of the Native American Indian Chapter at FIU.

# OFF CAMPUS

-Barb Yager

GEORGE JEREZ just finished his sophomore year at Christopher Columbus Senior High and soon will be en route to Ireland with 40 students from Miami for the month of June! The lucky students participate in the "People To People Student Ambassadors" program that provides high school and college credits. GEORGE was a 2003 SCAS Science Fair Winner. Congratulations to ROGER MURO, graduated from G. Holmes Braddock Senior High with a class rank of 29! He is employed at a UPS store this summer, originally had planned to attend Embry-Riddle Aviation School, Arizona, to study Space Physics. He recently switched to FIU where he will study undergraduate Physics, and hopefully have SCAS Honors member and popular Professor Caroline Simpson, FIU radio astronomer, as instructor.

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## MEMBERSHIP UPDATE

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All SCAS membership January-May 31st has been processed and mailed. Subscriptions were sent to each publisher. Cards and renewal applications are still being printed.

-Barb Yager, Membership Secretary

# Career Opportunities for Astronomers....

continued from p. 1

'Fledgling amateurs' can develop an expertise that qualifies them to assist professionals. For example, years ago world-acclaimed SCAS astronomers Dr. Don Parker and Jeff Beish were invited to send their planetary images and meteorology to the late Carl Sagan at Cornell University. Recently, many of our SCAS members have developed a professional level of astronomy: research, imaging and teaching.

DR. WEBB will give plenty of advice how to get started in a career in astronomy. A popular FIU research astronomer and professor, he was the "generator" to establish and build the 0.9 telescope with a CCD camera 7500 ft. up at the Kitt Peak National Observatory, Tucson, AZ. Weather permitting, this enables students to use the remote-controlled telescope from their computer in the FIU Physics Dept., University Park. FIU is a member of the S.A.R.A. (Southeastern Association of Research Astronomers) a Consortium for 7 universities in SE United States: F.I.T., Clemson, East Tennessee State, Valdosta State and Ball State University, Indiana (Dr. Webb's alumnus). He has presented astronomy programs to schools, SCAS, universities, the American Astronomical Society, a variety of astronomy clubs, and civic organizations. He has received grants for his research from the National Science Foundation, and will spend this summer working on his gamma ray research instead of being in the classroom. He is also the "generator" for the future FIU 5-floor student observatory!

Bring your note-pads to CP-145, FIU Physics Bldg., 8 pm, FRIDAY, JUNE 16th and learn how to 'launch' your career in astronomy. SCAS astronomy programs include food buffet, prizes, lively Q & A, in the NE area of University Park, /SW 109th Ave./SW 8th Street where the large campus parking lot is opposite the FIU Chemistry-Physics Building. FREE!

The scope of a career in astronomy has become infinite...the educational facilities and opportunities have become more accessible...the marketability of astronomy has sky-rocketed...follow your dreams! Call: SCAS Hotline: 305-661-1375 or access [www.scas.org](http://www.scas.org)

# JUNE ALMANAC AT A GLANCE

FIRST QTR. MOON	Saturday, 3 <sup>rd</sup>	7:06 pm
FULL 'HONEY' MOON	Sunday, 11 <sup>th</sup>	2:03 pm
LAST QTR. MOON	Sunday, 18 <sup>th</sup>	10:08 am
NEW MOON	Sunday, 25 <sup>th</sup>	12:05 pm

## JULY HIGHLIGHTS

SUNRISE: 6:22 am (mid-month) SUNSET: 8:16 pm (2 weeks)

MORNING SKIES:

1st- JUPITER sets on the WSW horizon at dawn.

VENUS, Morning Star rises in the ENE before 6 a.m. in Aries and the winter stars.

14th- Earliest sunrises occur this week.

20th- As dawn breaks, the waning MOON floats beside the SEVEN SISTERS in the east.

22nd/23rd- VENUS, old MOON and the PLEIADES form a triangle near the ENE horizon.

24th- At dawn, ALDEBARAN (red eye of Taurus the Bull) peers over the ENE horizon.

Bright CAPELLA leads Auriga, Charioteer, above the NE horizon.

