



THE NEKAAL OBSERVER

May 2005 VOLUME 13, ISSUE 5

PO BOX 951, TOPEKA KS 66601
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The official newsletter of Farpoint Observatory and
the Northeast Kansas Amateur Astronomers' League

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Your articles and other contributions to this newsletter are welcome and encouraged. Please get them to the editor at least 6 days prior to the next scheduled meeting.

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Member of the
Astronomical League
www.astroleague.org

FROM THE PRESIDENT: By Graham Bell

Tombaugh Dedication: The Tombaugh Telescope was officially dedicated on April 2, 2005. The small group in attendance got a nice view of (not through) the telescope. All of us enjoyed the cheese, meat & fruit spread which Kevin Dobbs arranged. Actually he did all the work.

The June issue of *Sky & Telescope* has a nice picture of the Tombaugh telescope taken while it was still in Utah. See S&T page 110 for a little blurb about the telescope and the dedication.

Tombaugh Vision: The telescope still has some vision problems. Since cataract surgery is not expected to help, we have instead decided on a design change. Gary has arranged for ScopeCraft to build a new camera holder, which will be placed inside the tube. This will eliminate the tertiary, providing a larger effective aperture and reducing collimation complexities.

E/PO Building: Work on this has been slowed by all the telescope work. We expect this activity to begin moving ahead shortly.

NASA Funding: We got an extension according to the NASA contracting officer, and confirmed by Lindley Johnson. I haven't seen the paper work making it official, but that is typical of NASA paperwork. This gives us time to complete the telescope modifications and build the Kessler Observatory.

General Comments: See the notice about board minutes on page 2. **PICNIC** - also on page 2

Astronomical League Conference: See page 3 for information about the conference to be held in Kansas City this year. This is a great opportunity to take advantage of the conference.

Speaking of the AL, you should check out their observing clubs. For an example of one of these, see Ed Woerner's article on page 5.

Phone: as noted in the facility report, a new phone line is being put in at Farpoint. This will be an Eskridge local number, long distance from Topeka. The new number is shown above. My calls to Eskridge usually cost less than a quarter.

EDUCATION/PUBLIC OUTREACH UPDATE: Janelle Burgardt

E/PO Activities:

Mid-May Farpoint FAST-NEO presentation
MVHS Science Students
By: Gary Hug
April 25 Junction City HS
Physics & Space Science Classes
FAST NEO Follow-up and Black
Holes
By: Janelle Burgardt

May 6 Theodore Roosevelt Elementary in
Manhattan
Presentation to be determined
By: Janelle Burgardt

Editor's Note: There are a lot of opportunities to help with E/PO. It is really rewarding to know you have reached and encouraged some youngsters. Contact Janelle to find out how you can participate.

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SKY HIGHLIGHTS FOR MAY: *by Janelle Burgardt - Astronomy Program Director*

NOTE: All times CDT

May 1	Last quarter moon
May 4-6	Eta Aquarids meteor shower. Best viewed just before morning twilight begins
May 8	New Moon
May 15	Uranus 1.1° north of Mars
May 16	First quarter moon
May 23-24	Occultation of Antares in early morning for North America, approximately 2:45-4:00 am CDT. For specific timings, check www.lunar-occultations.com/iota
May 23	Full Moon. May's full moon is called the Flower, Milk or Planting Moon
May 30	Last quarter moon

Planets

Venus—Near the sun in the evening sky early in the month, rising into easy visibility by the end of the month

Mars— Rises around 3 am in Aquarius, brightens from +0.6 to +0.3 during the month

Jupiter— Dominating the night sky most of the night, setting 1 hour before sunrise on the 1st, 2½ hours before on the 31st. At magnitude -2.3, can be found about 15° northwest Spica in Virgo.

Saturn—At magnitude +0.2, Saturn is getting low in the west in Gemini.

Uranus— Now at magnitude +6, Uranus is visible in binoculars if you know where to look! Use Mars as a signpost on the 15th.

Lunar conjunctions this month

The moon has close approaches to a number of planets and bright stars this month, as follows:

May 2	waning crescent lower right of Mars
9	waxing crescent above Venus
13	near Pollux, with Saturn beneath them
19	waxing gibbous lower left of Jupiter
20	close to Spica
24	occults Antares for North America
31	waning moon near Mars

Farpoint Picnic & Star Party

Farpoint Observatory Grounds

June 10, 2005

6PM - ???

