

The Spectrogram

Newsletter for the Society of Telescopes, Astronomy, and Radio

March 2006

Inside this Issue

2

President's Corner
Meeting Notes

4

Micro Sats with Macro
Potential

5

Moon Phases
Celestial Events

6

In the Eyepiece

S*T*A*R

P.O. Box 863

Red Bank, NJ 07701

On the web at:

<http://www.starastronomy.org>

March's Meeting

The next meeting of S*T*A*R will be Thursday March 2nd. Our program will be 'An Empirical Determination of the Effect of Atmospheric Drag on Orbital Decay' by STAR's Daniel Handlin.

The meeting will begin promptly at 8:00pm at the King of Kings Lutheran Church, 250 Harmony Road, Middletown.

The Spectrogram is back!

Well folks, the Spectrogram is back. I've had a few crazy months so I missed two issues (sorry about that) but I'm back in the saddle now. Thanks to everybody who sent in content over the past two months – Randy Walton, Steve Walters, Steve Fedor.

The deadline for the next edition of the Spectrogram is Friday March 31st.

Please email any contributions to 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 – TBA

Jun 1, 2006 – AGM

President's Corner

By Steve Walters

Have you been out observing lately? The weather sure hasn't been very cooperative. I've been trying to get out and take some images but every new moon cycle, the weather has been terrible. Let's hope the weather takes a turn for the better.

This month, we need to plan our Messier Marathon outing. The best date for the Marathon is March 25 with a rain date of April 1 (oh no, not April Fool's Day!). There is a very good chance this year to see all the Messier objects in a single evening. So please to our Feb and March meetings with your ideas about how we should conduct this event.

Recently, I learned that Dee Strauss passed away during November. I have passed the condolences of S*T*A*R to her family. Dee was just becoming very active in astronomy and S*T*A*R when she learned that she had cancer. I know we will all miss Dee's friendly smile and the work she did for us in public outreach.

On a personal front, I'm preparing for a dream trip in late March to Kitt Peak Observatory. Tom Bash, one of my friends in Pennsylvania, and I are going there for a three-night session on their 20" RCOS telescope and STL-6303 camera. This is part of the Advanced Observer Program (AOP) at Kitt Peak. This promises to be a really fun trip and I'm sure looking forward to it. I'm flying to Tuscon on 3/30 and will return on 4/5. It is possible that I'll miss the April S*T*A*R meeting.

Clear Skies!

Steve...

January Meeting Notes

By Steve Fedor

The January 6, 2006 meeting of S*T*A*R Astronomy began at 8:05 pm. The meeting was attended by approximately 36 members and non-members. Pres. Steve Walters began by welcoming first time attendees and a returning member. He also thanked John and Anne for supplying the evening's donuts for coffee break.

The evening's lecture "Chandra's X-Ray Views of Supernova Remnants" was presented by Jack Hughes of Rutgers' University. The lecture included many detailed X-Ray images of supernova remnants along with background information on Chandra's design and information on its research. The talk concluded at 9:20 with Q&A.

Dave Britz and Artie Hughs gave a brief presentation on long exposure astrophotos using a C8 with a Canon EOS 20D digital SLR camera. The images included the moon and M42 taken with manual tracking.

At 9:30 the meeting was recessed for coffee break. The meeting resumed at 9:47.

Object of the Month:

-Nancy McGuire presented M35 and IC418. Charts were available for handout.

Events:

-Larry Campbell announced that he would like assistance at a star party to be held at the Village School in Holmdel on Feb 6th. This event usually is attended by 500 people.

-Frank Loso announced a star party for the Boy Scouts on Jan 18th in Eatontown. He will post further information on the discussion board.

-Randy Walton announced the following:

- a.) ASTRA will be holding a public workshop night to assist the public with using new telescopes on Jan. 13th.
- b.) ASTRA, like S*T*A*R, is selling club apparel.

-Steve Walters announced that new S*T*A*R information flyers are available and asked for volunteers to distribute them to local libraries. Steve thanked Randy Walton for his efforts in folding them all.

S.I.G. Reports

ATM – Gordon Waite announced he is acquiring parts to assemble an interferometer. He has also built a new test stand which can hold large mirrors and has rebuilt one of his grinding machines. He is placing an order for glass blanks 12.5 inches or smaller. He invited anyone to place an order with him to receive his discount. An order for glass 16 inches and larger will be placed in the near future. 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 at the Monday night sessions.

Observing. – Tim Tierney reported on a recent observing night at Burke Rd and indicated there will be other nights as weather permits.

Imaging – Steve Walters discussed his trip to San Jose for an imaging conference. The imaging SIG will meet to discuss Photoshop techniques.

Light Pollution – No report.

Outreach – No report.

Beginner's

- Nancy McGuire also discussed the recent Burke Rd. night. She has the club scope and indicated it is available for use. Contact her for further information.

- Steve Walters discussed the possibility of restarting public astronomy education for the public and asked for volunteers to teach.

