



FARPOINT OBSERVATORY

THE NEKAAL OBSERVER

July 2003

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PO BOX 951, TOPEKA KS 66601

(785) 806-1177 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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FROM THE PREZ: By Jerry Majers

Despite Mars proximity to Earth, it may not be an easy planet to have close observations of. If one is using "natural eye" view...it certainly is at its brightest. If using a small telescope or binocular the disk grows to more than half of Jupiter's size, but stays noticeably big only until the end of September. Other observing hints: a humid Kansas night helps to steady the atmospheric turbulence. Likewise, observe from a cool surface i.e. the observatory or a grassy field. The mall parking lot or paved driveway have residual daytime heat and cause great atmospheric turbulence. Unfortunately, small telescopes and binoculars will not offer what Hubble images or Astronomy magazines, which have exquisite show pictures compared to your Clear skies, "orange blob with a hint of white at the Jerry R Majers

NEW ADDRESS

Gary Hug is moving as of July 26, 2003. His new address:

Gary Hug
964 SW 149th St.
Scranton, KS 66537
frogstar@intergate.com
836-7828 (local Topeka call)

MAGAZINE PRICES

Sky and Telescope has increased their prices, both retail and through the club. With both S&T and Astronomy you can save money by ordering through the club. See (or call) Walter Cole to get prices for Astronomy and Sky & Telescope, or to place an order.

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FAST-TRACKS: by Gary Hug

The trip to Bolivia consumed a lot of last month's new moon NEO time and this month's dark o' the moon finds me changing addresses with all the thrill that comes from picking up and transporting what seems to be a mountain of personal 'stuff' from a residence in town to a (read darker skies) country site.

However, with some perseverance FAST is closing in on it's 1,000 NEO observations mark. At this point we have supplied 892 NEO observations to the MPC. Other observatories such as Powell in Loiusburg, Ks. (KC's very active NEO group) have supplied the MPC with over 6,000 observations ; quite an amazing statistic. During the time we were concentrating on main belt objects they have been consistently honing their

skills on NEO's. An Individual with a roughly equal number of observations as the KC group (although for a much longer time) is John Rogers at Camarillo Observatory in California. John is the author of CAA (Computer Aided Astrometry) a program that has been used extensively at Farpoint for astrometric analysis. There are actually two of what I would call 'amateur surveys'. Roy Tucker and Bill Yeung used different approaches but both had a great deal of success. Bill automated three of Jim Riffle's new 18" Centurions (Newtonian reflectors) while Roy's idea was to mount 3 separate OTAs (optical tube assemblies) on a single mount. In Roy's survey the three telescopes registered fields adjacent to each other in RA and let the scopes drift scan for several hours. The software then stored the data for analy-

sis the next day. By having the second telescope image the area the first one scope imaged a few minutes earlier objects could then be detected. The third telescope being offset a few more minutes behind the second provided a necessary proof of motion and eliminated false detection's. Roy's problem ended up being too much data and too little time for analysis. Bill had automated his search (using stare mode). He used Pinpoint for image analysis and I believe Maxim DL to drive both the telescope and camera. By scripting the nights run his search program continued even while he slept.

An automated system at Farpoint - maybe some day.

SKY HIGHLIGHTS IN AUGUST: by Janelle Burgardt

August 1-2	Public Open House
August 5	First quarter moon
August 8-9	Public Open House
August 12	Full moon Known as the Green Corn or Sturgeon Moon
August 12	Perseid Meteor Shower (largely washed out by the full moon)
August 20	Last quarter moon
August 22-23	Club Observing Weekend
August 27	New moon

*** Mars is definitely the big news this month. The planet's appearance changes markedly over the month. Don't miss it!**

August 1

August 15

August 31

Rises:	10:19 pm (DST)	9:22 pm	8:08 pm
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BUILDING EXPANSION AND FPO—A COMEDY OF ERRORS: by Janelle Burgardt

Construction began in late May on the expansion of Mission Valley High School. About June 12, USD 330 informed NEKAAL that the construction would require the water to be shut off to Farpoint for "a short time". That was just before a full moon—not a real busy time at FPO. Well, that "short time" correlated closely with one lunar cycle; the water came back on July 11, just before the next full moon.

Halfway into the dry period, the contractor managed to crush, cut or mutilate the phone line, ending the internet access. What damage occurred is still unknown. Sprint was notified that repair was needed; as of this writing, we're still offline.

