



# THE NEKAAL OBSERVER

July 2004 VOLUME 12, ISSUE 6

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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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## FROM THE PREZ: By Graham Bell

**Tombaugh Project:** I think I saw a snail go by, but he was moving so fast I didn't get a good look. At least, that is how it seems compared to the way this project is moving. There is one, and only one, bottleneck at this time. We still are not able to draw down funds from NASA. The bureaucrats at Goddard keep nit-picking, and have slowed things down considerably. We still expect to be able to get this rolling by July 1. If everything else goes smoothly (and why should it) the earliest we will be able to get the telescope up and running will be about mid-November.

We do have the focal reducer finished and shipped to ScopeCraft. Since that was paid for with existing NEKAAL funds, the Goddard snail didn't come into play with the focal reducer.

**News Coverage:** As many of you know, we got our press release published in *Alma* and *Eskridge*. Recently, with help from Bruce Twarog, we also got good coverage in the *Lawrence* paper. Their emphasis was on the rebirth of the Pitt (now Tombaugh) telescope. They also put that on the AP, so a few regional radio stations picked up on it. I also understand there was mention of it on KSNT-27. The Topeka paper, again, ignored the press release.

That lack of coverage might now be changing. This past weekend (June 19), I wrote an email to a CJ reporter complaining about the fact that they published a nice article on a cult worship of the summer solstice, but didn't see fit to publish anything about the science of the solstice, or anything else sci-

entific. I quickly got responses both from him and from his editor, who now seems very interested in working with us to get better science information in the Kids page of the paper. Janelle and I, at the editor's request, provided ideas on how, with help from the CJ, we could do a better job of reaching the youth of NE Kansas. At least we now have a CJ contact, and I expect coverage of NEKAAL to improve... at least it can't deteriorate any from where it is now.

Late note on press coverage... in mid July channel 13 will film a short feature on our public outreach and research activities..

**E/PO:** ... Stands for Education/Public Outreach. One of our newest members, Debbie Roberts, is a teacher in USD 330. At the last board meeting she was appointed to the position of Education Liaison, and will coordinate with USD 330 and other schools regarding our E/PO activities. We are beginning to get more involved with other schools, scout groups, etc. and want to take advantage of every opportunity to reach out to the public, in particular the youth of the area. With that in mind, we really are desperate for volunteers to assist Janelle in this effort. Even if you consider yourself a novice, we want your help, if you think you are a novice, what about the kids we are working with that don't yet know the difference between a planet and a star. What we are doing with the youth isn't sophisticated, we are just spreading the word about the most basic concepts. Contact Janelle and volunteer.

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

### Sky Highlights for July

July 2	Full Moon Known as the Thunder, Hay or Buck Moon.
July 5	Earth at aphelion.
July 8	Saturn at conjunction.
July 9	Last quarter moon
July 10	Mercury and Mars less than 0.25 degrees apart.
July 11	Pluto at opposition in Serpens Cauda
July 17	New moon
July 24	First quarter moon.
July 27	Peak of Delta Aquarid meteor shower.
July 31	Full moon. The second full moon in a month is called the Blue Moon.

### Comet NEAT

The comet will spend the month in Ursa Major, and should remain visible in binoculars at a magnitude of 7-8. On July 21, the comet will be between the pointer stars of the Big Dipper.

### Planets in July

<b>Mercury</b>	Low in the WNW throughout the month.
<b>Venus</b>	Now a morning star, Venus shines at -4.5 in Taurus. It rises 1.5 hours before the sun at the beginning of the month; by month-end, it rises 3 hours before sunrise.
<b>Mars</b>	At magnitude +1.8, this is as dim as it gets. The planet disappears into the solar glare by the end of the month.
<b>Jupiter</b>	The brightest object in the night sky at -1.8 magnitude, Jupiter is low in the west, setting only 2 hours after the sun by the 31 <sup>st</sup> .
<b>Saturn</b>	Reappears in the morning sky this month. It rises in Gemini one hour before sunrise by July 30.

## NEKAAL JOINS IDA: *by Janelle Burgardt*

Thanks to a donation, NEKAAL is now a member of the International Dark-Sky Association. IDA is a non-profit organization incorporated in 1988, and dedicated to preserving the night sky. The IDA has three main goals: 1) to enhance educational outreach to professionals and the public, 2) to expand technical expertise in areas including and affected by outdoor lighting, and 3) to serve as a major information resource for members and the public. The IDA works to build awareness of the value of the nighttime environment,

and to help preserve mankind's view of the universe, in an environmentally responsible and economically sensible manner.

