



THE NEKAAL OBSERVER

December 2003

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The official newsletter of Farpoint Observatory and the Northeast Kansas Amateur Astronomers' League

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Secretary Bill Leifer

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Dr Darrell Parnell (WU Retired)
Dr. Bruce Twarog (KU)
Dr. Sam Snyder (WU)

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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

This is quite an experience, putting the *Observer* together while traveling, without the aid of a printer. Proof reading this month will be minimal.

The new NEKAAL board of directors has been elected, as you can see from the list at the left and the photo below. We have, in the past, had twelve board members. This year, there are only eleven, the result of an unsuccessful attempt to break a three-way tie for the 12th position.

Janelle has again been selected to be the Program Director. Bill will again be Observatory Director along with his duties as Secretary.

This year, as President and Chair, I will be asking for a little help with some of my duties. We need speakers for this year. Why not volunteer to put something to-

gether and let me know. I would like to publish the speaker schedule as far in advance as possible. So volunteer quickly before you have a chance to talk yourself out of it.

I will also be preparing the agenda for our board meetings. If there is something you want the board to address, let me know and I'll get it on the agenda. And don't forget, all members are welcome at all board meetings.

There should be many opportunities for some good observing this year, so come on out and use Farpoint! That, or a board meeting might be your only opportunity to see our Secretary, as he cannot attend our general meetings. His Thursday evenings are tied up.

THE 2004 NEKAAL BOARD OF DIRECTORS:



Front, left to right: Bill Leifer, Graham Bell, Janelle Burgardt, David Costales, Russell Valentine.

Back, left to right: Gary Hug, Jerry Majers, Dan Tibbets, Walter Cole, David Ryan.

Not shown: Julee Fisher

Photo: G (or C.). Hug, 12/14/2003

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SKY HIGHLIGHTS FOR JANUARY: by Janelle Burgardt

January 7	Full Moon	January's full moon is called the Old Moon or Wolf Moon
January 4-5	Quadrantid meteor shower	
January 14	Last quarter moon	
January 21	New Moon	
January 29	First quarter moon	

Planets

Mercury—Low in the southeast before dawn

Venus—At magnitude -4.0, set 2.5 hours after the sun on January 1, rising higher to set 3.5 hours after sunset by the 31st.

Mars— Magnitude fades from 0.2 to 0.7, moving from Capricorn into Aries.

Jupiter—Brilliant in Leo from -2.4 to -2.2, rises 3 hours after sunset by the 31st.

Saturn— Shining at -0.4 in Gemini, Saturn is visible all night.

Uranus—Uranus remains in western Aquarius.

Neptune—In Capricorn this month

Pluto— Pluto is lost in the sun's glare.

SOME INTERESTING ALIGNMENTS THIS MONTH by Janelle Burgardt

Sometimes, sky events happen that aren't as avowed sky-nuts like us. particular astronomical note, other than the fact that they are just kinda neat. If you're into planetary alignments (*not* of the astrological type), or just like pretty sights, this month is for you.

Under the "pretty sight" category comes an astronomical Christmas gift. On the evening of December 25th, there will be a close encounter between the crescent moon and the beautiful planet Venus. Show this one to those visiting relatives; it's always an attention-grabber. Astrophotographers really like this one.

There are three different tri-planetary alignments this month. This is the kind of astronomical trivia that appeals to "regular people" as well

Group #1 Mercury-Venus-Mars

All 3 planets are visible in the western sky until midmonth.

Group #2: Venus-Mars-Saturn

After December 8, these planets are all visible in the early evening. Venus and Saturn are at opposite horizons, with Venus in the west and Saturn in the east. By December 31, both planets will be equidistant above their respective horizons. At about 13 degrees above the horizon 1.5 hours after sunset, they'll be bright "bookends" of the night sky.

Group #3: Mars-Saturn-Jupiter

Around midnight all month long, all three of these outer planets will be visible at the same time. Jupiter rises in the east just before Mars sets in the west. On December 31, Mars and Jupiter will both be 10 degrees above opposite horizons shortly after 11PM local time, making a distinctly uneven pair of sky "bookends".

BOARD MEETING SUMMARY, DECEMBER 14, 2003 :

[Final meeting NEKAAL 2003 board](#)

- Treasurer's report given.
- Question on how to resolve tie in voting for board members. Voted to place top 8 as at-large members.

[First meeting of NEKAAL 2004 board](#)

- Voted to appoint Graham Bell as chair, Walt Cole as treasurer.
- Next meeting scheduled for January 11, 3:30 p.m. at David Ryan's house.