Then came last week. Russ Valentine discovered, at the cost of two flat tires, that our access road (Bodark Road) was littered with nails! Graham's

contact with Chuck Schmidt, USD 330 superintendent, revealed that Chuck has also had a flat on that road. The nails have been removed, a fact certified by Russ, Bill, Graham, two metal detectors and a roofer's magnet.

The construction project has only been underway for two months. Stay tuned as the melodrama unfolds!

BOARD MEETING SUMMARY: Janelle Burgardt

Treasurer's Report

- Club rates for *Sky and Telescope* have gone up (see separate notice in *The Observer*).
- Liability insurance will be due in September. Walt will clarify coverage for the next meeting.

Farpoint Director Report

- Water has been restored. Nails have been removed. Internet access is still unavailable.
- Plenty of fuses and batteries are available.
- Jerry Majers plans to seal the deck when the temperature allows.
- Exterminator hasn't been contacted yet.

Old Business

- NASA confirmed receipt of the proposal. Changes to the design and insurance for transporting the mirror were discussed and will be pursued further.

New Business

- The Topeka Shawnee County Public Library has scheduled a presentation to 20-40 children, 2nd to 5th grade, on October 2.

Conventions and Star Parties by Graham Bell

A number of conventions, conferences, star parties and other significant events will be held in the next few months. Those which might be of interest to members are listed here:

FARPOINT CLUB OBSERVING

July 25-26, and Aug 22-23, 2003

Lets get out and take advantage of this opportunity.

FARPOINT OPEN HOUSE

Aug 1-2 and Aug 8-9 2003

This is your chance to show the public what we do, and help promote astronomy in the area. We will concentrate on Mars for both of these weekends this month. See note below

TENTH ANNUAL NEBRASKA STAR PARTY:

July 27 - August 1, 2003, Merritt Reservoir near Valentine, Nebraska

For more information, please visit the NSP website: <http://www.nebraskastarparty.org/>. A printable PDF brochure with registration form is also available online at: <http://www.nebraskastarparty.org/brochures/nsp-flyer.pdf>

Contact Doug Bell (dougbell@navix.net) or Mark Dahmke (mdahmke@4w.com).

Great Plains Star Party

Sept 23-28, 2003, Scopeville, KS

The 13th annual GPSP. Visit the web site at <http://www.astronomyvillage.org>. For information from registrar, contact Susan Carroll at portia@sciaastro.net

Enchanted Skies Star Party

September 25-28, 2003, Socorro, NM

This is a well known Southwest Star Party, which holds special interest for NEKAAL. Our own Corrie Lambrecht has helped with this the past two years, and will do so again this year. Information can be found at

<http://www.socorro-nm.com/starparty>. Corrie can be emailed at catherine_lambrecht@writeime.com

The Topeka Star Party

October 21, 2003 (rain date Oct. 28).

Sponsored jointly by the Topeka-Shawnee Co. Library and NEKAAL. See page 6 for more information. We hope to have more details available next month.

FARPOINT OPEN HOUSE—MARS VIEWING

Farpoint Observatory August 1-2 and August 8-9, 2003

There will be 2 public open house weekends at Farpoint in August. The first two weekends, August 1-2 and 8-9, are both scheduled for public viewing. Mars won't be in prime position until around midnight, but the observatory will be open for you to bring friends, relatives, neighbors or innocent passers-by. Additional nights may be scheduled, pending staff availability (that means YOU!).

FACILITIES REPORT by Bill Leifer

- Marshall Miller has fixed the lawn mower, which is now alive and well in the shed.
- The water service has been restored after about two weeks interruption caused by the new construction at the school.
- Thanks to Russell Valentine for cleaning up all the nails on Bodark Road using the tires of his car. Following his spate of flat tires, a search of the road visually and using metal detectors has yielded the "all clear" signal.
- The internet security software donated by Symantec through "Gifts In Kind International" has arrived and is ready for installation. Unfortunately, we do not currently need any internet security, because the internet connection phone line remains down. A fix date remains iffy...kind of like a blind date.
- The final contract for electrical meter sharing with USD 330 has gone out to the school board chair, Rob Sage, for signature.
- All supplies and maintenance have been performed and are up to date for July.
- Deck sealing and exterminator evaluation are still pending.
- The wireless internet connection with Mission Valley High School's T-1 line is still a work in progress.