Obsession 25 - Dennis O'Leary announced that the club's 25 inch telescope is out of commission because the mirror is being sent out for recoating.

The 50/50 was drawn. The meeting was adjourned.

February Meeting Notes

By Steve Fedor

The February 2nd, 2006 meeting of S*T*A*R Astronomy began at 8:06 pm. The meeting was attended by approximately 26 members and non-members. President Steve Walters began by welcoming one first time attendee.

Steve announced the need to begin a nominating committee for the election of club officers.

The evening's lecture "Science and Art through the Lens of Astronomy" was presented by S*T*A*R member Nick Lordi. Nick discussed various graphic techniques for morphing astrophotos into colorful works of art. He included many examples of his work.

Steve Walters presented a movie which featured a slide show collage of his many fine works of astrophotography.

At 9:07 the meeting was recessed for coffee break. Pictures of Nick's artwork were on display. The meeting resumed at 9:34.

Steve Walters asked if there was any interest in a club event to attend the Imax movie about the Mars rovers. The issue will be discussed further on the discussion board.

Object of the Month:

- Nancy McGuire presented M97 and asteroids Psyche and Parthenope. Charts were available for handout.

Events:

- Larry Campbell announced that he would like assistance at a star party to be held at the Village School in Holmdel on Feb 6th. This event usually is attended by 500 people.

- Randy Walton announced the ASTRA meeting on Feb. 10th will be dedicated to eyepieces and that there were magazines available for a donation.

- Charlie Byrne discussed his observations of the moon. This led to a brief discussion of various web sites that host astronomy and terrestrial "pictures of the day." Paul N. has recently posted the links to these web sites on the discussion board under "Encyclopedia Astronmica."

S.I.G. Reports

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.

Observing. - Steve Walters discussed the upcoming Messier Marathon and techniques he has used in the past for obtaining as many objects as possible. Tim Tearney has already posted on the discussion board that this year's marathon will be the weekend of March 25/26, and a second chance on April 01/02 (new moon March 29th) at Coyle Field.

Imaging - Steve Walters announced that the next meeting will be held on 2/16 at his home.

Light Pollution - No report.

Outreach - There was no report except to mention the sad and tragic passing of S*T*A*R member Dee Strauss. Dee was a member for only a year yet her enthusiasm for helping the club with various activities and her friendly personality will surely be missed by all who knew her.

Beginner's

- Nancy McGuire will arrange for future observing sessions for beginners as soon as the weather cooperates.

- Steve Walters discussed the possibility of restarting astronomy education for the public and asked for volunteers to teach.

Obsession 25

- Gordon Waite discussed his optical testing of the club's 25 inch mirror. He stated that the mirror is showing some astigmatism. The wave front error is approximately between 1/3.3 to 1/3.9 waves. Since astigmatism is difficult to remove without a full refiguring of the mirror he recommended having it recoated without any attempts to improve the figure. It was decided to move ahead with this so the club will once again be able to enjoy its use by spring galaxy season.

- Steve Walters announced that he and Gavin will be installing DSC's soon.

The 50/50 was drawn. The meeting was adjourned.

Micro-sats with Macro-potential

By Patrick L. Barry

Future space telescopes might not consist of a single satellite such as Hubble, but a constellation of dozens or even hundreds of small satellites, or “micro-sats,” operating in unison.

Such a swarm of little satellites could act as one enormous telescope with a mirror as large as the entire constellation, just as arrays of Earth-bound radio telescopes do. It could also last for a long time, because damage to one micro-sat wouldn't ruin the whole space telescope; the rest of the swarm could continue as if nothing had happened.

And that's just one example of the cool things that micro-sats could do. Plus, micro-sats are simply smaller and lighter than normal satellites, so they're much cheaper to launch into space.

In February, NASA plans to launch its first experimental micro-sat mission, called Space Technology 5. As part of the New Millennium Program, ST5 will test out the crucial technologies needed for micro-sats—such as miniature thrust and guidance systems—so that future missions can use those technologies dependably.

Measuring only 53 centimeters (20 inches) across and weighing a mere 25 kilograms (55 pounds), each of the three micro-sats for ST5 resembles a small television in size and weight. Normal satellites can be as large and heavy as a school bus.

“ST5 will also gather scientific data, helping scientists explore Earth's magnetic field and space weather,” says James Slavin, Project Scientist for ST5.

