

# The Spectrogram

Newsletter for the Society of Telescopes, Astronomy, and Radio

April 2006

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## April's Meeting

The next meeting of S\*T\*A\*R will be Thursday April 6th. The meeting will begin promptly at 8:00pm at the King of Kings Lutheran Church, 250 Harmony Road, Middletown.

Our program will be "Cosmology and the Big Bang" presented by Joanna Dunkley of Princeton and Oxford University.

## Spectrogram Editorship

Well folks, you've probably noticed that the Spectrogram has been getting thinner lately. I don't quite have the time to devote to it that I used to, so after 3 years I've decided to pass the baton on to somebody else at the end of this season. Producing the Spectrogram takes as little or as much time as you like with a minimum of maybe 1-2 hours/month. If you are familiar with Microsoft Word it's easy and fun to do. If you'd like to give it a go, please contact me at [gwarnes1@comcast.net](mailto:gwarnes1@comcast.net).

## May Issue

**The deadline for the next edition of the Spectrogram is Friday April 28th.** Please email any contributions to [gwarnes1@comcast.net](mailto:gwarnes1@comcast.net).

## Calendar

Sep 1, 2005 – "*The Art and Science of Early Printed Star Atlases*" - Ray Harris, LVAAS

Oct 6, 2005 – "*Searching for Earth-Like Planets: NASA's Terrestrial Planet Finder Space Telescope*" by Dr. Robert Vanderbei, Princeton University

Nov 3, 2005 – "*How does Pluto fit into the scale of the Solar System*" by Jerry Vinski, RVCC Planetarium Director

Dec 1, 2005 – "*Ringed Basins on the Moon*" by Charlie Byrne, S\*T\*A\*R

Jan 6, 2006 – "*Chandra's X-Ray View of Supernova Remnants*" by Dr. John Hughes, Rutgers University

Feb 2, 2006 – "*Science and Art as Viewed Through the Lens of Astronomy*" by Nick Lordi, S\*T\*A\*R

Mar 2, 2006 – "*An Empirical Determination of the Effect of Atmospheric Drag on Orbital Decay*" by Daniel Handlin, S\*T\*A\*R

Apr 6, 2006 – "*Cosmology*" by Dr. Joanna Dunkley, Princeton/Oxford

May 4, 2006 – "*Fire & Ice: Upcoming NASA Missions*" by Kevin Conod, Newark Museum's Dreyfuss Planetarium

Jun 1, 2006 – AGM

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## President's Corner

By Steve Walters

I'm writing my little column from the Airport Hampton Inn at Tucson AZ where I just spent three nights on Kitt Peak mountain as a participant in their "Advanced Observer's Program". Myself and two friends, one from Pennsylvania and one from California, reserved the 20" RCOS and ST10 camera for three nights of imaging. We had one really beautifully clear night and two cloudy nights. Being on the mountain for the entire three days and rubbing shoulders with the astronomers and telescope operators made even the cloudy nights enjoyable. As an AOP participant, you pretty much have a free run on the entire mountain. We were able to get into telescopes the public couldn't view and we had our meals with the staff. The facility was excellent, even the food was good.

I will have a little slide show running during "Scope and Tell" at the April meeting showing the highlights of this trip. We got to see the McMath solar telescope (the largest in the world), the 4M Mayhall telescope, the 2.1 M telescope, the 0.9M SpaceWatch telescope plus a 16" and 20" RCOS instruments. This was a dream trip, even with two cloudy nights. Also, as a side trip when we first arrived in Tucson, I was able to visit John Smith, author of CCDAutoPilot, and a really strong technical imager. We visited his "HiddenLoft" observatory that is built into the roof of his garage. It's a really cool arrangement which you can see on his website ([www.Hiddenloft.com](http://www.Hiddenloft.com)).

Soon, I will be saying farewell to you as President. I hope among you there is someone who will consider serving. Dennis O'Leary, our VP, is establishing a nominating committee so I hope you will "sign up" to at least help find people willing to serve on the board.

Clear Skies

Steve

## March Meeting Minutes

By Steve Walters

The March 2nd, 2006 meeting of S\*T\*A\*R Astronomy began at 8:06 pm. The meeting was attended by approximately 20 members and non-members. V.P. Dennis O'leary chaired the meeting and began by greeting members and non-members.

The evening's lecture "An Empirical Determination of the Effects of Atmospheric Drag on Orbital Decay" was presented by S\*T\*A\*R member Daniel Handlin. Daniel presented a very interesting talk which included video clips

showing the motions of various satellites in low altitude orbits in Leo and his methods used to determine their movements as compared to calculations. Daniel concluded his talk with humorous stories of his experiences with presenting this lecture at many science fairs. The talk concluded at 8:57.