MARS—LOOKING GOOD by Bill Leifer

Here is one amateur's experience with Mars as we approach the best view in recorded human history (ahh, I remember it well).

I went to FPO two nights ago to see Mars for a variety of reasons. First, I knew I would be bothering no one and would have the place to myself, because the moon was nearly full. This allowed me the luxury of eat-

ing, guilt-free, half the yogurt-granola things down into the mid-seventies. bars I had purchased to resupply the place with goodies. The bright moon also allowed unimpeded fiddling with planet.

my 8" LX-200, without turning on the lights or using a red light. The sky was clear, with a very high cirrus layer coming in about 2AM and a little haze from the weather inversion. Despite the blistering heat of the day, the dry almost desert-like air had cooled

I have to say, I was not disappointed. The seeing was great. I was able to crank up the magnification and use my 9mm eyepiece for a magnification of over 200. During brief moments of exceptional seeing, a yellow

(Continued on page 5)

ABBREVIATED FINANCIAL STATEMENT— A/O JULY 13. 2003

Nekaal-Bank,Cash,CC Accounts 7/13/03
Cash Accounts
As of 7/13/03

NEKAAL Cash Flow Report
1/1/03 Through 7/13/03

Acct	Balance	Category Description	
ASSETS		INFLOWS	
Cash and Bank Accounts		Contributions	1,217.00
Money Market	1,367.33	Dues 2003	685.00
Money Market 2-Telescope Fund	3,298.00	Interest Income	3.94
Nekaal-checking	494.72	Net Sales:	-61.72
TOTAL Cash and Bank Accounts	5,160.05	TOTAL INFLOWS	1,844.22
TOTAL ASSETS	5,160.05	OUTFLOWS	
LIABILITIES	0.00	Annual Report	40.00
OVERALL TOTAL	5,160.05	Computer: Internet	120.00
		Dues	125.50
		FPO Utilities	290.60
		Maintenance Bldg. Construction	314.87
		Repair & Maint	827.89
		Subscriptions:	
		Magazine Subs	59.90
		Subs.payments recd	-59.90
		TOTAL Subscriptions	0.00
		Telephone-Telephone Expense	210.16
		TOTAL OUTFLOWS	1,929.02
		OVERALL TOTAL	-84.80

FROM THE BELLY OF AN AIRPLANE: GALAXIES by Dr. Tony Phillips

On April 28th a NASA spacecraft named GALEX left Earth. Its mission: to learn how galaxies are born, how they grow, and how they die.

"GALEX-short for Galaxy Evolution Explorer-is like a time machine," says Caltech astronomer Peter Friedman. It can see galaxies as far away as 10 billion light years, which is like looking 10 billion years into the past. The key to the mission is GALEX's ultraviolet (UV) telescope. UV rays are a telltale sign of hot young stars, newly formed, and also of galaxies crashing together. By studying the ultraviolet light emitted by galaxies, Friedman and colleagues hope to trace their evolution spanning billions of years.

This kind of work can't be done from the ground because Earth's atmosphere absorbs the most energetic UV rays. GALEX would have to go to space. To get it there, mission planners turned to Orbital Science Corporation's Pegasus rocket.

"Pegasus rockets are unusual because of the way they're launched-from the belly of an airplane," says GALEX Project Engineer Frank Surber of JPL.

It works like this: a modified L-1011 airliner nicknamed *Stargazer* carries the rocket to an altitude of 39,000 feet. The pilot pushes a button and the Pegasus drops free. For 5 seconds it plunges toward Earth, unpowered, which gives the *Stargazer* time to get away. Then the rocket ignites its engines and surges skyward. The travel time to space: only 11 minutes.

"The aircraft eliminates the need for a large first stage on the rocket," explains Surber. "Because *Stargazer* can be used for many missions, it becomes a re-useable first stage and makes the launch system cheaper in the long run." (To take

advantage of this inexpensive launch system, GALEX designers had to make their spacecraft weigh less than 1000 lbs-the most a Pegasus can carry.)

A Pegasus has three stages--not counting the aircraft. "Its three solid rocket engines are similar to the black powder rockets used by amateurs. The main difference is that the fuel is cast into a solid chunk called a 'grain'-about the consistency of tire rubber. Like black powder rockets, once the grain is lit it burns to completion. There's no turning back."

In this case, turning back was not required. The rocket carried GALEX to Earth orbit and deployed the spacecraft flawlessly.

