The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

May 1999 **Volume 40 Issue #5**

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Astronomy in NE:	http://www.blackstarpress.com/arin/
Hyde Observatory:	http://www.blackstarpress.com/arin/hyde/

MEETINGS & EVENTS

PAC MEETING
TUESDAY, MAY 25, 1999, 7:30 PM
at Hyde Memorial Observatory

NSP PLANNING COMMITTEE MEETING
THURSDAY, JUNE 10, 1999, 7:30 PM
At Mahoney State Park Lodge

CLUB STAR PARTY
FRIDAY, JUNE 11, 1999 SUNSET UNTIL??
Olive Creek SRA
(See directions on back page)

UNL STUDENT OBSERVATORY
FRIDAY, JUNE 11, 1999, SUNSET UNTIL 11:00 PM
Open to the public

MAHONEY STAR PARTY
FRIDAY, JUNE 18, 1999, BEGINNING AT SUNSET
at Mahoney State Park

PAC MEETING
TUESDAY, JUNE 29, 1999, 7:30 PM
at Hyde Memorial Observatory

MAY'S PROGRAM:

Dr. Kevin Lee

This month Dr. Kevin Lee, of the University of Nebraska at Lincoln, will present a program on "Detecting Extrasolar Planets."

ASTEROID 1996 RS5 HAS A NAME: Bob Linderholm, discover of Asteroid 1996 RS5, also known by its official minor planet number 10195, has given a name to it.

Bob writes: " I got quite a few suggestions for names for (10195). However, I hope everyone will be pleased with the name I submitted, and which name was just accepted by the IAU:

"NEBRASKA"

STAR GAZER: 'STAR GAZER' is the world's first and only do-it-yourself syndicated weekly TV series on naked-eye astronomy (star and planet gazing). Each five minute weekly episode features objects currently visible in the night sky and shows how to find them. It is always current and topical and is aimed at the person who knows little or nothing about astronomy. Read about it inside.

CLUB LIBRARY: The Prairie Astronomy Club has a library with scores of astronomy related books, which are available for loan at no cost to it's members. These books are located in a cabinet at Hyde Observatory, and may be checked out by PAC members at any monthly meeting of the Prairie Astronomy Club. Larry Hancock is our librarian.

ASTRONOMY DAY '99: At last count we had 10 club telescopes on display along with various computer setups and Martin Gaskell's mirror grinding display, which really drew quite a crowd. Be sure to attend the next meeting for a complete update. Also, take a look at some pictures of the event on page 9.

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The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular $20/yr, Family $22/yr**. Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585**. For other club information, please contact one of the club officers listed on the last page of this newsletter. Newsletter comments and articles should be submitted to: **Jeff King, 4018 South 83rd Street, Lincoln, NE 68506-5973 or jeffrey892@aol.com,** no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

Secretary's Report

By: Willa Penney

Dave Knisely opened the meeting. We had one guest, Brian Sivill, who learned of our club through the PAC website.

The next PAC Star Party will be May 14 at Olive Creek State Recreation Area. The next Mahoney Star Party (with the Omaha Astronomical Society) will be May 21; we will set up on the driving range at Mahoney State Park.

Jack Dunn passed around pictures taken during the Cosmosphere trip. PAC members became instant television celebrities and almost got to attend a High School Prom as well as a bowling tournament! And they even had time to see the exhibits!!

Jack presented the latest plans for Aerospace Day/Astronomy Day. Friday will start with set-up at the air base at 8:30; if you are planning to help, please let Jack know as you will need to be cleared to enter the base. About 1200 kids are expected at the Air Guard on Friday. Jack plans to set up the solar scope on Friday. A B-2 flyover is planned. The astronaut, Ken Cockrell, will be at the air base in the morning, and at Morrill Hall from 2-4:00 that afternoon. Another guest will be Al Muller, an engineer who helped design the Stealth technology. He will give a talk at 3:00 on Friday in Morrill auditorium.

If your dues are current, you will receive an invitation to the Friday evening reception for the astronaut and other guests. Please RSVP so that an accurate count is available. This will be held in the new Union with the reception beginning at 6:30, and the program at 7:30 in the new auditorium. Duncan Aviation is sponsoring the reception. Ken Cockrell and Al Muller will both speak that evening.

On Saturday, set up will begin in Morrill Hall at 8:30; enter in the east door. Martin Gaskill and his physics students will have demonstrations set up in the planetarium lobby. Jack will be showing a film “To Be An Astronaut” throughout the day. Jack needs scopes, astrophotos, books, etc. for the Saturday display. There will be a B-2 model from the SAC museum. Door prizes will be given out at 4:00, and tear-down will be immediately after that.

Jeff King was commended for his work with the newsletter; Mark Dahmke continues to do a great job with the PAC website. Liz Bergstrom reported that we have about $350 in our treasury; she reminded everyone to pay their dues on time.

The next NSP committee meeting will be Thursday, May 13, at Mahoney State Park Lodge. Dave Hamilton reported that there are only 4 more meetings before the Star Party (which will be August 7-14), and lots of help will be needed in stuffing packets, packaging T-shirts, etc. Reservations for NSP are ahead of last year at this time. Check out the website for more information about NSP.

Mark Fairchild, Hyde volunteer coordinator, handed out a schedule to volunteers. Volunteers are meeting the 2nd Sunday of each month at Hyde.

