



THE NEKAAL OBSERVER

October 2005 VOLUME 13, ISSUE 10

PO BOX 951, TOPEKA KS 66601
(785) 449-2102 www.nekaal.org

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

NEO Work: The CCD camera has been returned to SBIG again, this time at their cost. They are trying to resolve a problem and we hope to have the camera back by the time you read this.

E/PO Building: Mark Borton and Bill Leifer have worked out the preliminary construction specifications. The board plans to meet with Mark to assure that all requirements are accommodated.

October Meeting is Special: Dr. Bruce Twarog, of KU, has always been one of the favorite speakers at our meetings. This year he gave a talk at ALCON, which was so well received that a couple of attendees told me that I had to get him to give the same presentation for NEKAAL. Bring your friends and neighbors to the October 27th meeting and catch his presentation: *Wading in the Tidal Streams of the Milky Way*.

Survey: If you haven't filled out the member survey yet, get with it. For details see last month's *Observer*.

Minutes: This month the minutes are again on the YAHOO group site.

Minutes are inserted in to the mailed copies of the *Observer*.

Insurance: This year our Farpoint insurance came to a total of \$1277. Last year the bill was \$838, so we saw an increase of \$439. Much of this is due to the Tombaugh, which we are required by NASA to insure until our contract with them expires in 2007. Some of the increase is probably just due to the fact that insurance has been going up each year anyway.

As of September 20, we have received \$340 in donations to help with the insurance costs. Note that paying the insurance has depleted our money market account (from \$825.01 to \$0.00) and reduced our checking account from \$409.65 to \$289.35. Help is needed to defray these costs this year.

We need donations (There is a donation form on page 7).

Nominations: It is time to get some new blood on the board (some of us feel a little anemic). Make a commitment to get your nomination forms to Bill Leifer by October 1. See page 2 for details.

In this issue...

From the President:	1	Mars in October	4
FastTracks	2	Astronomical Research from Home .	4
Upcoming E/PO Events	2	Finances	5
Nominations.....	2	Facility Report.....	5
Note from the Sierra Club	2	Where no Spacecraft Has gone	6
Sky Highlights	3	Calendar	7
MVHS Football Schedule	3	Meeting and Observing Schedules ..	8
NEKAAL Store	3	Minutes	Insert

FASTTRACKS : BY Gary Hug

Just before the time our NASA grant will expire, one of the new deep imaging surveys will come on-line. Pan-Stars is slated to start in the late fall of 2006, will regularly reach down to 23rd magnitude and will cover some 60 degrees around the ecliptic. (I'm thinking it is supposed to do so several times a lunation.) At that time the amateurs role with near-earth objects may well be diminished to the point where it no longer makes sense to continue the hard work it takes. Right now is the time to be active in the history of NEOs, minor planets, comets, TNO's even if you never make a 'discovery'. Right now our purpose

is defined and there is a need for our work with NEO Follow-up. Right now we are providing a very important service to not only our community but to some extent the entire world. Let's not loose the moment. In a few years new surveys will no longer have a need for as much follow-up observation as most will be repetitive enough in their normal monthly runs.

In other topics (just somewhat related) I have imagined one of the new distant solar system discoveries called 2003 UB313 and have uploaded images to the NEKAAL Members Yahoo Web Site. Incredibly both images were of the same star field and

shows a position change of only 20 arc-minutes even though the integrations were 40 days apart. The magnitude of the object in both images is 18.9 V. Easily within range our most amateurs equipped with 10" telescope and CCD.

There is a great deal of controversy about at least one of the three recently discovered large solar system objects, but to go there now is beyond the scope of this segment of the Observer, however if you are interested here are a couple of links to get you started...