We're all aware of the negative effect of light pollution on astronomers, but bad lighting hurts everyone. It causes glare than hinders vision, detracts from public safety, wastes energy, and creates light trespass. We now know that it also adversely affects wildlife and human health.

Largely as a result of the IDA's efforts, municipalities, counties and states in the U.S. have passed ordinances restricting

"bad" outdoor lighting. The IDA has numerous Information Sheets on all aspects of good lighting; economic issues, effect on wildlife, security, human health concerns. We'll draw on this information as we discuss lighting around Farpoint Observatory with the Wabaunsee County Commission.



International Dark-Sky Association

IDA  
http://www.darksky.org

## FASTTRACKS: *by Gary Hug*

It may be a good time to review how we at FAST acquire updated information through the Internet. This information will also be posted at the FAST Yahoo group site.

<http://cfa-www.harvard.edu/iau/NEO/ToConfirmRA.html>  
<http://cfa-www.harvard.edu/iau/NEO/LastObsNEO.html>  
<http://cfa-www.harvard.edu/iau/NEO/BrightRecovery.html>  
<http://spaceguard.esa.int/servlet/PriorityListServlet>  
<http://cfa-www.harvard.edu/iau/info/Astrometry.html>

<http://cfa-www.harvard.edu/iau/MPEph/NewObjEphems.html>  
<http://cfa-www.harvard.edu/iau/MPEph/MPEph.html>  
<http://scully.harvard.edu/~cgi/CheckMP>  
<ftp://cfa-ftp.harvard.edu/pub/MPCORB/>  
<http://cfa-www.harvard.edu/iau/SpaceJunk/SpaceJunk.html>  
<http://cfa-www.harvard.edu/mpec/RecentMPECs.html>

All the above web sites are used with some frequency by FAST

(Continued on page 3)

(Continued from page 2)

members. An explanation of their usefulness for our NEO follow-up team is as follows:

<http://cfa-www.harvard.edu/iau/NEO/ToConfirmRA.html>

This is the NEO Confirmation Page. Here you can get an ephemeris (positional data) specific to Farpoint, using our MPC code of 734, on newly discovered objects. This is a very dynamically active site and is usually updated several times in a 24 hour period. An object listed may only have one night's data (marked 1-nighter) at only one observatory or it may already have many data points by observers doing follow-up from various sites around the world.. This site is arguably the primary source for FAST targets.

<http://cfa-www.harvard.edu/iau/lists/Customize.html>

Here one can set out certain criteria such as magnitude, right ascension and declination limits, and can include just recent NEOs or NEOs with multiple oppositions. It will then return ephemeris for those objects one selects from the list. This is probably the second priority web site for finding FAST objects for an observing run. Be careful the uncertainty quantity is not very high. Anything over a 5 is not likely to be in the field and may be several fields away from the predicted position.

<http://cfa-www.harvard.edu/iau/NEO/BrightRecovery.html>

The items found on this site are usually very difficult to observe. Either the magnitude is very low or the uncertainty is very high or both conditions apply. Occasionally there's an organized search for these returning NEOs where one observing station will 'cover' an area of the search pattern. It is usually quite time consuming and only the most hazardous objects are generally targeted in this way. Also two nights of data are required for a confirmed recovery.

<http://spaceguard.esa.int/servlet/PriorityListServlet>

Items on this page are also good targets when the object count is low on the NEOCP. They can be arranged in priority classes of urgent, needed, useful and low priority. Many of these items are not listed in other NEO follow-up sources. It is a web site run by the Spaceguard Foundation in Italy.

<http://cfa-www.harvard.edu/iau/info/Astrometry.html>

This is a site contains everything you wanted to know about doing this kind of research. It is the Bible of the amateur astromet-

rist. This cannot be stressed enough - this is a MUST READ for all FAST members.

<http://cfa-www.harvard.edu/iau/MPEph/NewObjEphems.html>

In the event we run across a object that is unknown and especially if it is moving fast, this interactive site will produce an ephemeris (for hours or even days later) after we load our observations. Of coarse on finding a new object moving fast or in an unusual direction the first action is notify the MPC.

<http://cfa-www.harvard.edu/iau/MPEph/MPEph.html>

To get an ephemeris for any object this is the site you'll need. This even works for comets. Either the long form (2002 PX12) or the short form (K02P12X) can be used. For a comet use C/2001 Q4.