Larry Hancock handed out registration forms for the fall banquet. He reported that he already has a few registrations for the event, which will be held in conjunction with OAS at the Mahoney State Park River View Lodge on October 8. Martin Gaskell will be the guest speaker.

Larry also had a handout on galactic forms.

Our program was a presentation by Stephanie Snedden, a graduate student at UNL. She showed slides and told of her experiences at Kitt Observatory and then explained her upcoming work with the Sloan Digital Sky Survey.

Mars Observations

By Club Members

By John Johnson

Here was my Mars Observation from Sat. night, May 8, 1999:
Name: John Johnson
Home: Omaha, NE
Telescopes: 4-inch Meade ED Refractor & 10-inch f/5.6 Newt (on pipe mount, sort of equatorial!)
Observation d/t: Sat. May 8/9th, 1999; 22:00 to 00:30 CDT

I too was out observing Mars last Sat. The "seeing" was some of the best I have seen in recent memory from Omaha, NE. The air was quite humid but really settled out about 10:00 PM CDT. I started out with my 4-inch refractor and soon realized that this was going to be a memorable night! I was using 184x with an orange #21 filter on my refractor and the image was "rock-steady". I could easily see the "tiny" North Polar Cap and some dark markings. Mars' CM
was at 53 degrees. I decided to push the power. I had just received the 25mm and the 18mm U.O. Abbe Orthoscopics (ordered based on Jeff Medkeff's recommendations, from tjhe Shallow Sky List). I was combining them with the Tele Vue 5x Barlow. The 25mm gave the 184x, I thought what the heck, lets try the 18mm with the 5x, which gave 256x(higher than what conventional wisdom says you can use with a
4-inch aperture scope). Wow! What a view, I did have to switch to the lighter yellow #15 filter to let enough light through. I was seeing detail that I had not recalled seeing in many years, if ever. I went in and checked with the Mars Previewer II program to verify what I was seeing. So
here is my observations:

Mare Acidalium was very prominent as well as Niliacus Lacus, although they seemed to just blend together. The "hook" formed by Nilokeras and Idaeus Fons was also visible. Chryse was easy and definitely split the northern
dark areas from the southern areas. The southern area I assumed to be Mare Erythraeum. I could also detect a "whitish" area below Mare Erythraeum on the southern limb. This must have been the Argyre basin area filled with clouds. I switched to my light blue #80A filter and you could see this
whitish area easily. I also noticed some whitish areas on the left hand limb (in my north pole up, mirror image view) that I also interpreted it as clouds on the "sunset" limb of Mars. After all this, I just had to drag out my 10-inch and see what more it would show me.

After letting it cool down for about an hour I popped the 25mm Orth/5x Barlow (282x) with orange filter into the eyepiece holder. I was seeing detail almost like the MP II program shows. I did not see any white spots, i.e. clouds over the Tharsis volcanos but I was resolving some of the "individual smudges" between longitudes 60 and 100 degrees in the southern hemisphere. I could definitely make out Solis Lacus. I went for the 18mm/5x combo, (392x) but the image would zip through the un-driven F.O.V. so fast that it was hard to concentrate on viewing surface detail. I went back to the 282x power and would push the scope ahead and just let Mars glide through. I could even tell that the rotation of Mars was pushing the dark areas closer and closer to the "sunset limb". It was one of those views that you wish you could show everyone to prove that Mars can truly be mesmerizing to gaze at!

I finally finished up about 12:30 AM CDT. By then Mars had rotated around to where the main dark areas were approaching the limb (CM at 90 degrees). It was definitely a night that set a new "bench-mark" for seeing detail on the
"red planet." Hopefully, I will get a few more like it during this opposition.

Clear Skies to all,

John Johnson

By Martin Gaskell

May 8, 1999

Mars presented one of its best views this apparition the last couple of nights. The "Mare Acidalium" side is visible now and for the next few days. Then, next weekend (Astronomy Day!), it will be the classic "Syrtis Major" side.

On Friday and Saturday the seeing was often very good and some really fine detail could be seen. I saw the best details I've seen for the last few oppositions. The blacks of Mare Acidalium, Mare Balti and Solis Lacus were particularly striking in the moments of best seeing as were the colors: strong blues in the extreme south, strong yellow in the Tempe region (dust?). We were able to use magnifications of up to 500X (although most of the time I needed to back down to less than 400X)

My best views last night were closest to the May 2 CCD images of Ant=F3nio Cidad=E3o, in Oeiras, Portugal, but the really steady moments didn't last long enough to record all the details his CCD recorded. I tend to give up drawing when I get overwhelmed with detail. For inspiration for folks with small telescopes, note also the May 4 drawing by Bob Bunge, of Bowie, Maryland using only a 4.25-inch reflector. My drawing last nigth was pretty similar to his.

I don't see as much detail as in Don Parker's images on April 24 (http://www.astroleague.org/marswatch/images/m199904/index3.html)but this is good, because I would be exceeding theoretical limits if I did!. There are times when one covets a 16-inch Newtonian at a more southerly latitude! However, Don Parker hasn't posted any recent images on the web of the Mare Acidalium side.