The Great Square of PEGASUS glides toward the Zenith. CASSIOPEIA and ANDROMEDA arrive in the northeast. VEGA guides the Summer Triangle lower in the NW. NEPTUNE, in Capricornus, drifts into the SW. URANUS lies in Aquarius in the south.

21st-SUMMER SOLSTICE occurs at 8:26 a.m. when the SUN reaches its northernmost point from the Equator—the Tropic of Cancer.

EVENING SKIES: 4 planets are visible

Tiny MERCURY appears low on the NW horizon and is visible all month.

Bright golden JUPITER & its Moon system glow in Libra in the SE.

Silver-ringed SATURN lies near the BEEHIVE cluster in Cancer in the west.

17th- Dim MARS meets SATURN beside the BEEHIVE cluster in Cancer.

PROCYON, Little Dog, crawls onto the western horizon. CORVUS, Crow leads SPICA, in Virgo, into the SW. Westbound LEO the Lion approaches the planetary pair. The Big Dipper swings into the NW.

Bright Arcturus, Herdsman, sparkles in the west. Hercules brings bright VEGA & the Summer Triangle toward the Zenith.

Cygnus the Swan soars within the Triangle.

20th- MERCURY reaches its highest altitude above the NW horizon.

27th- SUPERB VIEWS IN BINOCULARS—at dusk, MERCURY aligns with the GEMINI Twins. A young crescent MOON floats between MERCURY & SATURN. MARS drifts away from SATURN.

28th- Crescent MOON nudges dim MARS low in the NW. SATURN & MERCURY line up below the MOON. Huge Scorpius crawls across the south, followed by the Sagittarian Teapot.

The SUMMER MILKY WAY (River of Stars) arches from the Teapot to the Triangle.

2nd- By 5:30 a.m. brilliant VENUS rises in the HYADES cluster beside Aldebaran, in Taurus the Bull near the ENE horizon.

6th- The bright MOON leads Scorpius across the south after sunset.

9th- The nearly full MOON glides across the Sagittarian Teapot in the SE.

28th- DELTA AQUARID METEORS low in the south may produce 20/hr.

31st- By 5:30 a.m. The Gemini Twins rise above the NE horizon—left of VENUS. Tiny MERCURY appears directly below VENUS. ORION reclines to the right of VENUS.

### Moon Set/Rise Table for JUN/JUL

Date (m/d)	Moon Rise	Moon Set
15/6/2006	—	10:17
16/6/2006	0:02	11:23
17/6/2006	0:40	12:27
18/6/2006	1:15	13:28
19/6/2006	1:48	14:30
20/6/2006	2:22	15:32
21/6/2006	2:58	16:35
22/6/2006	3:38	17:39
23/6/2006	4:23	18:44
24/6/2006	5:14	19:46
25/6/2006	6:10	20:43
26/6/2006	7:09	21:33
27/6/2006	8:09	22:16
28/6/2006	9:08	22:53
29/6/2006	10:03	23:26
30/6/2006	10:56	23:55
1/7/2006	11:47	—
2/7/2006	12:37	0:23
3/7/2006	13:28	0:50
4/7/2006	14:20	1:18
5/7/2006	15:14	1:48
6/7/2006	16:13	2:22
7/7/2006	17:14	3:01
8/7/2006	18:18	3:48
9/7/2006	19:21	4:42
10/7/2006	20:20	5:45
11/7/2006	21:12	6:53
12/7/2006	21:59	8:03
13/7/2006	22:39	9:12
14/7/2006	23:16	10:18