FastTracks Links:

<http://www.hohmanntransfer.com/news.htm>

http://news.com.com/One+find,+two+astronomers+An+ethical+brawl/2100-7337_3-5862441.html

Ed: And here is another: <http://www.newscientistspace.com/article.ns?id=dn8033>

Ed: And One more: http://space.com/scienceastronomy/050921_planet_definition.html

UPCOMING EDUCATION / PUBLIC OUTREACH EVENTS: BY Jan Burgardt

October 7 Who: Kansas Explorers group
What: Observatory tour
Where: Farpoint Observatory
Presenter: Janelle, volunteers

October 11 Who: Stout Elementary PTA
What: Presentation and observing session
Where: Stout Elementary, Topeka
Presenter: Janelle, volunteers

October 24 Who: Salina High School students
What: Classroom presentation
Where: Salina, KS
Presenter: Janelle

October 26 Who: 1-5 grade students
What: "Hobby Day" presentation on amateur astronomy
Where: Mission Valley Elementary

TBD: Presenter: Janelle
Who: Middle school math classes
What: Practical math applications in astronomy
Where: Mission Valley Middle School
Presenter: Graham

TBD: Who: 1-4 grade students
What: Classroom presentation
Where: Theodore Roosevelt Elementary, Manhattan, KS
Presenter: Janelle

Dates in October and November

Who: General public
What: Star Party for Mars close approach
Where: Farpoint Observatory
Presenter: NEKAAL members

NOMINATIONS FOR 2006 OFFICERS AND BOARD

Please turn nominations for the board and officers in to Bill Leifer by October 1. For those with online access, the form can be found in the Yahoo Group Members Mailing List in the files section.

The file name is: ***nominate 2006..pdf***.

For those who do not get their Observers online, the form was included in last

month's Observer. If you need another copy, you can request it from Bill Leifer or Graham Bell.

Note From the Sierra Club

I wish to thank you for our visit to Farpoint Observatory. The opportunity to view and learn about the night sky was extremely fascinating. We appreciate everyone's hospitality during our visit.

Thanks again,
Jack Smith
Topeka Sierra Club

SKY HIGHLIGHTS: *by Janelle Burgardt*

Sky Highlights for October

NOTE: All times CDT

October 1 Mars begins retrograde.
 October 3 New Moon
 October 10 First quarter moon
 October 17 Full Moon. The Hunter's Moon is in October this year. Also called Moon of Falling Leaves.
 October 22 Jupiter at conjunction
 October 24 Last quarter moon
 October 26 Neptune ends retrograde.
 October 29/30 Mars closest approach to Earth this cycle.

Planets

Mercury— Very low in the west shortly after sunset during the first few days of the month

Venus— Rising higher in the sky throughout the month at magnitude -4, Venus is waning gibbous, lessening to

half-illuminated by end of month .

Mars— Great this month... see below and page 4.

Jupiter— Visible in the first week of the month at magnitude -1.7, but disappearing into western twilight by mid-month .

Saturn— Magnitude +0.4, still near the Beehive cluster (M44) in Cancer, rising about 2 a.m. on the 1st, but before midnight by the 31st.

Uranus— Magnitude +5.8 in Aquarius, ends its retrograde motion on the 26th.

Neptune— At +7.9 magnitude in the constellation Capricornus.

Pluto— Lost in the sun's glare this month.

MISSION VALLEY HIGH SCHOOL FOOTBALL *by Jan Burgardt*

The public Open House schedule changes during the fall, moving from Fridays to Saturdays, to accommodate Mission Valley High's football games. For those who would like to go out to Farpoint to observe, keep in mind that the lights of the football field will be burning bright for home games. The football schedule is printed here to aid in planning your observing sessions. The schedule can also be found on the Members Yahoo Group in the Files section.

MVHS Varsity Football Schedule 2005 (Home games in CAPS)

SEPT. 2 VALLEY HEIGHTS
 Sept. 9 Nemaha Valley
SEPT. 16 HERINGTON
SEPT. 23 COUNCIL GROVE
 Sept. 30 Pomona
 Oct. 7 Osage City
OCT. 14 ROSSVILLE
 Oct. 21 Northern heights
 Oct. 27 Wabaunsee

Away games pose a minor problem in that parking lot lights cannot be extinguished until after players and fans have returned to Mission Valley, and the busses and cars have departed.

JV Games are played during the week (Tuesdays?). Other sports are conducted during the day, at least until basketball season, so shouldn't present an observing problem.