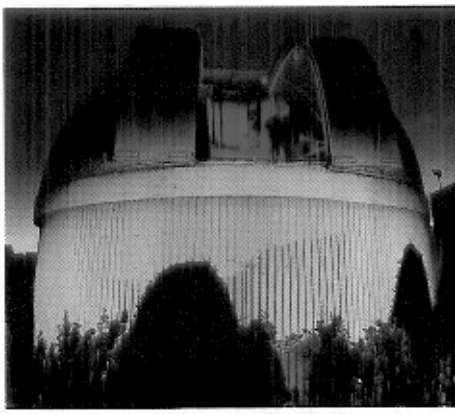
From the MarsWatch web site, thanks to observers elsewhere in the world, you can get sneak previews of next weeks coming attractions on Mars.

Happy Mars viewing,

Martin

Reaching for the Stars

By Bill Sheldon



Being out of the way and away from the glow of city lights is a requirement for an observatory. Photograph by Keith Philpott.

The Powell Observatory near Louisburg is a little difficult to find, unpretentious in first appearance, and put together by ordinary folks using contrived methods. But it turns out to be a nationally famous site and the envy of astronomers worldwide.

The observatory is tucked into the far corner of a Louisburg City park. Being out of the way and away from the glow of city lights is a requirement for an observatory. There is a baseball field at the other end of the park, but games have to end by 9:30 p.m. Even the spotlight on the park's American flag is designed to reduce glare.

The observatory's building is modest, with just a meeting room, the telescope dome, and storage. It all looks rather nondescript, until you see the telescope and learn it is the largest between Wisconsin and Arizona and probably is among the 50 biggest in the world. Then you find out to replicate the facility would cost more than $200,000, $20,000 just for the mirror. But with volunteers and inventiveness, it has been put together for a fraction of that amount.

For example, the overall telescope design was created by a mailman. Its 3,000 pounds are moved by a 1/10 horsepower motor equivalent to that of a weed eater and operated by a new computer program written by a state judge. The telescope's dome roof is a converted silo, which depends on a rubber belt to be moved, and its 12-foot long scope rests on a bearing borrowed from a Boeing 747 landing gear.

"It's the same design Newton used 400 years ago," said Bob Haler, a member of the Astronomical Society of Kansas City, which operates Powell. "We're just a bunch of certified mad scientists having fun."

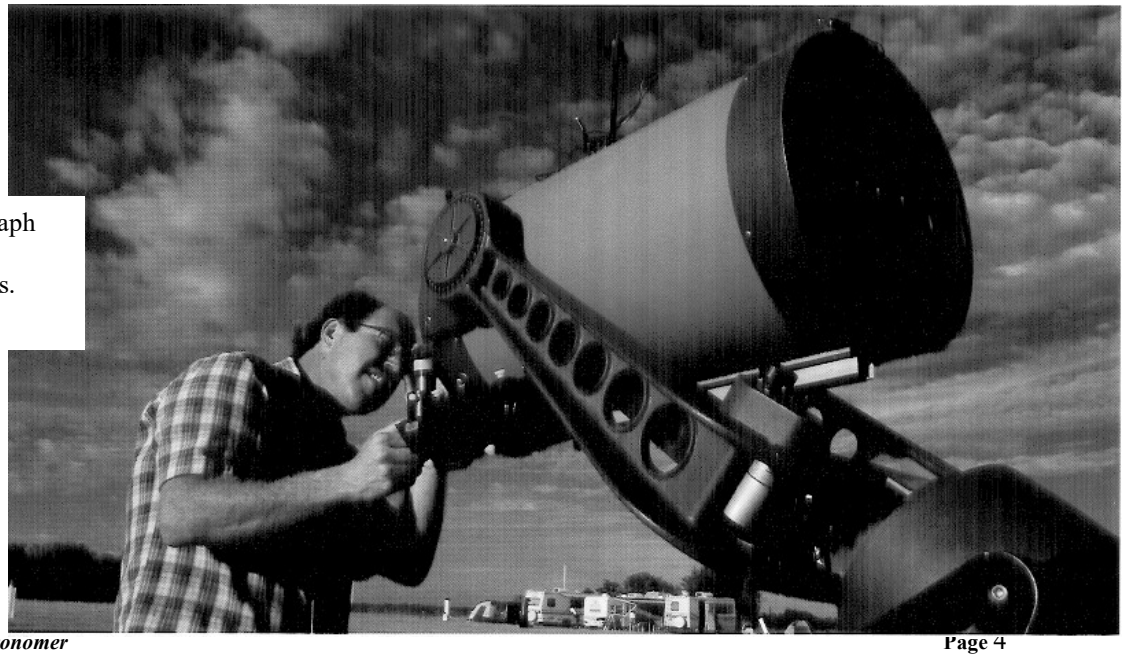
The scope is hand controlled with a remote similar to one used for a television. Yet its computer program is sophisticated enough to find any of 13,000 pre-cataloged objects. You would like to see M2? No problem: Type in the simple data and wait about two minutes, climb the ladder, bend sideways into the viewing lens, and there is M2.

The 30-inch concave mirror varies from two to three inches in thickness. It pinpoints objects within three-fourths of one degree. The sun and moon are one-half of one degree across.

"Our scope is designed to see what we cam dim fuzzies, so we can view a lot of objects others cannot," said Jackie Wade, an Astronomical Society of Kansas City member and a National Astronomical League Officer.