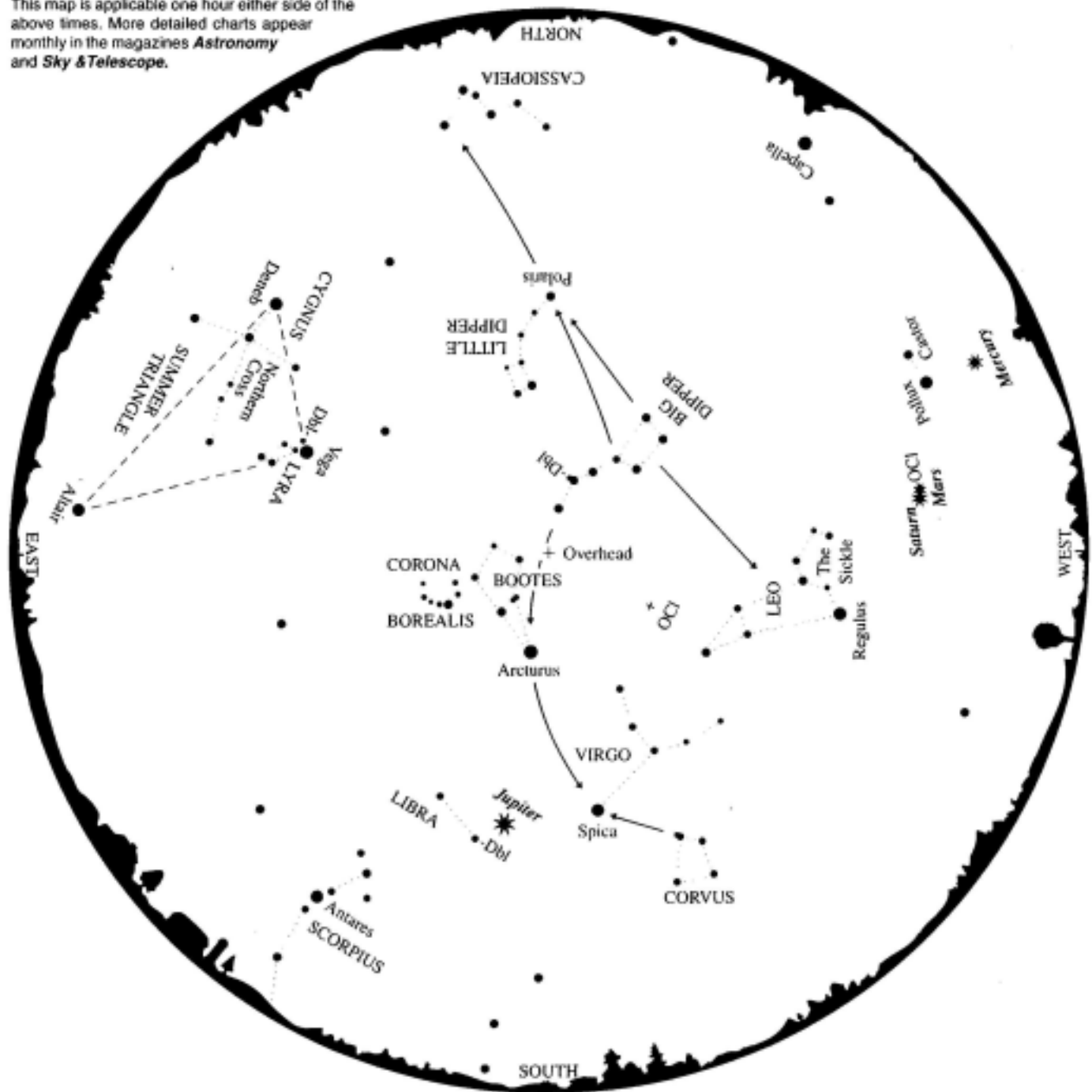
# June Evening Skies

This chart is drawn for latitude 40° north, but should be useful to stargazers throughout the continental United States. It represents the sky at the following local daylight times:

Late May	11 p.m.
Early June	10 p.m.
Late June	9 p.m.

This map is applicable one hour either side of the above times. More detailed charts appear monthly in the magazines *Astronomy* and *Sky & Telescope*.

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 Subscription: \$11.00 per year, from *Sky Calendar*.  
 Abrams Planetarium, Michigan State University,  
 East Lansing, MI 48824-1324.



The planets Mercury, Mars, Jupiter, and Saturn are plotted for mid-June 2006. Twelve objects of first magnitude or brighter are visible. In order of brightness they are: Jupiter, Arcturus, Vega, Capella, Mercury, Saturn, Altair, Antares, Spica, Pollux, Deneb, and Regulus. In addition to stars, other objects that should be visible to the unaided eye are labeled on the map. The double star (Dbl) at the bend of the handle of the Big Dipper is easily detected.