The meeting was recessed for coffee break and "scope and tell." Stephen "Scopehead" Scaravella displayed numerous items of his observing hardware including a new William Optics focuser and a Celestron battery pack. The meeting resumed at approximately 9:20.

Events:

Dan Pontone announced the head of NASA will be lecturing at the AARP.

Randy Walton discussed the occultation of the Pleiades by the moon as is described in S&T magazine.

Dennis O'Leary announced an astronomy event at the River Plaza School on April 28th and asked for volunteers to speak about astronomy. Dan Pontone agreed to participate.

Larry Campbell noted he had great success at a star party in Holmdel. There were 400-500 people in attendance. He thanked Dan Pontone, Russ Drum, Dave Nelson, Dave Britz, Bill Morgensen, Ken Legal, John Heidema, Charles Kirby and his son, Daniel and Jay Boyarski for their support.

Object of the Month:

William Mogensen presented the moon, Saturn and the penumbral lunar eclipse which will occur on 3/14/2006 at 6:48 pm.

S.I.G. Reports:

There were no reports from the Imaging, Light Pollution, Outreach and Beginner's groups.

ATM – Gordon Waite announced the ATM sessions will resume every other Monday beginning on Feb. 13th. As usual, Gordon invited everyone to join in the fun of building a telescope, grinding a mirror or working on any astronomy related project at his shop. Gordon also reported on Gavin Warnes achieving a 1/5th wave mirror with surprisingly minimal effort. Congrats Gavin.

Observing. – Dennis O'Leary discussed the upcoming Messier Marathon to be held at Coyle field on March 25, 26.

Obsession 25: Dennis O'Leary announced the club's 25 inch scope is back in service with DSC's and new focuser soon to be installed. New Q.O. training sessions will begin in early April. (Note: the focuser has since been installed.)

The meeting was then adjourned.

## Earth Day Celebration April 23rd<sup>h</sup>

S\*T\*A\*R is participating at the Earth Day Celebration at Manasquan Reservoir Environmental Center, 331 Georgia Tavern Road in Howell on April 23rd from noon-5pm. About 600 people are expected to attend this event, although last year the weather was glorious and 2,000 people showed up. The plan is to demonstrate solar observing/projection and distribute flyers to interested members of the public. If you would like to participate, please contact Gavin at [gwarnes1@comcast.net](mailto:gwarnes1@comcast.net).



## Neptune Middle School Star Party 2006

To be held **Thursday May 4th from 6.30pm to 9.30pm** not including setup time (rain date June 5th). We have a great bunch of kids in 5th and 6th grade and even more parents! This is the schools third year of participation in the Astronova astronomy program - most of the kids have never looked through a telescope before to say little of the monster scopes some of our members have, so this will be the kids "first light" experience. I have chosen nights with the Moon, Jupiter and Saturn prominent in the sky which should leave lasting memories - we have focused on the Solar System and moons in this program.

### Directions;

Coming from the north the Neptune Middle School is located on Heck Avenue which is boxed in-between Route 35 and Route 18 east/west and Route 66 and 33 North/South. Located below the Seaview Square Mall and circle on Route 35. Both Route 66 and 33 both accessible from the Garden State Parkway (exit 100 for either route 66

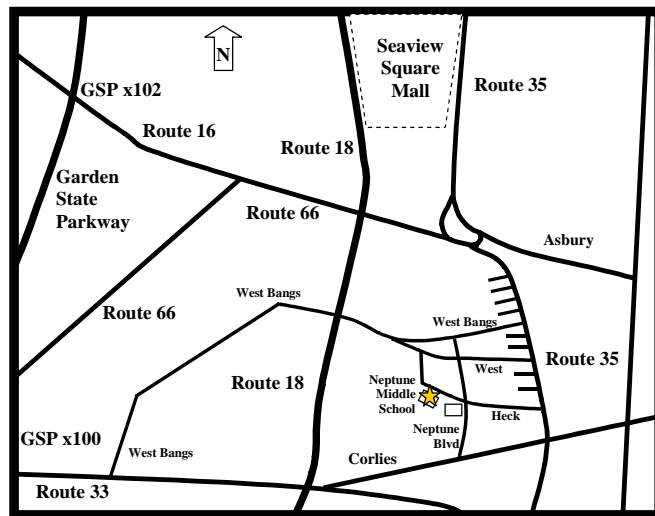
or 33), and or Route 18 (exit 10 for route 66, and exit 8 for route 33).

Coming from the south on Route 35, Heck Avenue is the first left turn going north on Route 35 after the intersection with route 33/Corlies Avenue, go along Heck through the intersection with Neptune Blvd. Coming from the north on Route 35 Heck Avenue is the 11th right turn going south on Route 35 after the intersection with Route 66 and circle below the Seaview Square Mall. If you hit Route 33 you have gone too far.