The power of the mirror is determined by its diameter. The larger the mirror, the more light it collects.

There are about 50 members of the astronomy club who have been trained to run the telescope and are available for public programs.



Photograph by Bill Stephens.

Powell is open almost every night. There are public events the first and third Saturdays, April through October. There is no admission, but donations are encouraged. Groups can rent the facility for $30 a night, which includes a society member, a slide show, telescope viewing, and other features. Wade said a typical public night will attract 200 to 300 people. The best viewing starts about 9:30 p.m.

Amateur astronomers are encouraged to bring their own scopes when they visit Powell. There is ample area in which to set up; typically, users browse among them, comparing sightings. Just don't forget to keep your car lights off until you're out of the area - more sky pollution.

Wade said although most visitors come during the warmer months, cold, clear nights are the best for viewing. Astronomers often spend the entire night at Powell, stoking up on coffee and Double-Stuff Oreos™ - the quickbuzz food of choice. "With full-time jobs we catch naps in parking lots, watching TV, or whenever we can," Wade said.

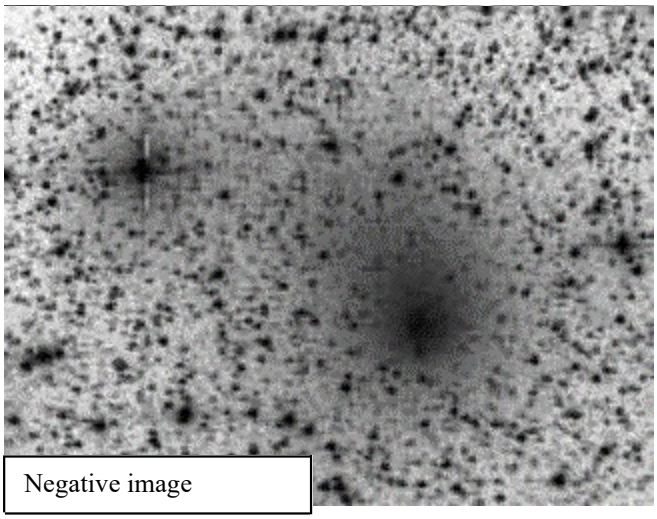
The observatory was dedicated in 1985 with a gift from the Powell family, who own a farm nearby. The Powells, founders of the national Yellow Freight Trucking Company, also created Powell Gardens, which includes a much smaller Elmcrest Observatory near Lone Jack, Missouri.

Society members have been re-jigging the Miami County observatory since it opened. "When our national convention was held in Kansas City in 1994 and folks came out here, they couldn't believe what a great place we have," Wade said. She added several internationally famous astronomers have visited Powell and been impressed by the telescope's capabilities.

When it comes to viewing the universe, the state motto - *Ad Astra Per Aspera* (to the stars through difficulty) - certainly doesn't apply. There are too many "mad scientists" around to provide an experience you cannot get within several states.

The Powell Observatory is in Lewis Young Park near Louisburg in Miami County, Kansas. Drive to the intersection of U.S. 69 and K-68 just west of Louisburg. Go north on Broadway, west on 16th Street, north on Jingo, west on 263rd Street and into the park, and wind back to the east until you reach the observatory.
For current events and directions, call (816) 889-STAR (category 5400). The observatory's reservation line is (913) 438-3825. The phone at the observatory is (913) 837-5705; the e-mail address is askc@sound.net; and the web address is www.sound.net/

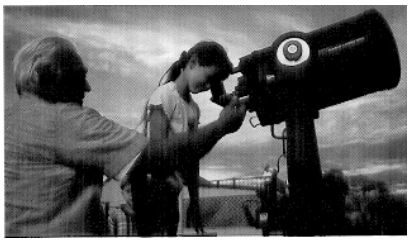
Comet C/1999 H1 Lee



Negative image

Steven Lee discovered this comet at a star party at Mudgee, New South Wales (Australia) on 1999 April 16.5. He described the comet as diffuse, with no tail. The magnitude was estimated as 9. Gordon J. Garradd (Loomberah, Australia) provided the first confirmation on April 16.60. He noted a coma diameter of 3 arcmin and estimated the magnitude of the nuclear condensation as 13.9-14.2.

Picture: Comet C/1999 H1 Lee, 1999 April 16.60UT, 60 sec. Scaled to resemble the view through a large telescope, the coma is approximately 3' in diameter. North is up in this 11' X 8' field. Taken with a 45cm Newtonian and AP-7 CCD (from the TPS Gene Shoemaker NEO Observing Grant) from Loomerbah NSW Australia. Copyright 1999©Gordon Garradd.



KOAS members share their expertise - and views from their telescopes - with guests. Photo by Bill Stephens

Scopeville, KS USA

Text by Bill Sheldon

Darkness and remoteness are the founding principles of Scopeville, Kansas (population of occasionally 150 on the ground, and millions in the sky). Owned by the Kansas Astrophotographers and Observers Society (KOAS) members, Scopeville actually is an 18 - acre meadow about 75 miles southwest of Kansas City, 30 miles southwest of Powell Observatory, and 20 miles east of Garnett.

KOAS has used the site since 1988. While almost all of the group's members are active at Powell, their search for a darker sky created Scopeville.