We're grilling! Bring your friends and family to a cookout at Farpoint. Bring a lawn chair and enjoy food and conversation with other sky-minded folks, then stick around for some observing. Bring your binoculars, telescopes or use the club's. It's also Open House, so you can meet some of our neighbors.

Burgers, Hot Dogs and Drinks donated by the Board.

 **Board Minutes:** The Board Minutes are online if you get the Observer via YAHOO groups. 
 Look in the Files section, Board Minutes folder. For members getting the Observer via mail, min- 
 utes are enclosed. 
 
 
 
 
 

Astronomical League Convention in *books.*

Kansas City August 12 & 13

The AL annual convention is just down the road! One of the speakers is Dr. Bruce Twarog of KU, who serves on our advisory board.

This is a great opportunity for NEKAAL members to descend *en masse* at this national convention. A number of people have already indicated their intent on attending all or part of the convention. For those of us who are navigationally challenged, going with a group is a great comfort; since Bill Leifer is a KC native, we can refer to him to blaze the trail! Information from several sources is included below.

The 2005 convention, ALConExpo 2005, will be held in Kansas City, MO. on August 12th & 13th at the Sheraton Hotel located at I-435 & Nall. Carroll Iorg is the convention chair (816) 444-4878, carroll-iorg@kc.rr.com. The emphasis this year will be on astronomy products, and we expect to have many vendors present. Speakers will include Don Parker, Michael Bakich and Dr. Bruce Twarog from the University of Kansas. The banquet speaker, Bruce Bradley, from Linda Hall Science & Technology Library, will talk about how the library was able to amass such a world-famous collection of rare astronomy

REGISTRATION

1-day registration: Friday Only	\$25.00 if registered by July 15, 2005
	\$30.00 thereafter
1-day registration: Friday Only	\$25.00 if registered by July 15, 2005
	\$30.00 thereafter
2-day registration: Friday AND Saturday	\$50.00 if registered by July 15, 2005
	\$60.00 thereafter
Star-B-Q at Powell Observatory	\$15.50 per person
Coach transportation to and from Star-B-Q	\$11.00 per person
	(subject to adequate volume)
Saturday night banquet at the Sheraton	\$36.00 per person
T-shirt (pre-order)	\$20.00 each

(Continued on page 4)

AFFILIATED ORGANIZATIONS:



International Dark-Sky Association
IDA
<http://www.darksky.org>



Night Sky Network
"Astronomy clubs bringing the wonders of the universe to the public"



Astronomical League
<http://www.astroleague.org>

15 Events Logged

NASA's Night Sky Network.
<http://nightsky.jpl.nasa.gov/>

HERE ARE SOME PRICES FROM THE NEKAAL STORE:

<u>Periodicals</u>		<u>Merchandise</u>		<u>Tote bags</u>	\$8.00
S&T	\$32.95	hats	\$8.00	Coffee Mugs	\$10.00
Astronomy	\$29.00	Tshirts	\$8.00	Please contact Walter or Nancy Cole to acquire any of these items.	
		Sweatshirt	\$10.00		
		Name tags	<i>free</i>		

(Continued from page 3)

Registrar: Richard Harshaw
(dwharshaw@kc.rr.com)

Payment must be received by July 15, 2005 in order to receive the early-registration rate.

HOTEL RESERVATIONS MUST BE MADE SEPARATELY OF THIS REGISTRATION

Conference registration is not required to attend the

Star-B-Q. Transportation to the Star-B-Q is subject to minimum and maximum volume requirements of the coach service.

Room reservations are available at the Sheraton-Overland Park at a special rate of \$99 per night – but only when registrations are made online or by requesting Astronomical League Special Rate.

ASIAN TSUNAMI SEEN FROM SPACE : by Patrick L. Barry

When JPL research scientist Michael Garay first heard the news that a tsunami had struck southern Asia, he felt the same shock and sadness over the tremendous loss of human life that most people certainly felt. Later, though, he began to wonder: were these waves big enough to see from space?

So he decided to check. At JPL, Garay analyzes data from MISR—the Multi-angle Imaging SpectroRadiometer instrument aboard NASA's Terra satellite. He scoured MISR images from the day of the tsunami, looking for signs of the waves near the coasts of India, Sri Lanka, Indonesia, and Thailand.

