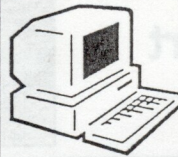


President's Report

by Dave Scherping



If you have access to Internet, see the Prairie Astronomy Club web page:
<http://infoanalytic.com/pac/>
 E-mail us at: pac@infoanalytic.com
 Omaha Astronomical Society web page:
<http://www.top.net/cdcheney>

The Prairie Astronomer

I regret to announce that our Vice-President, Kelly Erlandson, will be moving to San Francisco shortly after this month's PAC meeting. She informs me however, that she still plans on attending NSP. Kelly's enthusiasm has made a great impact on the club and we will miss her greatly. Good luck Kelly in all you do.

Bryan Schaaf, Larry Hancock, and I met at the Atlas site March 10th for the Work bee. With major effort, we managed to get the outhouse set back up. It's a lot heavier than it looks. It still needs to be bolted down and needs some additional repair work. We also did some mowing and weed wacking. The next work bee is scheduled for March 31st. We can use all the help we can get. Don't forget to bring tools, weed walkers, mowers, or whatever else you think might be helpful. Also, we could really use a pickup truck to make a trip to the dump.

The star party at the Atlas Site on the 15th was a great time. We had only 4 telescopes, but we had 12 people, including 4 visitors. We had great weather until around 2:30 am. Comet Hyakutake was unbelievable. It became visible with the naked eye when it was about 10 degrees above the horizon and by the time it was 30 to 40 degrees up, it was incredible. If you haven't seen it, don't delay. It'll only be around until late April.

We still have a lot of work to do in preparing for NSP. If you volunteered to help out in the planning and preparation, don't forget about the NSP meeting on March 28th at Mahoney State Park (see notice above). Everyone is welcome. Those with artistic talent are urged to submit their NSP T-shirt designs to me no later than May 31st.

As for upcoming events, don't forget the Public Star Party at Mahoney State Park on May 24th. Plus there's Astronomy Day on April 27th at Morrill Hall. Dave Knisely is the coordinator. Also, there's still time to make arrangements to attend the Astronomy Workshop in Northeast Kansas, which will be held near Topeka on April 19th-21st. Contact Bryan Schaaf or me for details.

BRIEFS:

I want to compliment everyone who had anything to do with the February newsletter. It is really full of good info and fun to read. Thanks. I have some idea how much time and effort that it takes and just wanted someone to know it was really appreciated.

- Larry Lusk

Continued next column

MARCH/APRIL MEETING NOTICES:

COMET HYAKUTAKE OPEN HOUSE
 MONDAY, MARCH 25th
 at Behlen Observatory

GENERAL MEETING
 TUESDAY, MARCH 26th, 7:30 p.m.
 at Hyde Memorial Observatory

NSP MEETING
 THURSDAY, MARCH 28th, 7:30 p.m.
 at Mahoney State Park Lodge

ATLAS OBSERVING SITE CLEANUP DAY
 SUNDAY, MARCH 31st, 12:00 Noon
 (If you're late, come out anyway.)

STAR PARTY
 FRIDAY, APRIL 12th
 at the Atlas Site
 SATURDAY, APRIL 13th
 (Rain Date)

ASTRONOMY DAY
 SATURDAY, APRIL 27th, 10 a.m.- 4 p.m.
 at Ralph Mueller Planetarium
 (Setup will be at 8:30 AM)

Briefs Continued:

Northeast Kansas Amateur Astronomers' League has a new homepage: <http://world.std.com/~wic/> - Bryan Schaaf

The new web homepage for NSP is: <http://www.4w.com/nsp/> - Mark Dahmke

Astronomy Day will be BIG! - Jack Dunn

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Observing Chairman's Report

by Douglas Bell



March 22, for April Observing:

Next star party: April 12 New Moon: April 17
Lunar object: Mons Rumker Planet: Mercury
Messier monthly: 40 Top 40: A Real Comet!
Deep sky: NGC4676, The Mice Challenge: Tracing the Tail

Tip of the month: Don't wait. Look for the Comet now.

Quote of the month: "If I have seen farther than others, it is because I've looked through a bigger telescope." Newton-1633 & Anonymous-1995

Lunar feature: The Rumker Domes
Inside-out craters! Craters in photos often appear to be turned inside out. These really are. Look just before full moon. It'll give you a chance to keep your scope from rusting.