<http://scully.harvard.edu/~cgi/CheckMP>

To double check and see if the new guy you found is really new use this site. You will need to run astrometrica and get a precise position and time for your object. The MP Checker will give back a list of all objects near the position and time you entered.

<ftp://cfa-ftp.harvard.edu/pub/MPCORB/>

This is the only ftp site listed. It is the place to download the mpc orbit database (MPCOrb) - it is huge and takes several minutes with broadband. It has been running just over 12 megabytes in zipped format unzipped it is about 42 megabytes. This is the file that allows us to identify every known object in our field of view. It contains data for essentially every known minor body in the solar system.

<http://cfa-www.harvard.edu/iau/SpaceJunk/SpaceJunk.html>

If you do happen to come across a fast moving object that is not listed in the MPCORB file mention above, you might check here to see if it is a piece of space junk or even an active spacecraft.

<http://cfa-www.harvard.edu/mpec/RecentMPECs.html>

If you want to check an see the MPEC (an official IAU announcement) on the object you picked up on the NEOCP page a couple of days ago this is where they are available. This will not show the IAU circulars. (There is another site for that - <http://cfa-www.harvard.edu/iauc/RecentIAUCs.html>. Some circulars are not available for a month or so; usually its announcing a new comet discovery.)

## HERE ARE SOME PRICES FROM THE NEKAAL STORE:

Periodicals  
S&T \$32.95  
Astronomy \$29.00

Merchandise  
hats \$8.00 marked down

Tshirts \$8.00 marked down  
Sweatshirt \$10.00 marked down  
Name tags *free*  
Tote bags \$8.00  
Coffee Mugs \$10.00

**Please contact Walter or Nancy Cole to acquire any of these items.**

## FACILITIES REPORT—JUNE 2004: by Bill Leifer

- Preventive maintenance and supplies were performed for May.
- The roof cable has been tightened, and the roof now operates more smoothly, without slippage of the cable from the pulley.
- A clear plastic floor protector has been installed in the control room (computer room).
- The hand rails for the walkway have been secured to the structure of the building with steel brackets and are now solid. Thank you to Gary Hug for doing that.
- A 9 foot strip of runner carpeting has been placed in the meeting room to hide the damaged carpet.
- The steel posts protecting the vents and equipment on the east side of the building have been replaced.
- The new grass on the east side of the building has grown thick and tall, covering the prior excavation area.
- Gary Hug is having a new Farpoint sign built, which will be on posts just inside the cable fence at the southwest corner of the property.
- Keyholder training guidelines and documentation have been written and approved.
- A laminated checklist showing items that must be completed when closing up the observatory upon leaving has been created and placed on the door in the meeting room. Everyone is urged to familiarize themselves with this checklist and complete all items when you are the last to leave the observatory.
- Wireless high speed internet access to the T-1 internet connection at Mission Valley High School is nearly ready. Final stages of antenna installation and FPO control room setup will hopefully begin the week of June 21, when the new MVHS media center is scheduled to be brought online.
- The lawn mower in the shed has a dead battery and a dull blade, which sounds a lot like a normal aging process. Efforts are scheduled to revive the battery and sharpen the blade, assuming that Medicare will cover this. USD 330 has recently been fulfilling its contractual agreement to provide mowing, although not all areas around the observatory are being mowed.
- The trim around the door of the shed has not yet been primed and painted, but this is scheduled and continuing efforts to procrastinate are failing.
- Anyone with a carpet shampooer is encouraged to volunteer to shampoo the meeting room carpet, which is filthy. Please email [williamleifer@usa.net](mailto:williamleifer@usa.net), if you want to do this. It would be great, because then I won't have to.

## FINANCES: by Nancy and Walter Cole

**Nekaal-Bank,Cash,CC Accounts**                      **6/11/04**  
 NEKAAL Cash Flow Report  
 1/1/04 Through 6/1104

### Category

#### INFLOWS

Contributions .....201.00  
 Contributions-In Kind .....33.77  
 Dues 2004 .....690.00  
 Int Inc-Interest Income ..... 1.57  
 Net Sales:  
   Cost of Mdse .....-292.20  
   Sale of Mdse .....46.00  
 TOTAL Net Sales ..... -246.20  
**TOTAL INFLOWS .....680.14**