On May 22nd, the UV telescope opened its cover and began observing galaxies-"first light" for GALEX and another success story for Pegasus.

For adults, find out more about the GALEX mission at <http://www.galex.caltech.edu/>. Kids can read and see a video about Pegasus at <http://spaceplace.nasa.gov/galex/pegasus.html>.

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



L-1011 "Stargazer" takes off to carry Pegasus rocket on the first 39,000 feet of its climb to deliver a spacecraft to orbit.

MARS—LOOKING GOOD (continued)

(Continued from page 4)

filter resolved actual details of shape at the edge of the polar cap. However, it was not until I used a dark red filter, that the markings of Mars' surface came through. With the dark red filter, the dark and light areas of Mars were not only visible, but sharply delimited and detailed....which is why visual astronomy is my thing, anyway. For some reason, seeing it myself in real time (well, maybe 3 minutes or so later) is a different experience than seeing the much better views available in books and on the internet. There may not be a better time in your life to see Mars in this kind of detail with a relatively small scope. It will be even closer in late August, but there is a chance that huge or even global dust storms will obscure the features by then. A bright moon, even close to Mars is no harm whatsoever for a bright planet.

So, I say you'd better get out there while there are still yogurt-granola bars and a relatively clear Martian atmosphere. If worse comes to worse, though, you will have another opportunity in several thousand years to see it like this. Don't forget a dark red filter. If you want to use mine, that's fine. Call me, and I'll tell you where its kept.

A NIGHT TO REMEMBER by Russell Valentine

It was the night of July 2, 2003. The sky-clock forecasted a good night till about 2 am, so out I went to Farpoint Observatory. It was one of the better nights I've experienced this year. The equipment I used was a Orion XT8, which is a dobsonian 8" f/5.9 telescope. I have a 25 mm (48x), 10 mm (120x), 7.5-mm (160x), and a 2 x barlow for the eye pieces. I used my new telrad like finder the entire time. I think it makes finding objects a lot easier. I found a lot of objects I've never been able to before. It took a little bit getting used to, but I think it is better than my old 7.5x cross hair finder.

I started off trying to find a few things I've seen before and know I could find. I went to M57, Ring Nebula (9.7 magnitude). I found it easy using the finder and was able to look at it with pretty high magnification (320x) while still seeing detail. It looked like a donut, a big round circle with a hole in the middle. The round circle, or ring had texture that was clearly visible. For it being 9.7 magnitude, it is very bright. I went for M4 (5.6 magnitude) and M80 (7.3 magnitude), they are globular clusters located Scorpius. They seemed very dim, and I couldn't seem to focus to get a lot of detail. These globular clusters were 50 degrees from the horizon, by comparison the Ring Nebula was pretty much above my head. There may have been a few patches of clouds in the way as well.

I went hunting for fun around Ursa Major. I found M51 Whirlpool galaxy (8.9 magnitude). I could see two galaxies and fuzzy stuff around them. It is amazing seeing these two galaxies to-

gether. I then tried for M101 Pinwheel galaxy (8.1 magnitude). I just saw it as a patch of gray. It took me 20 minutes to find it. Talk about faint, it took real work locating this galaxy and in the end there wasn't much to see. You would think you could see more of something that has a 8.1 magnitude rating. The Ring Nebula 9.7 magnitude was a much better sight. The thing is M101 is very large and the 8.1 magnitude is its collective magnitude. If the entire objects light was put into a point, it would be bright.

Going for something I haven't seen before I looked at NGC 7000 also known as the American Nebula (4 magnitude). It is close to the star Deneb in Cygnus. I could see some nebulosity around a star. It didn't quite look like the American Continent, but I could tell it was there. Next I went and looked at the great M13 Hercules Cluster (5.8 magnitude), I think this is the king of globular clusters. It is so big and bright, and I could get a lot of detail on it with my 7.5 mm and 10 mm eye pieces. On a good night this globular cluster looks far better in person than digital images of it seen in books. There are thousands of stars of varying brightness creating a tapestry of beauty. It is funny that the name of this cluster is Hercules Cluster. Hercules being a strong character in Greek mythology describes this cluster well, even if it wasn't located in the Hercules constellation.

I went on to the double star Alberio in Cygnus. It is a blue and yellow double star. This double star is very good to look at, as they are two stars of dif-

fering color. Someone once told me they like to show this to Cub Scouts since it matches the Cub Scout colors. I thought I'd checkout M27 Dumbbell Nebula (7.6 magnitude), as it is easy to find if you can find Alberio, you go straight down. This Nebula looked like two triangles connected to each other inside a faint circle.