"The visibility at Powell is about half of what it is here," Larry Goode, KOAS board member, commented. "We can see things from here which are not supposed to be visible in this part of the country."

Last year, KOAS threw its 8th annual Great Plains Star Party. This year's party will include observing contests, lectures on all aspects of astronomy, a telescope-making workshop, and homestyle catered meals. There also will be hiking and bicycling options. Since there is no other star party within 300 miles, visitors from at least six states will be expected, Dan Johnson, KOAS member, said.

The required remoteness of Scopeville means the only facilities are the Black Hole (an outhouse), an eight-bed bunkhouse, and owls and coyotes with which to share the night. Members have constructed storage sheds and patio pods on which they perch their individual telescopes. Tenting and vehicle camping are the sleeping options. It is a virtual field of dreams lying under a sky of dreams for beginner and advanced astronomers alike.

Goode encourages newcomers to check out the variety of equipment from good introductory set-ups costing less than $500 to custom assemblies worth more than $10,000. Along with the equipment comes the broad variety of skills and friendliness of KOAS members willing to instruct and expound. If the clouds block the stars, socializing, game playing, and encouragement replace 'scoping.

The Great Plains Star Party is the only time during the year Scopeville is open to the public. The rest of the year it is used by members and guests who are there informally year-round. Powell Observatory, however, offers a full calendar of public event, lectures, and rental opportunities.

"Scopeville is a family atmosphere and is very safe for kids," Johnson stressed.

The T-shirt of one member summarized what Scopeville and the Star Party are all about: "Carpe Noctum" (Seize the Night).

Jack Horkheimer's "STAR GAZER" Program

This article was published in the 3rd issue/1998 of KANSAS! Magazine. It is reproduced here with permission of the author, Bill Sheldon. This year, the ninth annual Great Plains Star Party will be October 7-10, 1999.

I'm sure most of you have seen Jack Horkheimer show, Star Gazer, at least once. For those young amateur astronomers, those who are new to astronomy, and even a few of you older, more knowledgeable amateurs, it's a great source of information on what's up in the night sky. And you don't need to own a telescope to follow along as it's in the naked eye astronomy category.

What is 'STAR GAZER'?
'STAR GAZER' is the world's first and only do-it-yourself syndicated weekly TV series on naked-eye astronomy (star and planet gazing). Each five minute weekly episode features objects currently visible in the night sky and shows how to find them. It is always current and topical and is aimed at the person who knows little or nothing about astronomy.

Why is 'STAR GAZER' only five minutes long?
'STAR GAZER'S' five minute format was originally designed to be aired nightly at
sign-off, thus giving viewers a chance to go outside immediately afterward to find the stars. However, because of 'STAR GAZER'S' popularity and at viewer request, many PBS stations also air 'STAR GAZER' throughout the day.

Our local PBS station airs STAR GAZER almost every evening (or morning, I should say) at 12:30 a.m. So you may want to tape it if you have young children.

In this month's Prairie Astronomer, I've included a short Bio on Jack and a reprint of two of the upcoming episodes of STAR GAZER. I hope everyone gets a chance to "Keep looking up!."

Visit the STAR GAZER website at:
www.starhustler.com

STAR GAZER

The world's first and only weekly TV series on naked-eye astronomy. A nationally syndicated production of WPBT2 Miami.

Produced in cooperation with Miami Museum of Sciences and Space Transit Planetarium.

Jack Horkheimer: Down to Earth

The Stargazer's Biography

Jack Foley Horkheimer, the host and writer of Star Gazer, is the executive director of the Miami Space Transit Planetarium in South Florida as well as a founding member and a former journal editor of the International Planetarium Society. Mr. Horkheimer is also the recipient of the Astronomical League's Outstanding Achievement Award as well as the Ronald MacDonald House "12 Good Men" Award.

Born in 1938, he grew up in rural Randolph, Wisconsin. He attended undergraduate and graduate school at Purdue University in Indiana. While pursuing a master's degree in playwriting, he wrote an award-winning comedy and social commentary entitled "If The Shoe Fits, Eat It."

Horkheimer arrived in Miami in 1964 and joined the staff of the Miami Museum of Science in 1967. In 1973 he was appointed the executive director of the Miami Space Transit Planetarium. As a science dramatist and popularizer, he pioneered planetarium shows that forge art, astronomy and entertainment into multi-media extravaganzas. Using the planetarium as a canvas, Horkheimer created shows on screens five stories high and six stories wide, such as "Child of the Universe", which won an international multi-media award and is considered the definitive, classic planetarium show. Other Horkheimer shows include "Mother Won't Let Me Ride In A Flying Saucer", "Killer Comet and Things That Go Bump In The Night", "Night of the Red Moon" and "Buck Rogers : Right On". A collector of ancient Egyptian artifacts, Horkheimer organized an exhibition entitled "Mummy Dearest".

In addition to the stars, Horkheimer's varied interests include jazz piano, painting and poetry. He has composed several music scores, his paintings and graphics have been exhibited and his space poetry has been widely published.

Horkheimer received the largest NASA grant ever awarded to a planetarium to produce NASA's first international multi-media planetarium special, "Star Bound", which was shown throughout the United States and around the world in several languages.

STAR GAZER

Episode #99-21
1120th Show
To Be Aired : Monday 5/24/99 through Sunday 5/30/99
"The Gemini Twins and The Goddess of Love and The Smallest Full Moon of the Year."