#### OUTFLOWS

Computer:  
   Internet dial up on line.....33.77  
 TOTAL Computer .....33.77  
 Dues.....50.00  
 Equip.—Tombaugh .....2,840.00  
 FPO Utilities .....348.47  
 Repair & Maint .....57.33  
 Subscriptions:  
   Magazine Subs     98.85  
   Subs.payments recd -98.85  
 TOTAL Subscriptions .....0.00  
 Supplies .....84.20  
 Telephone-phone Exp .....181.43  
**TOTAL OUTFLOWS ....-2,915.14**

**OVERALL TOTAL ..... -1,348.99**

**Nekaal-Bank,Cash,CC Accounts**                      **6/11/04**  
 Cash Accounts  
 As of 6/11/04  
 Acct                      Balance

#### ASSETS

Cash and Bank Accounts  
 Money Market ..... 571.00  
 Money Market 2-  
   Telescope Fund ..... 1,698.00  
 Nekaal-checking ..... 128.28

**TOTAL Cash and Bank Accounts..... 2,397.28**

**TOTAL ASSETS ..... 2,397.28**

**LIABILITIES..... 0.00**

**OVERALL TOTAL ..... 2,397.28**

## SPACE WEATHER: by Patrick Barry and Tony Phillips

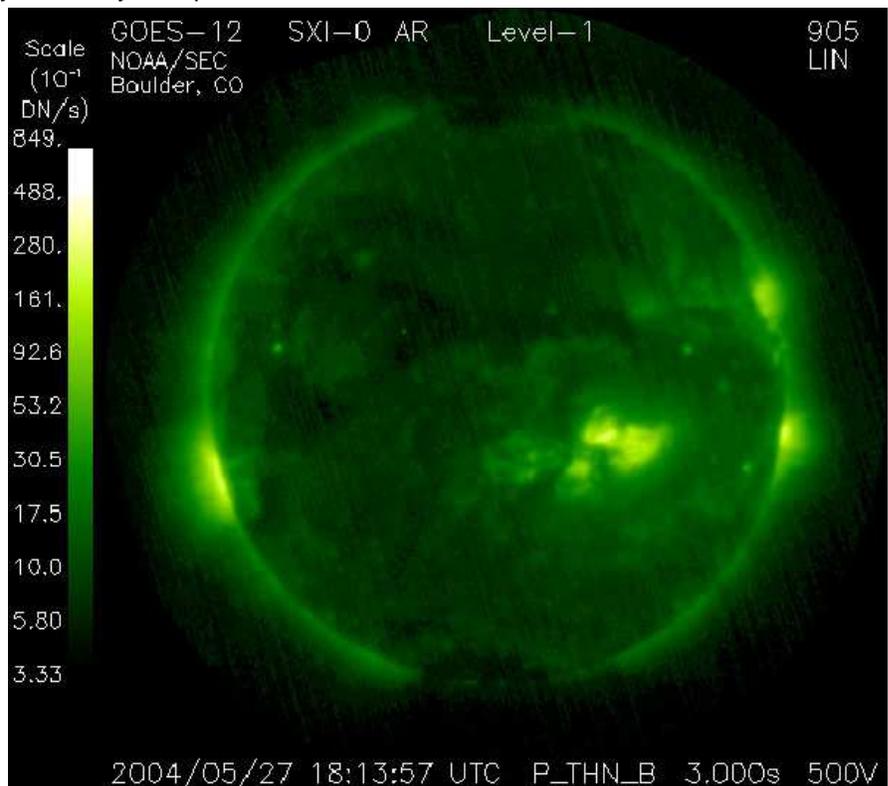
Radiation storms, 250 mile-per-second winds, charged particles raining down from magnetic tempests overhead ... it sounds like the extreme weather of some alien world. But this bizarre weather happens right here at Earth.

Scientists call it "space weather." It occurs mostly within the gradual boundary between our atmosphere and interplanetary space, where the blast of particles and radiation streaming from the Sun plows into the protective bubble of Earth's magnetic field. But space weather can also descend to Earth's surface. Because the Earth's magnetic field envelops all of us, vibrations in this springy field caused by space weather reverberate in the room around you and within your body as much as at the edge of space far overhead.

In fact, one way to see these "geomagnetic storms" is to suspend a magnetized needle from a thin thread inside of a bottle. When solar storms buffet Earth's magnetic field, you'll see the needle move and swing. If you live at higher latitudes, you can see a more spectacular effect: the *aurora borealis* and the *aurora australis*. These colorful light shows happen when charged particles trapped in the outer bands of Earth's magnetic field get "shaken loose" and rain down on Earth's atmosphere.