The double in Libra is more challenging. Much more difficult is the double star near Vega in Lyra. The open or galactic star cluster (OCI) known as the "Beehive," can be located near Mars and Saturn, between the Gemini twins (Pollux, Castor) and Leo. Coma Berenices, "The hair of Berenice," is another open cluster (OCI), between Leo and Bootes. Try to observe these objects with unaided eye and binoculars.

—D. David Batch

## MAY EVENTS

-Barb Yager

### School Programs-

SCAS members Paul Buscher, Russ Harcha, Mike Smith and Barb Yager coordinated Star Parties at Bowman, Foster Ashe (Paul is computer specialist) May 2nd, and at South Miami Senior High (Russ is Physics instructor) May 5th. Career Day at Wesley Matthew Elementary May 4th was anchored by Mike Smith and his safe solar viewing equipment arranged in the field to a steady stream of very excited kids- and Barb fielded questions to 3 classes (which quickly became 6 classes) of delightful students, explained the celestial and solar exhibits and discussed fascinating careers related to astronomy and space.

### National Astronomy Day-

SCAS members celebrated National Astronomy Day Saturday, May 6th at the Museum of Science. In the auditorium, President Lester Shalloway entertained the audience with his presentation of Amateur Astronomy, how to get started, the basic equipment, observing areas, including views of the Annual SCAS Winter Star Party in the Florida Keys. Winter Star Party Founder Tippy D'Auria presented Jupiter & the 2006 Opposition, followed by his Telescope Workshop. Barb and Margarita spoke with hundreds of visitors inquiring about SCAS as they collected SCAS, NASA and Int'l Dark Sky information from the three long tables stacked with material in the Museum lobby. DVD players and a live TV feed displayed the actual solar activity occurring on the Sun, through the SCAS C-14 outside.

All afternoon dozens of visitors lined up to catch spectacular views of solar prominences and sun spots in Mike Smith's C-11 in the front courtyard and in the new SCAS Orion Solarscope operated by

Lester Shalloway. It was a very busy and successful event!

### SCAS Public Astronomy-

This past season, January-May has been the busiest on record for the regular Saturday SCAS public events. Continuous beautiful Spring weather set the stage for visitors at Saturday morning solar viewing with President Lester Shalloway and Mike Smith at MetroZoo. Crystal clear and breezy, bug-free Saturday evenings at our SCAS Saturday Nite Live encouraged hundreds of visitors streaming into Bill Sadowski Park to catch magnificent views of Saturn, Jupiter, Mars, star clusters and a fiery red full Moon rising behind the trees in our hi-tech SCAS equipment- including our 18" Dob, the largest 'scope in Miami-Dade for public use.