AFFILIATED ORGANIZATIONS:



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



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

23 Events + 0 Pending

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

HERE ARE SOME PRICES FROM THE NEKAAL STORE:

Periodicals		Merchandise		Tote bags	\$8.00	
S&T	\$32.95	hats	\$8.00	marked down	Coffee Mugs	\$10.00
Astronomy	\$34.00 - Note the recent increase in price!	Tshirts	\$8.00	marked down	Please contact Walter or Nancy Cole to acquire any of these items.	
		Sweatshirt	\$10.00	marked down		
		Name tags	free			

MARS IN OCTOBER

by Jan Burgardt

Magnificent

If you want to see Mars, this is your best chance until **2018**. Mars rises 2 hours after sunset at the beginning of the month, but only ½ hour after at month's end. Magnitude increases from -1.7 to -2.3 over the month. It reaches its closest point to the earth on October 29 at 10:24 pm CDT (October 30 3:24 UT). Although it's further away than it was in 2005, this time around it's 20° higher in the sky. *That* means that seeing will be steadier, details sharper, and all-around viewing better than in 2005.

Open House Dates for Mars

Want to see Mars at its best? Wonder what happens at an Open House at Farpoint Observatory but afraid to ask? Need a way to entertain friends and relatives? Have we got a deal for you!

To make the upcoming Mars show available to more people, we're adding several Open House dates to the calendar. In addition to the regularly-scheduled date on October 8, three dates will be added in October, including October 29, **date of closest approach**.

Open House begins at 8:30 p.m. Cancellations due to cloud cover will be posted on the Farpoint phone message (785-449-2102).

Saturday, October 15
Friday, October 21
Saturday, October 22
Saturday, October 29 (date of closest approach)

Invite your friends and neighbors to see Mars at its best! (At Farpoint, of course)

ASTRONOMICAL RESEARCH FROM HOME

by Brian R. Martin

How would YOU like to detect a gravity wave passing through earth from a spinning neutron star? Perhaps compute the orbits of NEOs on your own computer? How about detecting extrasolar planets by analyzing CCD images and looking for a dimming star that indicates it?

Sounds challenging, yes? Of course, you're thinking... 'I don't have the experience or resources to do this!' The good news is that you don't have to do any of the work yourself! Your computer can do all of this at the same time and you don't have to do a thing other than install one simple program on your computer and sign-up for whichever project(s) you would like to assist with.

All of this is due to a project developed by the University of California, Berkeley, Space Science Laboratory called BOINC (Berkeley Open Infrastructure for Network Computing). <http://boinc.berkeley.edu/>. BOINC was developed as a result of the huge success of SETI@Home, a project that allowed home users to let their computers sift through huge amounts of data from the Arecibo radio telescope. SETI@Home became so popular that within years it became the world's largest and fastest 'virtual' supercomputer. The computer scientists associated with SETI@Home quickly realized that this computing power could be leveraged for many different scientific endeavors. BOINC was created to fill this need. It provides project scientists a framework program to handle to distribution of their science application (and data) to 100's of thousands of computers.

Recently a number of astrometry related application have been moved to BO-

INC that are near and dear to the hearts of NEKAAL members.

- Einstein@Home (<http://einstein.phys.uwm.edu/>) Analyzing data from the LIGO (Laser Interferometer Gravitational wave Observatory) and GEO600 gravity wave observatories. This project is currently in operation and the '@Home' computing power has contributed significantly to the 3rd science run and is just now starting the 4th run.
- Orbit@Home (<http://orbit.psi.edu/>) Using home PC's to compute orbits of NEOs (Near Earth Objects) and track more objects simultaneously than either NEODYs in Italy or JPL is capable of doing. Both of these projects currently use their own supercomputers to perform the same task, but both have limited resources. Orbit@Home should provide enough computing power to keep up with the ever growing number of observatories providing measurements (like Farpoint!) This project is currently in beta testing and they hope to have clients available for Windows based computers soon.
- PlanetQuest (<http://www.planetquest.org/about/computing/>). PlanetQuest software is a **virtual astronomy lab** on your computer, allowing you to run a variety of experiments on a given star target. Or you can choose to let PlanetQuest make all the decisions for you automatically. This project is still in very early internal alpha testing and they are still arranging funding for the full scope of the project.

• In addition, there are many other projects you may choose to participate in. There's *climateprediction* net : <http://www.climateprediction.net/> for long-term climate prediction. LHC@Home: <http://athome.web.cern.ch/athome/> to model particles and help improve the design of the CERN LHC particle accelerator. Predictor@home <http://predictor.scripps.edu/> to investigate protein-related diseases and many others coming.

YOU choose how much support and resources you wish to contribute to each project.