And because a vibrating magnetic field will induce an electric current in a conductor, geomagnetic storms can have a less enjoyable effect: widespread power blackouts. Such a blackout happened in 1989 in Quebec, Canada, during a particularly strong geomagnetic storm. These storms can also induce currents in the metallic bodies of orbiting satellites, knocking the satellite out temporarily, and sometimes permanently.

Partly because of these adverse effects, scientists keep close tabs on the space weather forecast. The best way



*This image shows the outer solar atmosphere, or corona, as viewed by the GOES 12 Solar X-ray Imager (SXI). It shows the plasma at 4.0 MK (million degrees Kelvin). Bright areas are associated with sunspots seen in white light images and may produce explosive events known as flares. Dark regions are coronal holes where the fastest solar wind originates. Image courtesy of the Space Environment Center/NOAA.*

to do this is to watch the Sun. The NASA/ESA SOHO satellite and NOAA's fleet of GOES satellites keep a constant watch on the Sun's activity. If a "coronal hole"--where high-speed solar wind streams out from the Sun's surface--comes into view, it could mean that a strong gust of solar wind is on its way, along with the geomagnetic storms it will trigger. And an explosive ejection of hot plasma toward the Earth--called a "coronal mass ejection"--could mean danger for astronauts in orbit. The advancing front of ejected matter, moving much faster than the solar wind, will accelerate particles in its path to near the speed of light, spawning a radiation

storm that can threaten astronauts' health.

Look for coming articles for more about space weather and about NOAA's efforts to forecast these celestial storms. Meanwhile, read today's space weather forecast at <http://www.sec.noaa.gov/>. Kids can learn about the geostationary and orbits of the GOES satellites at [http://spaceplace.nasa.gov/en/kids/goes/goes\\_poes\\_orbits.shtml](http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml).

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

**We are members of NASA's *Night Sky Network*.**

**Take a look at their home page:**

**<http://www.darksky.org/>**

**Night Sky Network**

"Astronomy clubs bringing the wonders of the universe to the public"



## TRANSIT OF VENUS: by Dr. Edwin Woerner

Everybody knew that Dubai would see clear skies on June 8. There will be no clouds here until autumn, which does not automatically mean that seeing will be good. It's also common knowledge that Dubai would feel heat – over 45°Celsius, 113° Fahrenheit.

Looking westward over the waters (and oil tankers) of the Gulf of Arabia, also known as the Persian Gulf, I saw Venus with the naked eye on the evenings of June 1 and 2, less than 10° above the horizon at the exact time that the prayer call marking sunset began. I cannot see its crescent shape with the naked eye although Helen can. On June 3 and 4 binoculars revealed the planet's pencil-line-thin shape less than 30 minutes before it set. After that, the next time I'd see Venus it would be superimposed on the disk of the sun.

The transit of Venus received coverage ahead of time in both the English and Arabic language newspapers. Helen and I mailed a newsletter about the event to schools and news media in several Gulf countries, and we had been quoted in the press. Newspapers mentioned that there would be a few telescopes set up for public viewing in the UAE, but so far as we know we have the only scope in Dubai.

I arrived on campus at the American University in Dubai at about 8:30 a.m. First contact would be 9:13 a.m. local time, so I filled a water bottle and left air conditioning behind for most of the day. With the help of a student volunteer it took just a few minutes to set up my six-inch Newtonian reflector. I had a solar filter made of Baader filter material, a pair of 10 x 25 Binomite binoculars made by Coronado, and some handheld filters also made from Baader's aluminized Mylar.

I was between the administration building and the cafeteria, which meant there would be a steady stream of traffic all day. An inter-

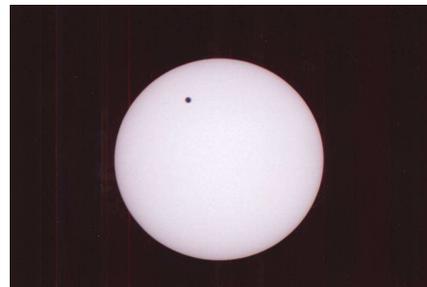
ested group formed immediately, and we watched together for any sign of first contact. I knew that the planet would come from the eastern edge of the sun, and at about 9:20 I noticed the first imperfection in the perfectly circular solar limb. This became a nibble, that turned into a bite, which grew into a chunk, and finally the sun swallowed the entire planet onto its disk, and we saw sunlight separating an inky black circle from the limb.