Looking at an image of the southern tip of Sri Lanka taken by one of MISR's angled cameras, he spotted the distinct shape of waves made visible by the glint of reflected sunlight. They look a bit like normal waves, except for their scale: These waves were more than a kilometer wide!

Most satellites have cameras that point straight down. From that angle, waves are hard to see. But MISR is unique in having nine cameras, each viewing Earth at a different angle. "We could see the waves because MISR's forward-looking camera caught the reflected sunlight just right," Garay explains.

In another set of images, MISR's cameras caught the white foam of tsunami waves breaking off the coast of India. By looking at various angles as the Terra satellite passed over the area, MISR's cameras snapped seven shots of the breaking waves, each about a minute apart. This gave scientists a unique time-lapse view of the motion of the waves, providing valuable data such as the location, speed, and direction of the breaking waves.

Realizing the importance of the find, Garay contacted Vasily Titov at the Na-

tional Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory in Seattle, Washington. Titov is a tsunami expert who had made a computer simulation of the Asian tsunami.

"Because the Indian Ocean doesn't have a tsunami warning system, hardly any scientific measurements of the tsunami's propagation exist, making it hard for Dr. Titov to check his simulations against reality," Garay explains. "Our images provide some important data points to help make his simulations more accurate. By predicting where a tsunami will hit hardest, those simulations may someday help authorities issue more effective warnings next time a tsunami strikes."

Find out more about MISR and see the latest images at www-misr.jpl.nasa.gov/. Kids can read their own version of the MISR tsunami story at http://spaceplace.nasa.gov/en/kids/misr_tsunami.

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



This December 26, 2004, MISR image of the southern tip of Sri Lanka was taken several hours after the first tsunami wave hit the island. It was taken with MISR's 46° forward-looking camera.

THE AL'S DOUBLE STAR CLUB: by Dr. Edwin Woerner

A few years ago, when we were living in Riyadh, Saudi Arabia, I wanted an observing project that could be completed in a few months from an urban (population: about 4 million) location, with a six-inch reflector. I decided that the Astronomical League's list of 100 double stars would be a good choice.

All primaries on the list are brighter than magnitude 6, and no companion is fainter than magnitude 10. The closest separation is given as 1.7". Double star observing does not require a moonless sky. The League's information about this program states that all can be seen in a 3-inch refractor.

On the other hand, like any other kind of visual astronomy, double stars require patience. Some of the stellar groupings (several on the list have three or more components) offer several magnitudes difference in brightness between the stars. The brighter star overwhelms the fainter companion, and makes resolution hard even if there is a wide separation.

Some of the stars have striking color contrasts. Others pairs are beautiful because the stars appear identical.

Let me suggest a few doubles from the list that are visible in spring skies.

Next time you point your telescope at Saturn, check out nearby Castor (Castor is nearer to Capella – both start with the letter C; Pollux is nearer to Procyon – both start with the letter P). Castor is magnitude 1.9, and its companion is magnitude 2.9 and 2.2" away.

Castor was the first double star discovered. Starting before the invention of the telescope, astronomers looked for evidence of stellar parallax. William Herschel decided to monitor pairs of stars that appeared close together in the sky.

He thought that all these pairs were what we now call optical doubles, that is, stars that appear close together, but are not physically associated. He thought that these pairs were accidental alignments, and that one star was actually much nearer to us than the other. By observing these pairs over long periods of time Herschel expected to see the relative positions of the stars change due to the Earth's motion.

Actually, what he observed was a systematic change in the relative positions due to the orbital motion of the stars around their center of gravity.

Castor and its bright companion have a period of over 400 years, but this pair was the first where motion was actually observed. We now know that each star in the Castor system is a spectroscopic binary. Each component is itself two stars, but with a separation so close that no telescope can resolve it. The Castor system has a third component, about magnitude 9.5 and well separated from the brighter pair. This star is also a spectroscopic double – an eclipsing binary with a period of 20 hours and a brightness change of about half a magnitude.

Have you ever seen Beta Monoceros? This triple is another Herschel discovery. East of Sirius in the sky, this system consists of nearly identical white stars forming a thin isosceles triangle. Some say that this is the finest triple in the sky, and a 60-mm. department store junk refractor resolves it neatly.