To participate in a project:

- 1) Go to the project's web site and create an account.
- 2) Download and run BOINC software from <http://boinc.berkeley.edu/download.php>.
- 3) Attach your software (using a key emailed to you) each project you have an account with.

NEKAAL now has a 'team' formed on the Einstein@Home project for members to join, should they wish to participate. (I'll get into the reasons why in a moment)

The address is: http://einstein.phys.uwm.edu/team_display.php?teamid=3599

Just log into your account and click on the 'Join' link to join the team. The 'team' allows us to see each other's relative contribution, climb the ranks of other teams and perhaps most importantly, provides one more link on the internet to our site and hopefully a little positive publicity.

Many other web sites track the statistics of the various BOINC projects, including

(Continued on page 6)

FINANCES: by Walt and Nancy Cole

Nekaal-Bank,Cash,CC Accounts September 18, 2005
Cash Accounts

.....Account	Balance
ASSETS	
Cash and Bank Accounts	
Money Market	0.00
Money Market 2-Telescope Fund	698.00
Money Mkt 3-Education Building	6,075.00
Nekaal-checking	289.35
TOTAL Cash and Bank Accounts	7,062.35
TOTAL ASSETS	7,062.35
LIABILITIES	0.00
OVERALL TOTAL	7,062.35

NEKAAL Cash Flow 1/1/05 Through 9/18/05

Category Description	
INFLOWS	
Contributions	5,426.00
Dues 2005	620.00
Dues 2006	35.00
Int Inc-Interest Income	4.17
Memorial-Kessler-contributions	1,500.00
<u>NASA Grant-NASA Grant activity:</u>	
NASA - A Grant-Received	26,145.20
NASA - CCD Camera	-139.13
NASA - Site Preparation	-387.98
NASA - Scope Grant Disbursements	-25,747.22
TOTAL NASA Scope Grant activity	-139.13
NASA Grant -Education:	
Monies Rec'd	85.95
Ed-Telescopes	-121.95
TOTAL Grant -Education	-36.00

Net Sales:	
Cost of Mdse	-140.18
Sale of Mdse	123.00
Sales Taxes	-13.16
TOTAL Net Sales	-30.34
TOTAL INFLOWS	7,379.70
OUTFLOWS	
Annual Report	40.00
Dues	165.00
Equipment - Astronomy Equip	23.64
FPO Utilities	180.00
Insurance - Ins on Bldg & prop.	1395.00
Postage	120.26
Repair & Maint	779.72
Subscriptions:	
Magazine Subs	161.85
Subs.payments recd	-161.85
Subs Other	-34.00
TOTAL Subscriptions	-34.00
Supplies-Supplies	153.34
Telephone-Telephone Expense	452.81
Telescope Dedication	194.69
TOTAL OUTFLOWS	3,470.46
OVERALL TOTAL	3,909.24

FACILITY REPORT: by Bill Leifer

September preventive maintenance and supply inventory is scheduled for the last half of the month, so there is nothing to report for the Observer as of Sept. 18.

The observatory meeting room is cluttered with extraneous items, and an Autumn junk removal day will be scheduled for October. Those wishing to donate additional items, please check with the facility director, Bill Leifer, prior to doing this so that the entire Board has an opportunity to make a decision if it is needed, or if there is room for it at the observatory. At the moment, visiting groups will not have a good impression of the facility. The biggest

problem seems to be electronic equipment, including old printers, cables, speaker-phones, the big overhead projector, old dysfunctional office chairs, and some other items.

The Kessler Building plans are slowly being finalized, with final decisions on the roof mechanism, fire code, and possible donated materials. There is a very high likelihood of completion by the end of November, and total construction time is estimated at two weeks.

There was a report of sewage bubbling out of the ground near the septic lagoon to the East of the observatory, and it is possi-

ble that the line from the observatory to the lagoon was damaged during building of the athletic facility East of the observatory. That is being checked out, but the toilet still seems to be operating normally.

The front door to the observatory has a deadbolt lock above the handle lock, which has trouble engaging with the door jamb unless the door his pushed in from the outside while locking. At this point, it does not seem worth replacing the entire jamb mechanism. Please remember that the lock has not engaged unless one has been pushing in on the door a little force while turning the key.