Planet of the month: Mercury
It's said that Tycho Brahe never saw Mercury. Here's your chance to do him one better. Mercury has its superior conjunction in late March, rising swiftly through late April. By the end of the month it will already have reached greatest eastward elongation and be starting its trip back down. Don't expect to see much, but try it so you can say you did.

Messier Monthly: M40
Nah, Nah, Nah. There is no M40! Messier looked an ordinary double star and saw a comet. Makes you wonder. Check out the area and see what it looks like to you.

Top 40: The Comet
I've waited since Kohoutek for something like this. Go out and look up tonight. The comet is bright because it is so close (9 million miles) and moving fast. Fortunately no one has predicted the end of the world... yet.

Deep Sky: NGC4676, The Mice
Sticking with the "tail" theme this month. You'll have a hard time seeing the tails unless you're borrowing a big scope. Good luck.

Challenge: Trace the tail.
I've seen estimates that the comet's tail will extend 30 to 40 degrees. See how much you can follow. Use those most valuable of all astronomical tools, your car and binoculars. [Editor: Don't forget the eyes as the most valuable astronomical tool of all, Doug.]

Astro trivia: What astronomical feature do Pixis, Carina, Puppis, and Vela have in common?

Last month's answer: Two dimes represent the sizes of the Milky Way Galaxy and Andromeda Galaxy. The distance between them to dime scale would be about two feet.

Questions & Answers

I hope readers send me more questions while I'm on vacation.



Conducted by Dr. M.

Note: Astroman is on vacation this month. His place is graciously filled by the esteemed Dr. Marvel Millennium...

Hey, Astroman! Why does Venus show phases like the moon? Hm... This looks like a good chance to show off the scientific method at its best. Of course, that means proposing a theory, comparing it to competing theories, and selecting the best based on the evidence at hand. So lets see...

The standard theory of Venusian phases is known as the "intersection" or, more simply, the "Standard" theory. This is review for most of us but I'll tell the whole story for your benefit. After years of in-depth research a small band of hardy investigators put forward the most blindingly brilliant piece of astronomical work since Kepler's four laws of astrological life. Now it seems obvious (but it's hard when the government blocks your access, the public laughs at you, and the scientific world ignores you). The solution became clear after years of plotting planetary positions, cometary paths, and military activity in New Mexico. The autopsy films provided the final incontrovertible proof. Of course we now know that the Earth is near an intersection in a space alien interstate. The Moon, Venus, and Mercury are simply traffic signals whose phases correspond roughly to "No Right Turn".

Now compare our enlightened knowledge to primitive, now discredited, guesses. One curious theory stated that Venus and Mercury actually went around the Sun in elliptical paths. Sometimes Venus or Mercury, it was said, would be on the far side of the Sun and would thus show as a full planet (albeit, appear much smaller). Occasionally the elliptical path would bring Venus or Mercury much closer, to the Earth-side of the Sun (between the Earth and the Sun). Since either planet had no light of it's own (don't laugh), it shows only by reflecting the light of the Sun. Needless to say, we Earthlings couldn't see the side that was in shadow. They compared it to a person standing between you and a bright light, you only see the illuminated part. Apparently the Moon was supposed to work the same way.

The beauty of the scientific theory is its ability to correct itself. Compare the two theories. Which one does a better job of explaining the observations? Which one makes verifiable predictions? Which one requires unnecessary and untestable complexity in order to work? The answers are obvious. The old theory collapses quickly in the face of these questions. First of all, it completely fails to account for the Roswell incident, and the hundreds of UFO sightings. Secondly, it is totally useless for any type of astrological fore knowledge. Thirdly, it requires an understanding of light and shadow, orbits, even geometry to make it work. Case closed!

So, now you know.

Questions about astronomy or PAC can be confidentially sent to AstroMan in care of Bryan Schaaf (see address and phone number below).

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc., and is free to all club members. Membership status and expiration date are listed on the mailing label. Membership dues are: Regular Members...\$15/yr.; Family Memberships...\$17/yr.; Address all new memberships, renewals, or questions to THE PRAIRIE ASTRONOMY CLUB, INC., P.O. BOX 80553, LINCOLN, NE 68501. For other club information contact one of the following: John Bruce (Lincoln) 483-0389, Jason Stahl (Lincoln) 423-4912, Bryan Schaaf (Lincoln) 438-4285. All newsletter comments and articles should be sent to: Bryan Schaaf, 1309 W. PLUM, LINCOLN, NE 68522 or E-mail to schaafb@aol.com (in plain text please) by the 15th of each month. Club meetings are held the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, Nebraska.