Horkheimer: Greetings, greetings, fellow star gazers, and in case you think this Sunday night's May 30th full Moon looks smaller than usual, you're absolutely right because the full Moon this Sunday night will be the most distant full Moon of 1999 and will be 31 thousand miles farther away and 15% smaller than the closest full Moon of 1999 which will occur on December 22nd. But now to things even more distant than the most distant full Moon. O.K., we've got our skies set up for this past weekend, Friday and Saturday, May 21st and 22nd just after sunset facing west/northwest where I'm sure many of you had an opportunity to see Venus form an exquisite triangle with the two brightest stars of Gemini, the stars Pollux and Castor.

Now if you go outside every night this week until about 3 hours after sunset you'll see Venus slowly climb higher and higher toward Pollux and Castor so that by Tuesday June 1st Venus will be almost in a straight line with Pollux and Castor and will move only slightly upward of Pollux over the next few nights. So might I suggest a few viewing tips for the next couple of weeks. Simply remember that Venus is as Earth-sized 8 thousand mile wide planet only 75 million miles away from us right now whereas Pollux and Castor are stars, both humongously bigger than Venus and both many light years beyond.

Let's start with Pollux first. Now I've always had a problem keeping Pollux and Castor straight as to which one is the brighter, but very recently I figured out an easy way to remember which is which. You see in mythology Castor was a horseman whereas Pollux was a boxer, a pugilist, so now I simply say to my self that Pollux the pugilist has a lot more punch in brightness than Castor. And if you can just remember that, I don't think you'll ever get the two of them confused. At any rate, Pollux the pugilist, is 11 times the diameter of our own Sun and is about 40 light years away but even though it is bigger and brighter than Castor, Castor takes the celestial whopper prize because Castor is not just one star but is in reality 6 stars all spinning in an intricate cosmic waltz like 3 stellar couples. Now while none of Castor's stars are as big as Pollux, Pair A is twice the diameter of our Sun and pair B is 1 1/2 times our Sun's diameter, leaving pair C to be the only two smaller than our own star, about 3 quarters our Sun's size, and all of then are a whopping 50 light years away.

Just imagine. As you look up any clear night the next couple of weeks 1 to 3 hours after sunset, you will be treated to a grand cosmic illusion from a dazzling brilliant close by 8 thousand mile wide planet to the legendary Gemini twins. Bright Pollux, so huge that 11 of our Suns could be lined up side by side across its middle and its brother Castor, in reality not one star but a complex system of 3 double stars waltzing endlessly in the great beyond. Is it any wonder that I always remind you to Keep Looking Up!

STAR GAZER

Episode #99-22

1121st Show
To Be Aired : Monday 5/31/99 through Sunday 6/6/99
"Awesome Arcturus :

Find It Now Before It's Gone"

Horkheimer: Greetings, greetings, fellow star gazers, and as you regular viewers know, in the past two months I've been asking you to compare the bright orange star Arcturus with bright orange Mars because their colors are so similar and they've been in the same part of the sky together. But although their colors are almost identical at this time, there the similarity ends. Let me show you: O.K., we've got our skies set up for just after it gets dark out. Now as you may recall the easiest way to find Arcturus is to find the Big Dipper first in the north, shoot an arrow through the Dipper's handle and the first star it will land on is bright orange Arcturus. Continuing that line you'll next land on Spica, the brightest star of Virgo and only a couple of degrees away you'll see brilliant orange Mars. And before Mars gets much dimmer, because it is rapidly moving away from Earth now, compare Mars' and Arcturus' colors because they are absolutely wonderful when they are in the same part of the sky.

Now whereas 4 thousand mile wide planet Mars is always changing its place in the heavens relative to the stars, 18 million mile wide Arcturus always seems fixed in the same place relative to the other stars. But it is not! In fact, Edmond Halley, for whom Halley's Comet is named, discovered almost 3 hundred years ago that Arcturus had changed its position from its location in much older star charts which gave Halley the idea that perhaps some stars were not quite as fixed as once thought. And he was right because we have since actually calculated how fast Arcturus is moving and in what direction. In fact, it is moving through space at an incredible 90 miles per second in the direction of Spica and at that unbelievable rate it will change its position relative to the other stars by one Full Moon width every 900 years, and when it comes to stars, that's a lot!

Now while our ancient ancestors saw most of the stars we still see today, Arcturus wasn't always visible. It first became visible to human eyes only half a million years ago and it's been speeding closer to us ever since. In fact, whereas ancient records listed Arcturus as the 6th brightest star in the heavens, in our time it is now the 4th brightest. Indeed we are now seeing Arcturus as bright as any human ever will because right now it is at its closest to our Sun and its family of planets. And on the cosmic time scale it will soon speed away into the void forever and will disappear from sight in a mere one half million years. So catch Arcturus now while you can because if you hang around for another 500 thousand years it will be gone. A brilliant stellar player enjoying only a brief appearance on the cosmic stage of time which should remind us how fascinating it really is to Keep Looking Up!