Slavin suggests some other potential uses for micro-sats:

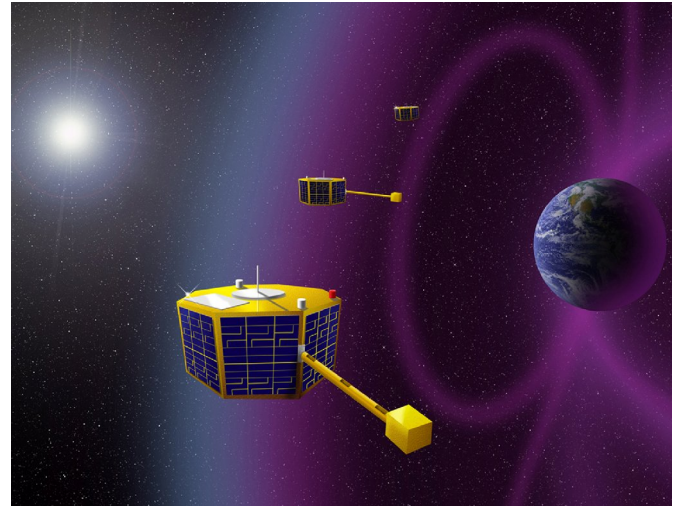
A cluster of micro-sats between the Earth and the Sun—spread out in space like little sensor buoys floating in the ocean—could sample incoming waves of high-speed particles from an erupting solar flare, thus giving scientists hours of warning of the threat posed to city power grids and communications satellites.

Or perhaps a string of micro-sats, flying single file in low-Earth orbit, could take a series of snapshots of violent thunderstorms as each micro-sat in the “train” passes over the storm. This technology would combine the continuous large-scale storm monitoring of geosynchronous weather satellites—which orbit far from the Earth at about 36,000 kilometers' altitude—with the up-close, highly detailed view of satellites only 400 kilometers overhead.

If ST5 is successful, these little satellites could end up playing a big role in future exploration.

The ST5 Web site at nmp.jpl.nasa.gov/st5 has the details. Kids can have fun with ST5 at spaceplace.nasa.gov, by just typing ST5 in the site's Find It field.

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



Caption:
The Space Technology 5 mission will test crucial micro-satellite technologies.

Moon Phases



March Celestial Events

By J. Randolph Walton (Randy)

Day	Date	Time (LMT)	Event		
Sat	4	01:02	Mars Sets		
		04:07	Venus Rises		
		04:55	Saturn Sets		
		06:29	Sunrise		
		17:55	Sunset		
		19:00	Mercury Sets		
		23:10	Jupiter Rises		
Mon	6	23:55	Moon Set		
		10:06	Moon Rise		
Sat	11	15:16	First Quarter Moon		
		14:57	Moon Rise		
Tue	14	18:03	Sunset		
		16:22	Penumbral lunar eclipse Start		
		17:59	Moon Rise		
		18:35	Full Moon		
		18:48	Penumbral lunar eclipse greatest		
		21:14	Penumbral lunar eclipse End		
		22:08	Double satellite transit on Jupiter		
Fri	17		Zodiacal Light in W after evening twilight for two weeks		
Sat	18	00:45	Mars Sets		
		03:55	Venus Rises		
		04:00	Saturn Sets		
		05:30	Mercury Rises		
		06:07	Sunrise		
		18:10	Sunset		
		22:07	Moon Rise		
		22:10	Jupiter Rises		
		20	Mon	13:26	Spring Equinox
		22	Wed	00:36	Double satellite transit on Jupiter
10:09	Moon Set				
14:10	Last Quarter Moon				
25	Sat	00:35	Mars Sets		

		03:30	Saturn Sets
		03:53	Venus Rises
		03:59	Moon Rise
		05:03	Mercury Rises
		05:55	Sunrise
		18:17	Sunset
		21:45	Jupiter Rises
29	Wed	00:53	Double shadow transit on Jupiter
		05:15	New Moon, Total solar eclipse visible Africa and W of Asia
		05:53	Moon Rise

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 with the kind permission of its creator and author of SkyTools Greg Crinklaw.

Object(s)	Class	Con	RA	Dec	Mag
M 81 & M 82	Galaxies	Ursa Major	09h55m34.1s	+69°03'59"	7.8
NGC 3511	Galaxy	Crater	11h03m23.7s	-23°05'11"	11.5
Spindle	Galaxy	Sextans	10h05m14.1s	-07°43'07"	10.1
Ghost of Jupiter/Eye	Planetary Nebula	Hydra	10h24m46.1s	-18°38'32"	8.6
NGC 2903	Galaxy	Leo	09h32m09.7s	+21°30'03"	9.6
M 95	Galaxy	Leo	10h44m00.0s	+11°41'57"	10.5
M 96	Galaxy	Leo	10h46m48.1s	+11°48'54"	10.1
The Leo I Dwarf	Galaxy	Leo	10h08m30.6s	+12°18'07"	11.2
Markarian 421	Galaxy	Ursa Major	11h04m27.4s	+38°12'34"	14.8
NGC 3395	Galaxy	Leo Minor	10h49m52.4s	+32°58'35"	12.4
NGC 2818/A	Planetary Nebula in Open Cluster	Pyxis	09h16m01.5s	-36°36'37"	13.0
PHL 1811	Quasar	Cap	21h55m01.6s	-09°22'24"	13.8?
Focus On the Twin Quasar	Quasar	Ursa Major	10h01m20.8s	+55°53'54"	17.0
Hickson 44	Galaxy Group	Leo	10h18m00.4s	+21°48'44"	10.0
Abell 33	Planetary Nebula	Hydra	09h39m09.2s	-02°48'35"	13.4