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MEETING ADJOURNED...



Secretary's Report by Bryan Schaaf

The February 27th PAC meeting was a LONG one. It ended about 9:00 p.m. The program afterwards lasted to about 10:30 p.m.!

One visitor, Norm Robbins, attended the meeting. Norm said he is just beginning in astronomy and decided to come to the meeting to see what the club is all about. He has visited Hyde Memorial Observatory on Saturday nights.

In the "What's Up" portion of the meeting Comet Hyakutake (2B 1996) was talked about most, because it is destined to be quite bright next month. It is expected to peak in brightness to about 0.7 magnitude maybe by the end of March!

On March 28th at roughly 4:00 a.m. the asteroid 62 Erato will occult a star designated PPM 717678. For more information about this occultation contact Dave Scherping (477-2596), or Erik Hubl (488-1698).

Lou Dorland modeled his new "Hale-Bopp Comet T-shirt" and announced they are available for sale from Mike Barker of the Omaha Astronomical Society.

Treasurer John Bruce reported the following:

*Some members that have Sky & Telescope subscriptions at a reduced price through the club haven't got their issues since December 1995. If you are experiencing this problem notify John.

*There's going to be a slight decrease in the price of "CCD Astronomy" magazine subscriptions soon.

*There are still twenty NSP 1995 T-shirts (white Nebraska, North American Nebula design) available for sale. They are priced at \$12.00 each.

*A guy that appeared on the "Today" show and some other evening television show lives in a house built on top of a atlas missile silo and is trying to obtain 'options to buy' numerous sites across the country for real estate. He is representing the 20th Century Castles, a realty company. He sent a one dollar check to John to buy the option and offered \$20,000 over the phone for our Atlas site.

John related numerous details that were discussed with this man over the phone. Possible negotiation alternatives were discussed at the meeting, but it was agreed upon that we as a club must consider what we may or may not want to do in the future in the way of a observing site. Do we want to sell? If so, for how much under what terms? There was no yea or nay decision at the meeting, however the motion was moved and carried to give the board the authority to *consider* selling the site and check for more information, including possibly the services of a lawyer. This issue is entirely tentative at this time with no solid decision for or against selling.

Jason Stahl and Dave Scherping were at the Atlas Site recently to have a look around. Dave explained: The outhouse is tipped over and needs to be stood back up. Somebody filled the storage shed with paint cans and junk, so it needs to be cleaned out. The grass and weeds are tall. Weed whacking is needed. It was decided to have the Site Clean-up Day on March 10th beginning at noon (next clean-up day is March 31st).

T-shirt designs for NSP 1996 are due by May 31st, so if you're artistic,

start designing. If you don't consider yourself artistic, but have an idea, please call Dave Scherping to express your idea.

Jack Dunn's news is that NASA's International Space Station Exhibit (a full-size replica) will be displayed on the UNL campus for a week in April including the weekend of April 27th, which happens to be Astronomy Day. Jack showed a few pictures of the exhibit and even had them loaded on the PAC world wide web site.

Dave Knisely, Astronomy Day chairman, handed around a list for members to sign and write items, telescopes, etc. that they'd be bringing to Ralph Mueller Planetarium on April 27th. The list will make another round at the March 26th PAC meeting.

After the LONG meeting adjourned Doug Bell and his entourage presented the program entitled "Internet and the world wide web: What is it about?". He projected his computer monitor view for everyone to see and accessed the Internet by modem using a newly installed phone line.

Answers to Last Month's LUNAR OBSERVATIONS by Bev Hetzel

First day (24 Earth hours):

1. The color of the sky from the lunar surface is black.
2. The sun takes one to two hours to set.
3. The phase of the Earth is full.
4. The crater rim is dark or light gray in some areas due to the light of full Earth. The shadows cast by a low sun will appear long and jagged.

Third day (48 Earth hours later):

5. The sun has set below the west horizon.
- 6.a. The same side of the moon faces Earth all the time, therefore Earth will appear over the east horizon all the time as seen from Oriental Basin. The moon's libration (like a nodding motion) will cause the Earth to oscillate back and forth and up and down slightly in the sky over a month's time.
- 6.b. The phase of Earth is gibbous (oval shaped).
- 7.a. The lunar sky is black (no blue sky, no pink sunsets).
- 7.b. Stars are visible in the lunar sky.
8. The gibbous phase of Earth illuminates the crater rim somewhat, so the rim is not black. After the helium balloon release:
- 9.a. The balloon would have a tendency to sink (or rise?), but...
- 9.b. with no significant atmosphere to push inward on the balloon, the helium will expand and the balloon will pop.