June Celestial Events

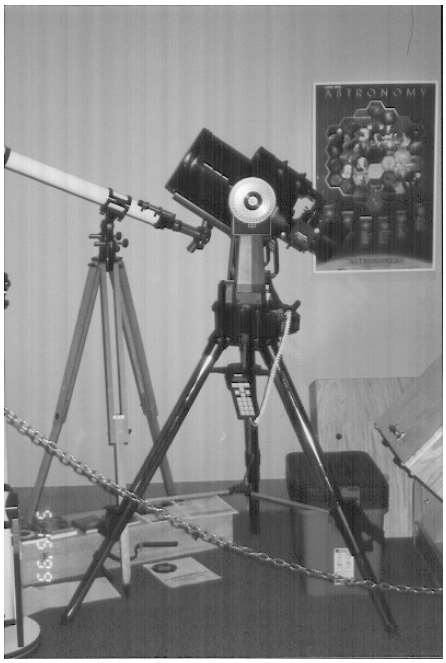
Day	Time (CST)	
3	5 p.m.	The moon passes 0.7 degrees north of Neptune
4	5 p.m.	The moon passes 0.5 degrees north of Uranus
9	7 p.m.	The moon passes 4 degrees south of Jupiter
10	9 p.m.	The moon passes 3 degrees south of Saturn
11	7 a.m.	Venus is at greatest elongation (45 degrees, evening)
15	3 a.m.	The moon passes 4 degrees south of Mercury
16	10 p.m.	The moon passes 2 degrees south of Venus
18	6 a.m.	The moon passes 1.0 degrees north of Regulus
21	3 p.m.	Solstice (Summer begins)
28	6 p.m.	Mercury is at greatest eastern elongation (26 degrees, evening)
30	10 p.m.	The moon passes 0.6 degrees north of Neptune

Top Ten Signs You Might Be An Eyepiece Junkie

Author unknown

⑩. On your Life Insurance policy you name Al Nagler as your sole beneficiary.
⑨. Your kids ride in the trunk...eyepieces in the child car seat.
⑧. Whenever someone wins $5000 on Jeopardy you think.."Wow I could buy 10 Nagler 20mm's with that!"
⑦. Name of first child. "Plossl"
⑥. Whenever Orion Telescope gets an envelope with your name on it they wildly high-five each other and close shop for the day.
⑤. Automatic hair pulling fist fight whenever someone mispronounces Koenig.
④. Spouse and relatives ask what you're ordering and you say "uh...nothin'".
③. You sell your car to finance a new set of Radians.
②. You get Christmas cards from all the leading eyepiece makers.
And the number 1 sign that you might be an eyepiece junkie.....
①.You look through the toilet paper tube before tossing it in the trash.

Astronomy Day '99 Pix's



Sky Events for June

Martin Ratcliffe is Director of Theaters at the Exploration Place in Wichita, Kansas.
Alister Ling is a meteorologist working for Environment Canada in Alberta.
http://www.kalmbach.com/astro/astronomy.html

Once the sun sets, rather late in June, the sky slowly darkens. Springtime constellations such as Cancer, Leo, and Virgo can be found to the west of the central meridian (an imaginary line running north-south, though the zenith, dividing the sky into a western and eastern half). The stunning orange star Arcturus competes for attention with nearby Mars to its south. Farther south and east of Arcturus is the "rival of Mars," Antares. Watch the Red Planet's motions as it will meet its rival in late September.

The Big Dipper begins its long and slow fall to the northwest. Its large ladle shape cartwheels ever so gently around the 2nd-magnitude pole star, Polaris. The Big Dipper's parent constellation, Ursa Major the Great Bear, is also easily spotted. The handle of the dipper marks the tail of the bear, while the bottom of the dipper's cup marks the stomach of the bear. Ursa Major lies overhead in the early evening, but is soon replaced -- first by Boötes the Herdsman and then by Hercules an hour later.

Hercules passes directly overhead shortly after 10 p.m. local time in early June. Look for its splendid globular cluster, M13. Sit back in your lawn chair with a pair of binoculars and the sky dome map. You'll find it quite easily.

By late evening, the drama of the summer sky holds court for observers in dark locations. The Milky Way is rising in the eastern half of the sky. The summer triangle, formed by Deneb in Cygnus, Vega in Lyra, and Altair in Aquila, echoes the oncoming season for country and city dwellers alike.

The most obvious object in the sky, apart from the moon, is Venus. This second planet from the sun is a brilliant "star" visible in the western sky shortly after sunset. It reaches greatest elongation from the sun (45.4° east) on June 11. The planet's distance from Earth is shrinking, which causes a slight increase in its brightness: from magnitude -4.2 to -4.4. Observers can also watch the disk grow an incredible 9" during the month. The planet's disk is at 21" across on June 1 with a slight gibbous phase predicted to be 55-percent illuminated. When does Venus reach exactly 50-percent illumination, or dichotomy? June 10 is the predicted date, but often this moment occurs early. Determining the exact time that the terminator of Venus is perfectly straight is rather difficult. It is best attempted when the planet is situated in a brighter daytime sky rather than the high contrast of dusk.

Following its year-long climb in the evening sky, Venus begins to fall quickly in altitude after the month passes. By mid-August it will be lost in the solar glare. In the meantime, watch Venus glide through the northern section of the Beehive Cluster (M44 in Cancer) on June 12 and 13. A slender crescent moon joins the evening star on June 16, passing 3° below the planet.