We noticed a chain of small sunspots across the center of the sun. None were very large, but the two biggest revealed some structure at higher power. I told viewers that there was a magnetic storm happening there today. Usually I kept the magnification at about 50x in order to show the entire solar disk and to minimize differences in focusing from one person to another.

Since I never went far from the telescope things I didn't think the view changed much from one peek to the next. However many others made a point of returning at intervals of one or two hours, and they often commented about how much Venus appeared to have moved.

As popular as the telescope was, the handheld filters turned out to be at least as interesting and as much fun for everybody. Visitors made typical star party comments about looking at a picture projected inside the tube of the scope, but nobody could deny seeing the transit with their own naked eyes through a filter. Beforehand, I'd heard that the transit should be readily visible to the naked eye, and it certainly was. These filters offered a very personal way to participate in the event.

Most who stopped to look were interested and curious. They knew ahead of time that the event would occur, and many knew that transits of Venus were rare with the last occurring 122 years ago. Many saw the lunar



eclipse in May, and some remembered the total solar eclipse that passed through the Middle East in 1999. There was much surprise that Venus appeared so small, and I explained that this is mostly because the sun is so huge.



About 3 p.m. the planet reached the opposite edge of the sun's disk and began the process of leaving. Some asked where it was going, and I told them that it would become visible in the morning sky within a week or two.

Venus will transit again in 2012, and while this event will also be visible from the Middle East, it will be friendlier than this year's transit for North American viewers. However in November, 2006, the planet Mercury will make a transit. This transit will not be visible from Dubai, but Kansans should have no trouble observing it.

## BOARD MINUTES, JUNE 13, 2004: by Bill Leifer, abbreviated by Graham Bell

Present: Gary Hug, Jerry Majers, Graham Bell, Bill Leifer, Janelle Burgardt, Russell Valentine. Absent: David Ryan, David Costales, Dan Tibbetts, Julee Fisher and Walter Cole. Others present: Debbie Roberts, Bill Roemer.

Meeting: Called to order at 3:37. Minutes: Approved.

Financial Report: See [page 4](#).

Facilities Report: See [page 4](#).

Old Business: 1) School is working on media center connection. Internet is getting closer to being a reality. 2) Board Job Descriptions approved with one mi-

nor modification. 3) NASA/Goddard paperwork to transfer funds is in the process of being approved. 4) Keyholder guidelines approved pending one addition relative to MVHS lights. 5) FAST Training, moving pretty slowly. 6) Scope design and methods to protect equipment from impacts (falling) were discussed. 7) Bruce Twarog is leading the effort to form a consortium of schools and astronomy groups. 8) Janelle has received info from the IDA (See article on page 2).

New Business: 1) Debbie Roberts has been appointed to the newly created *Education Liaison* position. 2) Astronomical League membership will be renewed. In the fall, the membership will be given to opportunity to vote on whether to continue this membership. 3) Web service requirements are changing significantly. A committee has been appointed to address the Web design.

**Full minutes available at YAHOO NEKAAL MEMBERS group.**



## 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.**

### July General Meeting

Thursday, July 22, 2004, 7:30 pm  
Stoffer Science Hall, Room 103

**Edwin & Helen Woerner: Astronomy in the Middle East**

### Whom do you 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 Cole
<u>FAST:</u>	Gary Hug, 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

Graham Bell	256-6281	gebelt@mindspring.com
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Walter Cole	266-4911	w.i.cole@worldnet.att.net
David Costales	256-2327	dcostales@bigfoot.com
Julee Fisher	234-2826	
Gary Hug	836-7828	frogstar@intergate.com
Bill Leifer	478-4249	williamleifer@usa.net
Jerry Majers	862-8869	jmajers@cox.net
David Ryan	272-0177	dlryan@cox.net
Dan Tibbets		Ddtfp@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 2004

February 13	7:30	<b>July 23</b>	<b>9:30</b>
March 12	7:30	August 20	9:00
March 26	7:30	September 18	8:30
April 30	9:00	October 23	8:00
May 28	9:00	November 20	7:30
June 25	9:30		

## Club Observing Dates for 2004

January 23-24	<b>July 16-17</b>
February 20-21	August 13-14
March 19-20	September 10-11
April 16-17	October 15-16
May 21-22	November 12-13
June 18-19	December 20-21

## 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