Where No Spacecraft Has Gone Before : by Dr. Tony Phillips



In 1977, Voyager 1 left our planet. Its mission: to visit Jupiter and Saturn and to study their moons. The flybys were an enormous success. Voyager 1 discovered active volcanoes on Io, found evidence for submerged oceans on Europa, and photographed dark rings around Jupiter itself. Later, the spacecraft buzzed Saturn's moon Titan—alerting astronomers that it was a very strange place indeed!—and flew behind Saturn's rings, seeing what was hidden from Earth.

Beyond Saturn, Neptune and Uranus beckoned, but Voyager 1's planet-tour ended there. Saturn's gravity seized Voyager 1 and slingshot it into deep space. Voyager 1 was heading for the stars—just as NASA had planned.

Now, in 2005, the spacecraft is nine billion miles (96 astronomical units) from the Sun, and it has entered a strange region of space no ship has ever visited before.

"We call this region 'the heliosheath.' It's where the solar wind piles up against the interstellar medium at the outer edge of our solar system," says Ed Stone, project scientist for the Voyager mission at the Jet Propulsion Laboratory.

Out in the Milky Way, where Voyager 1 is trying to go, the "empty space" between stars is not really empty. It's filled with clouds of gas and dust. The wind from the Sun blows a gigantic bubble in this cloudy "interstellar medium." All nine planets from Mercury to Pluto fit comfortably inside. The heliosheath is, essentially, the bubble's skin.

"The heliosheath is different from any other place we've been," says Stone. Near the Sun, the solar wind moves at a million miles per hour. At the heliosheath, the solar wind slows eventually to a dead stop. The slowing wind becomes denser, more turbulent, and its magnetic field—a remnant of the sun's own magnetism—grows stronger.

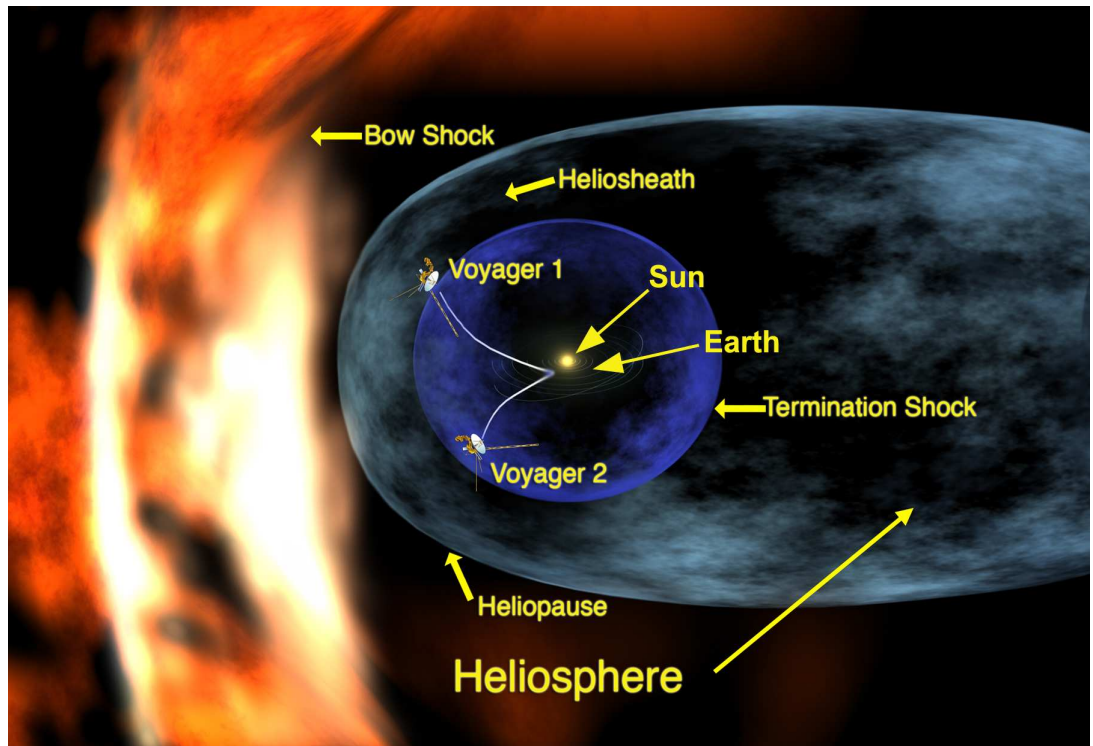
So far from Earth, this turbulent magnetic gas is curiously important to human life. "The heliosheath is a shield against galactic cosmic rays," explains Stone. Subatomic particles blasted in our direction by distant supernovas and black holes are deflected by the heliosheath,

protecting the inner solar system from much deadly radiation.