At sunrise:

10. The night (and day) is about two Earth weeks long.
- 11.a. Earth is near the east horizon.
- 11.b. Earth is always in the east as seen from Oriental Basin and the sun is rising, so the sun is very near and below Earth.
- 11.c. The phase of Earth is either a very thin crescent or is new (like new moon).
12. The illumination on the wall of the crater is light gray, not black, due to the reflected sunlight off Earth clouds.

Your telescope does not have a clock drive.

13. Star trails will take a couple hours to be evident on a photograph.

During a total solar eclipse:

14. The apparent size of the sun is about 1/3 of the apparent size of Earth.
- 15.a. You will not see Earth during the eclipse (the dark side will be toward you).
- 15.b. During totality you would see the corona and zodiacal light. The diamond ring effect and Bailey's beads are phenomena of the nearly equal apparent sizes of the sun and moon. Earth has a apparent size far larger than that of the moon seen from the same distance.
- 15.c. Totality will last from one to two hours, depending how centered the moon is in the umbra (dark shadow) of Earth.
16. During totality the sunlight refracted (bent) by the atmosphere of Earth will illuminate the surface of the moon. If the rays are bent toward the red or orange side of the spectrum, then the crater rim will appear a strange red or orange color.

After the eclipse:

- 17.a. The sun is close beside the Earth in the sky.
- 17.b. The phase of Earth is new.
18. Earthshine (viewed from Earth) is a faint illumination of what otherwise would be the dark part of the moon when it's phase is a thin crescent. Moonshine (viewed from the moon), however wouldn't appear to the unaided eye from the lunar surface because the moon reflects only about one fifth the light that Earth does per unit area and is smaller.
19. The illumination on the crater rim will be fully illuminated by the direct sunlight.
20. The shadow of your lunar home is black. The solid blackness will not provide any depth perception.