Go along Heck through the intersection with Neptune Blvd. There is considerable construction going on at school along Heck so travel approximately 200 yards down Heck past the construction until you see the middle school on your left. Park in 2nd parking lot closest to the front of the school.

For more details please **contact David Britz 732 530 7439** after 6.30pm or on [briswold@aol.com](mailto:briswold@aol.com) or [dbritz@research.att.com](mailto:dbritz@research.att.com).

I look forward to seeing you there and my sincere thanks for your support.



## Planets in Strange Places

*By Trudy E. Bell*

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two recent discoveries from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue “hypergiant” stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, “about as massive as stars can get,” said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, “definitely a daytime object,” Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn’t long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

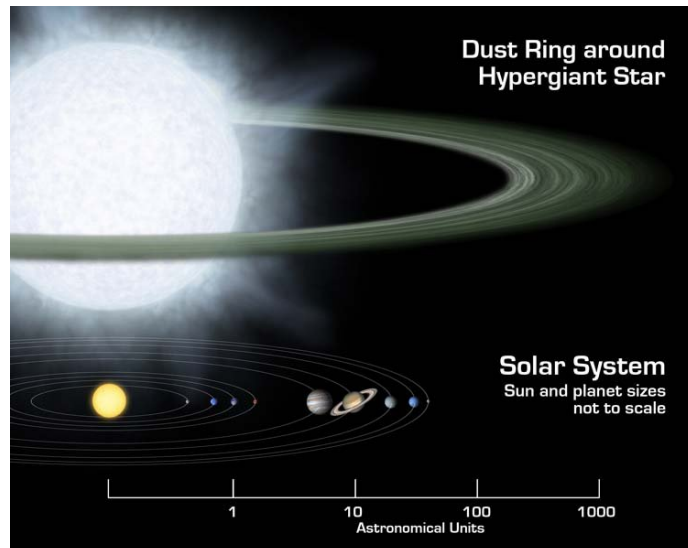
At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It’s not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature “failed star,” as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (Note: This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.) Although actual planets have not been detected (in part because of the stars’ great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent “extremes of the environments in which planets might form,” Kastner said. “Not what you’d expect if you think our solar system is the rule.”

Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.

Keep up with the latest findings from the Spitzer at [www.spitzer.caltech.edu/](http://www.spitzer.caltech.edu/) . For kids, the Infrared Photo Album at The Space Place ([spaceplace.nasa.gov/en/kids/sirtf1/sirtf\\_action.shtml](http://spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml)) introduces the electromagnetic spectrum and compares the appearance of common scenes in visible versus infrared light.

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



Artist’s rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.

## Moon Phases



## April Celestial Events

By J. Randolph Walton (Randy)

Day	Date	Time (LMT)	Event
Sat	1	00:25	Mars Sets
		03:03	Saturn Sets
		03:50	Venus Rises
		04:50	Mercury Rises
		05:44	Sunrise
		18:24	Sunset
		18:50-21:30	Moon occults the Pleiades (Sky&Telescope 4/2006, pg. 61)
		21:15	Jupiter Rises
		22:47	Moon Set
		02:00	Daylight Saving Time Begins
Sun	2	02:00	Daylight Saving Time Begins
		02:50	Moon Set
		05:30	Double shadows on Jupiter
		08:01	First Quarter Moon
		03:40	Saturn Sets
		04:33	Moon Set

		04:45	Venus Rises
		05:40	Mercury Rises
		06:33	Sunrise
		19:31	Sunset
		21:40	Jupiter Rises
Thu	13	12:40	Full Moon
		19:53	Moon Rise
Thu	20	11:14	Moon Set
		23:28	Last Quarter Moon
Sat	22	00:55	Mars Sets
		02:45	Saturn Sets
		03:32	Moon Rise
		04:30	Venus Rises
		04:40	LyrId Meteors (ZHR 20)
		05:27	Mercury Rises
		06:12	Sunrise
		19:46	Sunset
		20:35	Jupiter Rises
Thu	27	15:44	New Moon
		20:04	Moon Set
Sat	29	00:45	Mars Sets
		02:10	Saturn Sets
		04:20	Venus Rises
		05:25	Mercury Rises
		06:03	Sunrise
		19:53	Sunset
		20:10	Jupiter Rises
		22:35	Moon Set

## Are you a S\*T\*A\*R Member?

S\*T\*A\*R is a member of United Astronomy Clubs of New Jersey (UACNJ) and the International Dark Sky Association (IDA). Meetings are the first Thursday of each month, except July and August, at 8:00 PM at the King of Kings Lutheran Church, 250 Harmony Rd. in Middletown . Meeting generally consist of lectures and discussion by members or guest speakers on a variety of interesting astronomical topics.