During late June Mercury climbs away from the sun for a brief evening appearance. This is one of the best times to view Mercury this year. It also reaches 50-percent illumination this month, on or around June 23. Try comparing the view of Mercury with Venus. Grab a pair of binoculars to find 3rd-magnitude Epsilon (e) Geminorum just one moon's-breadth above Mercury on June 10.

Observers in Asia might see them even closer -- a mere 41" apart at 10h Universal Time. Five days later the crescent moon forms an almost perfect equilateral triangle with the bright star Pollux and magnitude -0.2 Mercury. The planet continues to move away from the sun and appears in a line with Castor and Pollux, the pair of bright stars in Gemini, on June 24. On this night, Mercury stands 10° above the western horizon 45 minutes after sunset. On June 28, it reaches its greatest elongation east (25.5°) of the sun.

More than a month has passed since the Red Planet, Mars, was at opposition. It now appears almost motionless relative to the star Spica. Their contrasting colors and close proximity (less than 5° all month long) draw attention to the constellation Virgo where Mars has taken up residence.

Mars ends its retrograde path against the stars on June 5, when it begins once again to move eastward away from Spica. The closest the Red Planet appears to get to Spica is 1.7° on June 9. Mars shines two magnitudes brighter than its -0.9-magnitude stellar neighbor. The planet lies high in the south-southwestern sky right after sunset. Its obvious orange hue signals its identity. Mars will begin to shrink fast. In early June, the planet is still more than 14" across, but it sheds 2" by June 30.

Pluto is a far tougher challenge at magnitude 13.7. It's moving due north of Zeta (z) Ophiuchi, which lies midway along the base of the kite-shaped constellation Ophiuchus. Pluto reached opposition on May 31 and is best spotted by noticing its slow nightly movement to the west relative to the stars. You'll need an atlas that shows stars down to magnitude 14 and a telescope with a minimum aperture of 8 inches.

Tumbling between the orbits of Mars and Jupiter are the asteroids. Tracking them down is a hobby enjoyed by many. Try finding three of the brighter ones. Minor planet 3 Juno lies less than a degree northwest of Delta (d) Ophiuchi in the lower right hand corner of Ophiuchus. The dim asteroid reached opposition on May 25 and shines at magnitude 10.2. During June, it moves quickly west among the stars of Serpens Caput.

THE PRAIRIE ASTRONOMY CLUB CALENDAR
For June 1999

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
REMAINING 1999 MAHONEY STAR PARTY DATES: **FRIDAY, JUNE 18** **FRIDAY, JULY 16** **FRIDAY, SEPT 10** **FRIDAY, OCT 8**		**1**	**2**	**3**	**4**	**5** **Hyde Observatory open to the public sunset-11 PM**
6 **3RD QUARTER**	**7**	**8**	**9**	**10** **NSP Planning Meeting 7:30 PM**	**11** **UNL Student Observatory open to the public** **9:00 PM - 11:00 PM** **Club Star Party**	**12** **Hyde Observatory open to the public sunset-11 PM**
13 **NEW MOON**	**14** **Flag Day**	**15**	**16**	**17**	**18** **Mahoney Star Party Sunset until ??**	**19** **Hyde Observatory open to the public sunset-11 PM**
20 **1ST QUARTER** **Father's Day**	**21** **Summer Begins**	**22**	**23**	**24**	**25**	**26** **Hyde Observatory open to the public sunset-11 PM**
27	**28** **FULL MOON**	**29** **PAC Meeting 7:30 PM Hyde Observatory**	**30**	No major meteor shower activity this month, but there are many minor showers. See the chart below for more information.		

Radiant	Duration	Maximum
June Aquilids	June 2-July 2	Jun. 16/17
June Bootids	June 27-July 5	Jun. 28/29
Corvids	June 25-July 3	Jun. 27/28
Tau Herculids	May 19-June 19	Jun. 9/10
June Lyrids	June 10-21	Jun. 15/16
Ophiuchids	May 19-July 2	Jun. 20/21
Theta Ophiuchids	May 21-June 16	Jun. 10/11
Sagittariids	June 10-16	Jun. 10/11
Phi Sagittariids	June 1-July 15	Jun. 18/19
Chi Scorpiids	May 6-July 2	May 28-Jun. 5
Omega Scorpiids	May 19-July 11	Jun. 3-6
June Scutids	June 2-July 29	Jun. 27/28

DIRECTIONS TO OLIVE CREEK SRA

From Lincoln, take Hwy 77 south to Hwy 33. Take Hwy 33 west (toward Crete) for 9 miles to SW 114th St. Take SW 114th Street south 4 miles (almost to Kramer). Go east 1 mile on W. Panama Rd, then south 1.5 miles on SW 100th. We set up in area 1 on the west side of the lake.

OFFICERS
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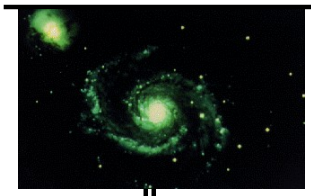

The Prairie Astronomer
c/o The Prairie Astronomy Club, Inc.
P.O. Box 5585
Lincoln, NE 68505-0585

First Class Mail

Next PAC Meeting
May 25, 1999
7:30 PM
Hyde Observatory

NSP 6 Countdown
Less Than 68 days
August 7-14, 1999
Merritt Reservoir