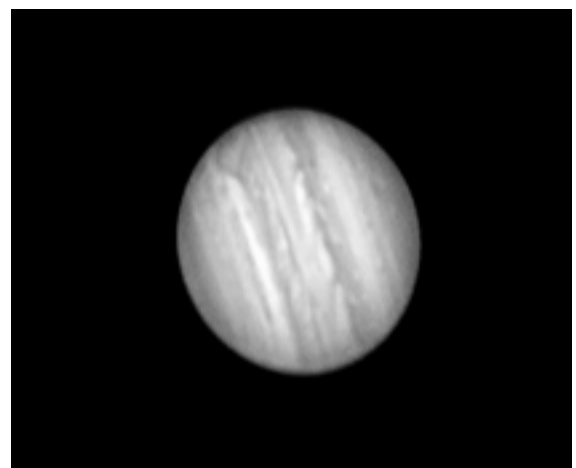
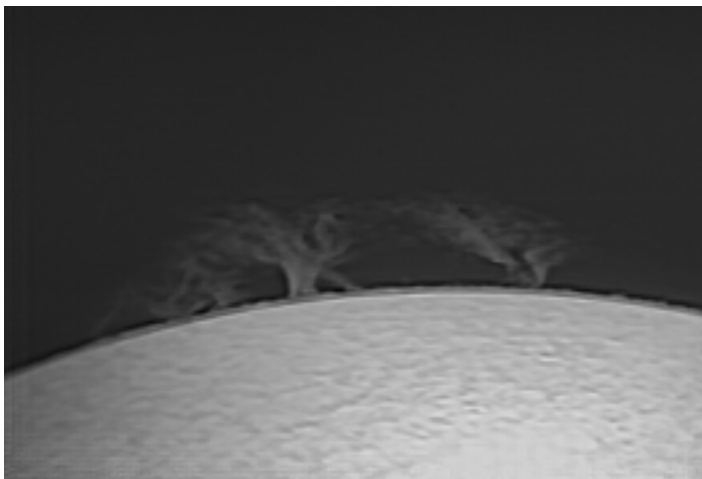
A standing ovation of appreciation to our friendly and loyal SCAS Astros: Ashley Stevens, Jim Rose, Andres Valencia, Sergio Figuera, Ximena Maureira, Nick Stingone, Mike Smith, Russ Harcha, Boris Ortiz, Steve & Vicki Van Ryn, Carlos Zuniga, and Manny Castro who continually guide adults, families and students across the heavens, assist with equipment and encourage them to "Expand Their Horizons" - quite evident by their return visits

The popular SCAS continues to Bring Astronomy To You Since 1922.

### MAY MEMBER STAR PARTY

A 'fair' weather forecast prompted Tim Kahn to alert SCAS Astros to drive out to MidWay Campgrounds far out on Tamiami Trail Saturday, May 20th under a Last Quarter Moon. Tim was joined by Lester Shalloway, Steve Van Ryn, Juan Martinez, Ed Puntervold Judy Elkins & George and friends. See Lester's photo of Jupiter below.

Left below: the sun shot with the club's refractor onto video tape and then printed using registax and photo shop. Right below: Jupiter taken 5/20/06 on Tim Kahn's scope, also recorded onto video tape and printed using the two programs. Both by Lester Shalloway.



## PLANETS IN STRANGE PLACES

-Trudy E. Bell/JPL

Red star, blue star, big star, small star—planets may form around virtually any type of size star throughout the Universe, not just around mid-sized, middle-aged yellow stars like our Sun. That's the surprising implication from two recent discoveries by the 0.85 meter diam. infrared Spitzer Space Telescope.

At one extreme are two blazing blue "hypergiant" stars 180,000 light years away in the Large Magellanic Cloud—one of two companion galaxies to our Milky Way. The stars—R66 and R126 are respectively 30 and 70 times the mass of our Sun. Such hot stars have fierce solar winds. A team of scientists are mystified why dust in the neighborhood hasn't long since been blown away, yet both supergiants are surrounded by mammoth disks that could be planet-forming material.

At the other extreme is a tiny brown dwarf called Cha 110913-773444, only 500 light years away in our Milky Way. This miniature "failed star" is also surrounded by a flat disk of dust that may eventually develop into planets—this brown dwarf was discovered by a group of scientists at Penn State University. These hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons and other geological material found on Earth. Keep up with the latest findings from the Spitzer:

[www.spitzer.caltech.edu](http://www.spitzer.caltech.edu)

## SPACE NEWS

### New Weather Satellite-

A new weather satellite was launched 6:11 pm, 5/26th from KSC aboard a Delta 4 rocket fitted with a pair of 60" diameter solid rocket boosters. The 6,900 lb. GOES-N will be maneuvered into position following five adjustment burns to begin 6/02. Once the satellite is fixed at an altitude of 22,300 miles above the Equator, it will be renamed GOES-13. A 27 ft. solar panel will be unfurled 6/05th followed by additional tests

The first visible image (hopefully) from GOES-N is scheduled on 6/27th. A few days later, the Solar X-Ray Imager will send data to warn forecasters of space weather events by looking at solar flare emissions. Other GOES satellites are 'on standby' in the stratosphere

to be activated if another satellite fails or 'runs dry' of fuel. The GOES fleet takes visible, infrared, and water vapor images every 30 minutes which are sent to meteorologists to monitor storm development for short-term forecasts

NASA Shuttle Atlantis Prepares for Launch- Early June begins the assembly of the shuttle Atlantis, scheduled for the August 28 launch to take a crew to resume construction of the half-built ISS. The timetable will enable NASA to launch Atlantis on a mid-August rescue mission should serious problems occur on the Discovery's launch in July.