Memberships: ( ) Individual....\$25  
 ( ) Family...\$35

Name\_\_\_\_\_

Address\_\_\_\_\_

City\_\_\_\_\_ State\_\_\_ Zip\_\_\_\_\_

Phone\_\_\_\_\_

Email\_\_\_\_\_

Make checks payable to: STAR Astronomy Society, Inc. and mail to P.O. Box 863, Red Bank, NJ 07701

## In the Eyepiece

Here is a list of objects for this month. This is reproduced from [www.skyhound.com](http://www.skyhound.com) with the kind permission of its creator and author of SkyTools Greg Crinklaw.

Object(s)	Class	Con	RA	Dec	Mag
<a href="#">Y CVn</a>	Variable Star	Canes Venatici	12h45m07.8s	+45°26'25"	4.9
<a href="#">Black Eye</a>	Galaxy	Coma Berenices	12h56m43.9s	+21°41'00"	9.3
<a href="#">Sombrero</a>	Galaxy	Virgo	12h39m59.3s	-11°37'22"	9.1
<a href="#">Focus On Downtown Virgo &amp; the M87 Jet!</a>	Galaxy Cluster	Virgo	12h26m12.2s	+12°56'45"	9+
<a href="#">M 106</a>	Galaxy	Canes Venatici	12h18m57.5s	+47°18'14"	9.1
<a href="#">M 108</a>	Galaxy	Ursa Major	11h11m31.3s	+55°40'31"	10.9
<a href="#">M65</a>	Galaxy	Leo	11h18m55.8s	+13°05'32"	10.2
<a href="#">M 66</a>	Galaxy	Leo	11h20m15.1s	+12°59'22"	9.6
<a href="#">Owl</a>	Planetary Nebula	Ursa Major	11h14m46.1s	+55°01'07"	12.0
<a href="#">NGC 4631 (The Whale)</a>	Galaxy	Canes Venatici	12h42m07.8s	+32°32'27"	9.7
<a href="#">NGC 4656</a>	Galaxy	Canes Venatici	12h43m58.2s	+32°10'09"	11.4
<a href="#">NGC 4244</a>	Galaxy	Canes Venatici	12h17m29.5s	+37°48'26"	10.8
<a href="#">NGC 4013</a>	Galaxy	Ursa Major	11h58m31.5s	+43°56'51"	12.3
<a href="#">NGC 4762</a>	Galaxy	Virgo	12h52m55.9s	+11°13'57"	11.3
<a href="#">NGC 4236</a>	Galaxy	Draco	12h16m41.8s	+69°28'10"	10.1
<a href="#">Hickson 61</a>	Galaxy Group	Coma Berenices	12h12m23.9s	+29°10'40"	11.1
<a href="#">NGC 3607</a>	Galaxy	Leo	11h16m54.8s	+18°03'06"	10.9
<a href="#">Focus On Gliese 433.1</a>	White Dwarf Star	Ursa Major	11h37m05.1s	+29°47'58"	12.5
<a href="#">Antennae/Ring Tail</a>	Galaxy	Corvus	12h01m52.8s	-18°51'54"	10.9
<a href="#">NGC 4490</a>	Galaxy	Canes Venatici	12h30m36.7s	+41°38'27"	10.1
<a href="#">NGC 4361</a>	Planetary Nebula	Corvus	12h24m30.8s	-18°47'05"	10.3

<a href="#">NGC 4027</a>	Galaxy	Corvus	11h59m30.1s	-19°16'05"	11.7
<a href="#">NGC 4094</a>	Galaxy	Corvus	12h05m53.9s	-14°31'36"	12.7
<a href="#">NGC 4782 &amp; 4783</a>	Galaxy	Corvus	12h54m35.8s	-12°34'06"	12.4
<a href="#">NGC 4462</a>	Galaxy	Corvus	12h29m21.2s	-23°09'59"	12.8
<a href="#">NGC 3987</a>	Galaxy	Leo	11h57m20.9s	+25°11'42"	13.8
<a href="#">Siamese Twins</a>	Interacting Galaxy Pair	Virgo	12h36m34.4s	+11°14'18"	11.7+12.1
<a href="#">NGC 3628</a>	Galaxy	Leo	11h20m16.9s	+13°35'14"	10.3
<a href="#">NGC 4565</a>	Galaxy	Coma Berenices	12h36m21.1s	+25°59'13"	10.6
<a href="#">Abell Galaxy Cluster 1631</a>	Galaxy	Corvus	12h52m52.6s	-15°24'47"	13.3
<a href="#">Palomar 4</a>	Globular Cluster	Leo	11h29m16.0s	-01°57'51"	14.2
<a href="#">Abell 35</a>	Planetary Nebula	Hydra	12h53m34.2s	-22°52'17"	12.0