Not so with another excellent spring binary – Gamma Virginis, near Jupiter on spring evenings. This pair consists of identical 3.5 magnitude components, shining blue-white like perfect diamonds. Just as Castor gave us our first observa-

tion of Newtonian gravity working outside of our solar system, so these forces operate on this pair. Each year these stars appear to be moving closer together, until my 6-inch no longer can resolve them. They now appear within about 1" of each other (the League's list, dated 1995, says 3.6"). Let me know if you resolve them in a small telescope.

Trailing behind Virgo along the Zodiac comes Libra. Some have told me that they can resolve Alpha Librae, also known as Zubenelgenubi, with the naked eye. This pair is separated by 231", compared with 208" for the wide components of Epsilon Lyrae. However, Alpha Librae's components are magnitudes 2.8 and 5.2, compared with 5.0 and 5.2 for the bright components of Epsilon Lyrae. I require binoculars to resolve either. Once again, I'd like to hear if you can do better.

Naturally, no spring evening is complete without a glance at Zeta Ursae Majoris, also known as Mizar. The 2.3 magnitude primary is separated from magnitude 4.0 Alcor by 709", over one third the diameter of a full moon. This is an easy naked eye binary. However there is another 4.0 magnitude companion only 14" from the primary. This star is easy to split in any small telescope.

Double stars, like variable stars, are an area where amateur astronomers can make contributions. By regularly measuring the positions of doubles, amateurs can help determine orbits. Accurate orbits and periods are the only direct way we have of measuring stellar masses directly.

But there is also much to be said for observing multiple star systems because of their inherent beauty and interest.

CONFERENCES & STAR PARTIES: by Graham Bell

Several Conferences and Star Parties are scheduled in the next few months. Some which might interest you are listed here.

Conferences:

2005 SAS Symposium on Telescope Sciences

Society of Astronomical Sciences
<http://www.socastrosci.org/>
 May 25-26, 2005
 Northwoods Resort, Big Bear Lake, CA
AICoN Expo 2005 - See page 3

Star Parties

Texas Star Party

Sw Region of the AL
<http://www.texasstarparty.org/>
 May 1-8, 2005
 Fort Davis, Texas

Grand Canyon Star Party

Tucson AAA
<http://www.tucsonastronomy.org>
 June 4-11, 2005
 N. and S. Rims of Grand Canyon

Nebraska Star Party

Several Sponsors
<http://www.nebraskastarparty.org/>
 July 31 - Aug 5, 2005
 Valentine Nebraska

Ark-La-Tex Star Party

Red River Astronomy Club
<http://www.rrac.org/starparty/starparty.html>
 Sept. 1-5, 2005
 13 mi. W. of Nashville, Ark

FACILITY REPORT—APRIL 2005: By Bill Leifer

The facility was hopping with activity before and during the Tombaugh Dedication Ceremony. The observatory emerged relatively unscathed and actually cleaner and more up to date than usual. Thank you to everyone who worked so hard to get the observatory ready and get the scope up and running.

The pump grinder that drives sewage from the small holding tank just outside the building and impels it about a hundred yards into the underground lagoon (septic tank) that is shared with the high school died. So the toilet stopped working. This happened because the float became non functional a few months ago shutting off current to the cord to the pump motor, and the cord that runs the pump was plugged by me into a live receptacle, restoring the pump to function. Unfortunately, this caused the pump to run continuously rather than only when the toilet is flushed. When

the weather warmed up, the motor burned out, and it cost nearly \$800 to replace. Although this was entirely my fault, several board members stepped forward and pitched in to help pay for the pump. The new pump and float now operate off a single electrical cord to prevent retired pathologists from ruining it in the future.

The grass fires that raged throughout Eastern Kansas began involving the lands surrounding the observatory in recent weeks. Some of the fires actually crept onto the Observatory grounds, and Dan Tibbetts hosed down the fires when they came close to the building last week. Dan gets the Fireman-of-the-Year award. We want to buy him a hat.

Kevin Dobbs donated a small refrigerator to Farpoint for keeping cold drinks and perishables. Thank you, Kevin!

The trenching for the Sprint land line telephone into the Observatory has not yet

been completed but will soon. This will serve as a backup internet connection this summer, when the school network goes down for repairs and upgrading, and we lose our wireless connection. Incidentally, the slowdown in the wireless internet turned out to be a problem at the high school. Apparently this was resolved, and our broadband wireless connection to the school's T-1 line is now screaming fast. It is time again to thank Russ Valentine for his terrific job getting us connected and networking all the computers at Farpoint and for the time he spent troubleshooting a problem that was not actually ours, after all.