-Space.com 5/29/06

## ASTRONOMICAL LEAGUE

John Goss, AL Secretary

Helpful websites to our amateur astronomy club members nationwide:

-League Observing programs: [www.astroleague.org/observing.html](http://www.astroleague.org/observing.html)

-Searching for a particular book?

[www.astroleague.org/al/bookserv/bookserv.html](http://www.astroleague.org/al/bookserv/bookserv.html)

-Future events, club news: [www.astroleague.org](http://www.astroleague.org)

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**RITZ**

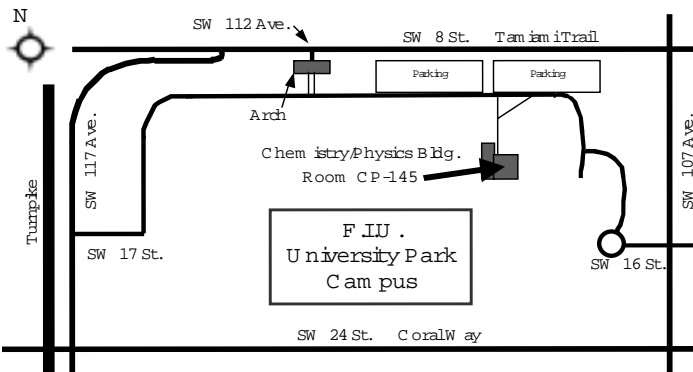
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**WOLF**

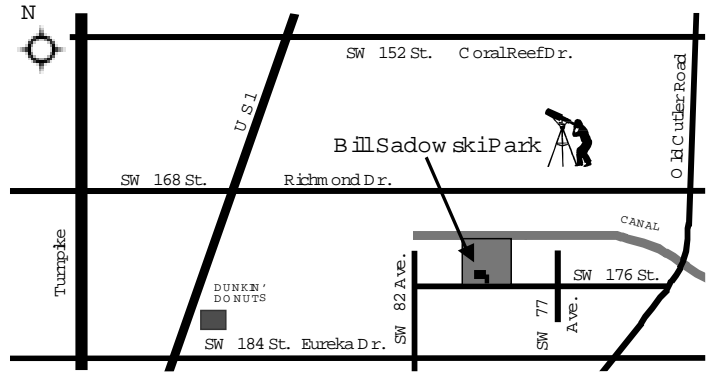
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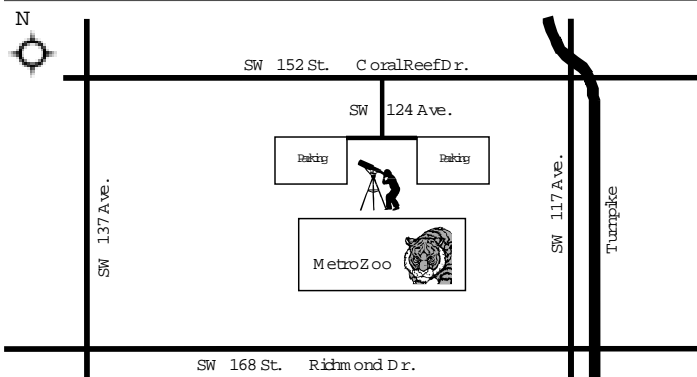
SCAS General Meetings - Third Friday of every Month



SCAS Star Gazing - Every Saturday Night 8-10pm



Saturday Solar Viewing - 10am - 12noon



For SCAS/NASA News Call  
the 24-Hour HOTLINE:  
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Or Visit the NEW SCAS website:  
**<http://www.scas.org>**

SCAS annual dues: \$25 adults/\$10 full-time students



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