FACILITIES REPORT by Bill Leifer

- The road west from Auburn (89th St.) is now open to traffic.
- The FPO mailbox at the corner of Mission Valley Rd. and Bodark Rd. has been damaged beyond use and will need to be completely rebuilt. The mail has been temporarily diverted to Bill Leifer's home until other arrangements can be made. Options include rebuilding the mailbox in its current location, rebuilding the mailbox next to the observatory if the Eskridge main office approves, sharing mail with Mission Valley High School (requiring pick up of mail at the school main office), or obtaining a post office box (once the outcome of the NASA grant proposal is known. NASA requires a physical address for all potential grantee facilities).
- The hinged enclosure to the roof motor will now no longer close around the motor, even with effort and prying. This will need to be repaired or adjusted.
- The wood molding around the left side of the main door into the facility is rotting and coming apart. The rest of the wood appears to be in good shape. This part of the molding will need to be replaced and painted. A spring maintenance weekend will need to be scheduled. The sunken support for the wooden walkway could be repaired at the same time.
- FPO supplies are up to date.
- FPO preventive maintenance for December was performed.

SO LITTLE TIME, SO MANY GALAXIES by Dr. Tony Phillips

Fourteen billion years ago, just after the Big Bang, the universe was an expanding fireball, white hot and nearly uniform. All of space was filled with elementary particles and radiation. "Soupy" is how some cosmologists describe it.

Today the universe is completely different. It's still expanding-even accelerating-but there the resemblance ends. The universe we live in now is "lumpy." Great cold voids are sprinkled with glowing galaxies. In galaxies, there are stars. Around stars, there are planets. On one planet, at least, there is life.

How we got from there to here is a mystery.

Finding out is the goal the Galaxy Evolution Explorer, "GALEX" for short, a small NASA spacecraft launched into Earth orbit April 28, 2003. GALEX carries an ultraviolet (UV) telescope for studying galaxies as far away as 10 billion light-years.

"GALEX is a time machine," says astronomer Peter Friedman of Caltech. Because light takes time to travel from place to place, pictures of distant galaxies reveal them as they were in the past. "GALEX is investigating the evolution of galaxies over 80% of the history of our universe."

The Hubble Space Telescope can see

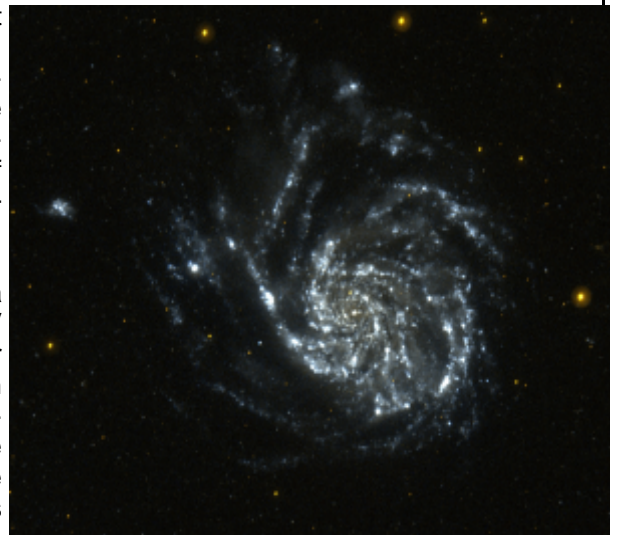
faraway galaxies, too, but GALEX has an advantage: While Hubble looks in great detail at very small regions of the sky, GALEX is surveying the entire sky, cataloging millions of galaxies during its 2-year mission.

GALEX is a UV mission for a reason. Friedman explains: "UV radiation is a telltale sign of star birth." Stars are born when knots of gas condense in interstellar clouds. The ones we see best are the big ones-massive stars that burn hot and emit lots of UV radiation. "These stars are short-lived, so they trace recent star formation."

Understanding star formation is crucial to studies of galaxy evolution. When galaxies collide, star formation surges. When galaxies run out of interstellar gas, star formation wanes. In galaxies like the Milky Way, spiral arms are outlined by star-forming clouds. The shapes of galaxies, their history and fate — they're all connected by star formation.

Even life hinges on star formation, because stars make heavy elements for planets and organic molecules.

"Our measurements of UV radiation will tell us both the rate at which stars



This image of Messier 101 (M101), aka the "Pinwheel Galaxy," was taken in two orbits of GALEX on June 20, 2003. M101 is 20 million light years away.

are forming in galaxies and the distances of the galaxies," says Friedman.

How did we get here? GALEX will show the way.