Voyager 1 is exploring this shield for the first time. "We'll remain inside the heliosheath for 8 to 10 years," predicts Stone, "then we'll break through, finally reaching interstellar space."

What's out there? Stay tuned...

For more about the twin Voyager spacecraft, visit voyager.jpl.nasa.gov. Kids can learn about Voyager 1 and 2 and their grand tour of the outer planets at spaceplace.nasa.gov/en/kids/vgr_fact3.shtml.



Voyager 1, after 28 years of travel, has reached the heliosheath of our solar system.

ASTRONOMICAL RESEARCH (CONTINUED)

(Continued from page 4)

my favorite, BoincStats. Our team's progress can be tracked here:

http://www.boincstats.com/stats/team_graph.php?pr=einstein&id=3599

Let me assure everyone that BOINC and Einstein@Home is SAFE to run and will not adversely affect your computer in any way. It will not slow it down or cause it any harm. The only real "effect" is that your computers will need to periodically connect to the internet to exchange data. This can take up to an hour the FIRST time you connect (on a slow modem connection), but will only require a few seconds to at most a

few minutes after that point. Client programs are available for Windows, Mac OSX and Linux. If you're really knowledgeable, you can even compile the software for any other operating system you might run! Make no mistake, you're contributing to REAL science by doing this. The LIGO scientists have already commented that the E@H participants are helping speed the calibration process of this incredible observatory immensely and things are progressing faster than they ever could have done with their own computing resources! For a complete presentation on what they've been able to do with the public's help,

check out <http://einstein.phys.uwm.edu/PartialS3Results/>

If ANYONE has any further questions about how to use BOINC, how Einstein@Home works, how to set up a computer for it, how to see your statistics or anything about the other projects available, don't hesitate to give me a call (cell phone is best) or simply post to the Yahoo message board. I've been running various distributing projects since ~1997 and can tell you just about anything you'd like to know.

Hope to see others of you joining me in BOINCing for Gravity Waves soon! :)



October 2005

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Club Observing
2	3 New	4	5	6	7	8 Open House
9	10 1st Qtr	11	12	13	14	15 Open House
16 Board Meeting	17 Full	18	19	20	21	22 Open House
23	24 Last	25	26	27 Meeting - Twarog	28 Club Observing	29 Open House
30	31					

2005 NEKAAL MEMBERSHIP FORM

Please check appropriate membership type:

- Individual \$30 Family \$35
 Student \$10 for first year, \$15 each succeeding yr

Name:

Address:

City State: Zip:

Phone Numbers:

E-mail:

Mail form and check to NEKAAL

FARPOINT CONTRIBUTERS

Help us improve and maintain Farpoint Observatory. A \$50 donation (membership dues not included) gets your name on a plaque on Farpoint's *Wall of Fame*.

- I am including an extra \$10 for a one year subscription to the Observer

Contributer Name:

Address:

City: State: Zip:

Name on Plaque:

- Donation is for Farpoint operating fund
 General fund Telescope
 Education/Outreach Insurance

Mail form and check to NEKAAL
PO BOX 951, TOPEKA, KS 66601

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.

October General Meeting

Thursday, October 27, 2005, 7:30 pm

Dr. Bruce Twarog:

Wading in the Tidal Streams of the Milky Way

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

Graham Bell	256-6281 gebell@mindspring.com
Janelle Burgardt	266-5624 sky_liebe@yahoo.com
Walter Cole	266-4911 w.i.cole@worldnet.att.net
Kevin Dobbs	
Gary Hug	836-7828 frogstar@intergate.com
Bill Leifer	478-4249 williamleifer@usa.net
Jerry Majers	862-8869 jmajers@cox.net
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 8,15,22,29 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	August 5-6
February 4-5	September 2-3
March 11-12	Picnic Sept 24
April 8-9	Sept 30- Oct 1
May 6-7	October 28-29
June 3-4	December 2-3
July 8-9	

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