Plans for the new Kessler Building are being drawn within the next few weeks, and we anticipate construction and completion by autumn.

Nekaal-Bank,Cash,CC Accounts April 17,2005
Cash Accounts As of 4/17/2005

Account	Balance
ASSETS	
Cash and Bank Accounts	
Money Market	823.13
Money Market 2-Telescope Fund	698.00
Money Mkt 3-Education Building	6,075.00
Nekaal-checking	592.58
TOTAL Cash and Bank Accounts	8,188.71
TOTAL ASSETS	8,188.71
LIABILITIES	0.00
OVERALL TOTAL	8,188.71

Net Sales:

Cost of Mdse	-52.50
Sale of Mdse	83.00
Sales Taxes	-13.16

TOTAL Net Sales 17.34

TOTAL INFLOWS **6,397.40**

OUTFLOWS

Annual Report	40.00
FPO Utilities	90.00
Postage	120.26
Repair & Maint	779.72

Subscriptions:	
Magazine Subs	94.90
Subs.payments recd	-94.90

TOTAL Subscriptions	0.00
Supplies-Supplies	26.22
Telephone-Telephone Expense	110.91
Telescope Dedication	194.69

TOTAL OUTFLOWS **1,361.80**

OVERALL TOTAL **5,035.60**

NEKAAL Cash Flow 1/1/05 Through 4/17/05

Category Description	
INFLOWS	
Contributions	4,415.00
Dues 2005	550.00
Int Inc-Interest Income	1.01
Memorial-Kessler-contributions	1,500.00
<u>NASA Grant-NASA Grant activity:</u>	
NASA - A Grant-Received	23,235.23
NASA - Site Preparation	-387.98
NASA - Scope Grant Disbursements	-22,847.25
TOTAL NASA Scope Grant activity	0.00
NASA Grant -Education:	
Ed-Telescopes	-85.95
TOTAL Grant -Education	-85.95

Meeting Schedule

NEKAAL meets monthly on the fourth Thursday, January through October, at Washburn's Stoffer Hall. The meetings are at 7:30 pm.

Guests are always welcome to join us for the General Meetings and/or observing at Farpoint.

May General Meeting

Thursday, May 26, 2005, 7:30 pm
 Speaker: **Not Yet determined**
 Will **You** volunteer ... call 256-6281

Who to contact:

<u>Meetings, Speakers:</u>	Graham Bell
<u>Farpoint Functions, Scheduling:</u>	Janelle Burgardt
<u>Farpoint Maintenance:</u>	Bill Leifer
<u>Special Presentations, Groups:</u>	Janelle Burgardt
<u>Dues, Donations, Merchandise:</u>	Walter or Nancy Cole
<u>FAST:</u>	Gary Hug or Graham Bell
<u>Web Content</u>	Janelle Burgardt
<u>Observer Articles</u>	Graham Bell
<u>Other Web Issues:</u>	Russell Valentine
<u>General Questions:</u>	Any board member

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Debbie Roberts		
Patsy Rush		
Dan Tibbets		Ddftp@aol.com
Russell Valentine	862-5046	russ@coldstonelabs.org

**These numbers and email addresses are not to be shared with others.
 They are to be used by members only!**

"The REAL MEETING" Gathering



Please join us for post-meeting eats at Perkins Restaurant, 1720 SW Wana-maker. Some members refer to this as "the real meeting" which follows our general meeting each month.

Open House Dates for 2005

February 11	7:30	August 12	9:00
March 18	7:30	September 10	8:30
April 15	8:30	October 8	8:00
May 13	9:00	November 5	7:30
June 10	9:30		
July 15	9:30		

Club Observing Dates for 2005

January 7-8	July 8-9
February 4-5	August 5-6
March 11-12	September 2-3
April 8-9	Sept 30- Oct 1
May 6-7	October 28-29
June 3-4	December 2-3

Farpoint Observatory

W. Long. 96°00'08.6" Elevation = 406 m
 N. Lat. 38°53'24.9" = 1320 Ft.



The NEKAAL OBSERVER

NEKAAL

PO BOX 951

TOPEKA, KS 66601

ADDRESS SERVICE REQUESTED