Find out more about GALEX at www.galex.caltech.edu. For children, visit The Space Place at spaceplace.nasa.gov/galex_make1.htm and make a beautiful galactic mobile while learning about some of the different shapes galaxies can take.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology,

FASTTRACKS by Gary Hug

As most of you know I've been working on a small private observatory in my backyard. Almost as soon as we moved to a darker rural site, I started on this undertaking and it's 90 percent done. Certainly Sandlot Observatory is useable now and I have already turned in 75 NEO observations and have discovered three rather mundane main-belt asteroids. The first two are probably lost having only a couple of days orbital data before the moon grew too large. Even after the moon disappeared the objects were near 21st magnitude. The third 2003 WQ151 was discovered about four days east of opposition and even though the discovery images showed the asteroids to have magnitudes in the 20.5

to 21.0 magnitude range, they would get brighter (ever so slowly) as they approached opposition. I turned in three days (nights?) of orbital data before the moonlight interfered and I had to wait until new moon (almost three weeks) before trying to pick the object back up. The good news is that by then the magnitude was at 20.0. A set of fairly routine ten minute images would show 2003 WQ151 if the prediction wasn't too far off. Indeed the prediction was quite close (to about 30 arc-sec.) and I had recovered the object and increased the orbit to 22 days. I sent the data to the Minor Planet Center and noticed the daily orbit update was just published online. Every day the MPC updates its huge data-

base of all known asteroids adding the past 24 hours observations sent in from around the world. I downloaded the update and used some very useful software (- developed by none other than our own Graham Bell -) called DOULook that will pull out data of specific interest to a particular site. Anyway, the incredible part was that someone had already updated 2003 WQ151 the day before my observations. MPC 691 is Steward Observatory, Kitt Peak-Spacewatch group. They were apparently surveying the area the night before I got there. Thanks to the folks at Kitt Peak for the (very-likely unintentional) support.

(from the Minor Planet Center's Minor Planet Ephemeris Service)

2003 WQ151

Epoch 2003 Dec. 7.0 TT = JDT 2452980.5	MPC
M 328.83928 (2000.0)	P Q
n 0.26441895 Peri. 220.03984	-0.80248541 -0.59604177
a 2.4040361 Node 283.35213	+0.55439234 -0.72784992
e 0.1475597 Incl. 1.61439	+0.22060440 -0.33907036
P 3.73 H 17.2 G 0.15	



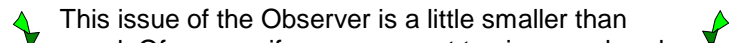
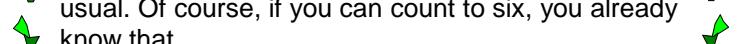
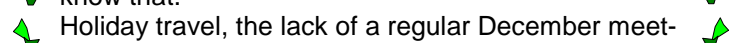
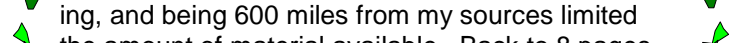



From 13 observations 2003 Nov. 28-Dec. 19.

Residuals

20031128 *H36 0.1- 0.0-	20031129 H36 0.5- 0.4-	20031219 691 0.0- 0.0
20031128 H36 0.6- 0.2+	20031129 H36 0.1- 0.4+	20031219 691 0.1+ 0.1+
20031128 H36 0.6+ 0.1-	20031129 H36 0.2+ 0.1+	20031219 691 0.1- 0.1-
20031128 H36 0.1+ 0.2-	20031201 H36 0.1- 0.5-	
20031129 H36 0.3+ 0.2+	20031201 H36 0.1+ 0.4+	

BUY YOUR NEKAAL PARAPHENALIA HERE

Nancy Cole has the following items for sale	1 large navy T-shirt - \$7
	4 caps - \$8
1 medium Navy sweatshirt - \$10	1 tote bag - \$8
1 xxl navy T-shirt - \$7	


EDITOR'S NOTE:
 This issue of the Observer is a little smaller than usual. Of course, if you can count to six, you already know that.
 Holiday travel, the lack of a regular December meeting, and being 600 miles from my sources limited the amount of material available. Back to 8 pages next month.









This image of comet **C/2002 T7 (LINEAR)**. Taken with Gary Hug's ST9e CCD camera on Jerry Majer's

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.

January General Meeting

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

All Members: Work with new telescope owners

Whom do you contact:

<u>Meetings, Speakers:</u>	Graham Bell
<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 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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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

"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

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

Club Observing Dates for 2004

January 23-24	July 16-17
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 20-22

Farpoint Observatory

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



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