M20 Trifid (6.3 magnitude) and M8 Lagoon (5 magnitude) were pretty high, so I looked at them. It is pretty amazing when you could see Lagoon with your naked eye, although it is hard as it blends in well with the rest of the Milky Way. This is not possible in the city. What makes Lagoon a great object is its size and texture. You can clearly see the dark lane in the Lagoon Nebula. Going to Trifid you can understand where it gets its name, it looks like the nebula is separated into three. It was a good sight, but I've seen these objects in better conditions before. I have a nebula filter, which dims the background, enhancing the nebula. It helped a little for Lagoon, but not Trifid.

By this time, it was 1:30 am and there was a lot of moisture in the air which scattered the light. Mars was probably 30 degrees above the horizon. I looked at it but it had no detail. The moisture was coming in and conditions were getting worse as predicted by the sky-clock. It was a pretty good night, the best one of the year so far for me. I hope this will inspire those who have dust on their telescopes to be reacquainted with the many wonders of the night sky.

NOTES FROM THE EDITOR by Graham Bell

It is beginning to look like Sprint won't be fixing the phone line from MVHS to Farpoint. It seems they didn't install that line, and won't fix it. As a result, I will start his weekend trying to get the wireless connection to the MVHS high speed internet service. This will take at least several weeks to get up and running. Summer support from MVHS staff is minimal.

Last month, we ran the AstroNerd




cartoon in the observer. I went to the web site to get this month's cartoon, and found that the June one is still the only one available. I'll check again next month. It may be that we will not be able to carry this cartoon after all.

The proposal to build wind turbine generators on ranch land in Wabaunsee County may play to our benefit.

There is a ground swell of 'preserve our environment' building up among

the residents who want to preserve the rural quality of life. I will be attending some meetings and can perhaps add light pollution to the mix while they are trying to keep things pristine. Unfortunately, the first meeting conflicts with tonight's NEKAAL meeting, but others are on the way. I'll keep you informed on the progress (if any) in this column in the next few months.

August 2003

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Open House 9:30	2 Open House 9:30
3	4	5  1st Qtr	6	7	8 Open House 9:30	9 Open House 9:30
10	11 Perseid meteors	12  Full Perseid meteors	13 Perseid meteors	14 Perseid meteors	15	16
17 Board Meeting 3:30	18	19 	20	21	22 Club Ob- serving	23 Club Ob- serving
24	25	26	27  New Mars closest to earth	28 NEKAAL Meeting Mars at Opposition	29	30
31						

2003 NEKAAL MEMBERSHIP FORM

Please check appropriate membership type:

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

Name:

Address:

City State Zip:

Phone Numbers:

E-mail:

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

FARPOINT CONTRIBUTORS

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
☐ Telescope fund

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.

August General Meeting

Thursday, August 28, 2003, 7:30 pm
Stoffer Science Hall, Room 103
Janelle Burgardt : *Bad Astronomy*

Whom do you contact:

<u>Meetings, Speakers:</u>	Jerry Majers
<u>Farpoint Functions:</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
<u>Web Content</u>	Janelle or Graham
<u>Observer Articles</u>	Graham Bell
<u>Other Web Issues:</u>	Russell Valentine
<u>General Questions:</u>	Any board member

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Jerry Majers	862-8869	jmajers@cox.net
Marshall Miller	862-6059	marshallmiller@cox.net
David Ryan	272-0177	dlryan@cox.net
Russell Valentine	862-5046	russ@coldstonelabs.org

"The REAL MEETING" Gathering



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

Open House Dates for 2003

Feb 7-8	7:00	July 11-12	9:30
Mar 7-8	7:30	Aug 1-2, 8-9	9:30
Apr 11-12	9:00	Sept 5-6	9:00
May 9-10	9:00	Oct 3-4	8:00
Jun 6 -7	10:00	Nov 28-29	7:00

Club Observing Dates for 2003

January 3-4	June 27-28
Jan 31-Feb 1	July 25-26
Feb 28-Mar 1	Aug 22-23
March 28-29	Sept 26-27
April 4-5	Oct 24-25
May 2-3	Nov 21-22
May 30-31	Dec 19-20

Farpoint Observatory

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



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