The Prairie Astronomy Club

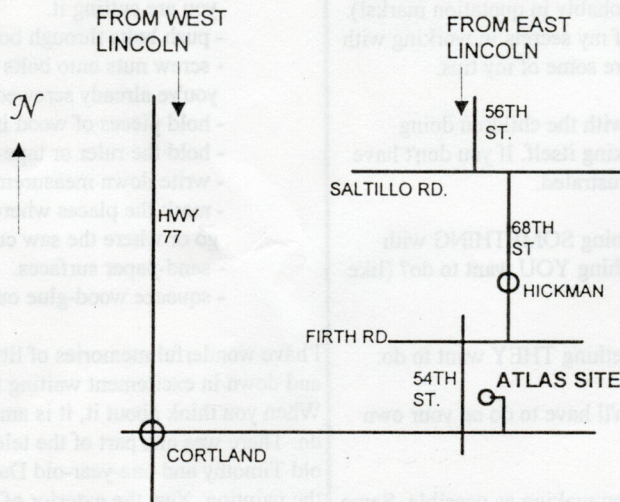
April 1996

S	M	T	W	T	F	S
<p>1</p> <p>Lunar Occultations: Mar 27; 7:18 PM- Lambda Geminorum Mar 29; 9:24 PM- Alpha Cancri OCCULT. TIMES APPROX.</p>	<p>2</p> <p>Scheduled launch of Progress M-31 (Russia)</p>	<p>3</p> <p>Eve: Venus passes close to Pleiades star cluster First photo of Sun, 1845</p>	<p>4</p> <p>FULL MOON Total lunar eclipse, Mid-eclipse at 6:10 PM Moon rises soon afterward</p>	<p>5</p> <p>Comet Hale-Bopp's closest approach to Jupiter (0.77 A.U.)</p>	<p>6</p>	
<p>7</p> <p>Change forward one hour at 2:00 AM EASTER SUNDAY</p>	<p>8</p> <p>Trojan Asteroid 617 Patroclus occults 7.3 mag. star PPM 197286</p>	<p>9</p> <p>First attempt by amateur astronomer to locate NGP for viewing, AstroMan, 1994</p>	<p>10</p> <p>LAST QTR. MOON 6:37 PM Moon at perigee 229,851 miles from Earth, 9:49 PM</p>	<p>11</p> <p>Comet Hyakutake (1996E2) near Venus (0.23 AU) Apollo 13 launched, 1970</p>	<p>12</p> <p>STAR PARTY AT ATLAS SITE Yuri Gagarin first man in space, Vostok 1, 1961</p>	<p>13</p> <p>STAR PARTY AT ATLAS SITE (RAIN DATE)</p>
<p>14</p> <p>Scheduled launch of Priroda Proton (Russia)</p>	<p>15</p> <p>Venus 10 deg. north of Aldebaran 5 PM Galileo, Probe data playback complete</p>	<p>16</p> <p>Saturn rises before the sun 4 deg. south of crescent Moon Apollo 16 launch, 1972</p>	<p>17</p> <p>NEW MOON 5:49 PM Apollo 13 splashdown, 1970</p>	<p>18</p> <p>Morning: Asteroid Laetitia occults 9th magnitude star SAO 145292 in Aquarius</p>	<p>19</p> <p>Moon 8 deg. left of Mercury 30 minutes after sunset</p>	<p>20</p> <p>Moon in Hyades star cluster Mercury 3rd Quarter phase and waning over next two weeks</p>
<p>21</p> <p>Moon passes 9 deg. south of Venus, 9 AM Apollo 16 lands on Moon, 1972 Earth Day</p>	<p>22</p> <p>Morning: Lyrid meteor shower peaks</p>	<p>23</p> <p>Mercury at greatest eastern elong., 20 deg. 0.2 magnitude Ariane 4 launch</p>	<p>24</p> <p>Moon at apogee, 251,266 miles from Earth, 5:25 PM</p>	<p>25</p> <p>FIRST QTR. MOON 3:40 PM Hubble Space Telescope launched, 1990</p>	<p>26</p>	<p>27</p> <p>ASTRONOMY DAY AT THE PLANETARIUM, (8:30 AM SETUP) Apollo 16 splashdown, 1972</p>
<p>28</p>	<p>29</p> <p>First space station, Salyut 1 launched, 1971</p>	<p>30</p> <p>PAC MEETING 7:30 PM AT HYDE MEMORIAL OBSERVATORY X-ray AstroSat launch</p>	<p>Mercury is easily visible this month, April 15th-27th, low in the west-north-west about 25 degrees below Venus and a little to the right, 30-45 minutes after sunset. Mercury's phase shrinks from gibbous to crescent this month.</p>	<p>Jupiter rises at about 1 AM this month and is near the meridian at sunrise. Venus grows more brilliant, slims from 3rd quarter phase to crescent phase. Saturn is low in the east-south-east before sunrise during the second half of this month.</p>		

DIRECTIONS TO PAC OBSERVING SITES

DIRECTIONS TO ATLAS SITE: From west Lincoln, take Hwy 77 south 16 miles to Cortland. Turn east on the road just south of the water tower. Go east 3.6 miles to the entrance road just east of 54th St.

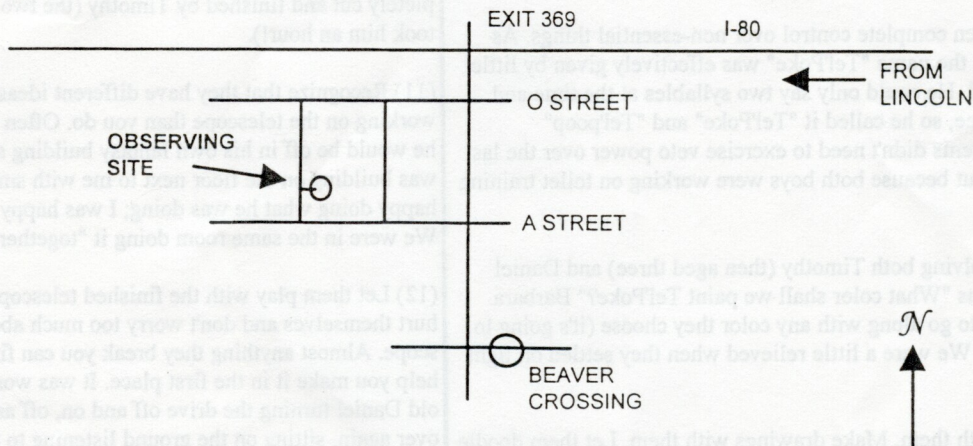
From East Lincoln, go south on 56th St until it ends at Saltillo Rd. Turn Left and go east 1 mile to 68th St. Turn Right and head south on 68th St, through Hickman, until the road ends. Turn right and go west 1 mi. to 54th St. Go south on 54th St to the paved road. Turn left and go about 1/2 mile to the entrance road.



DIRECTIONS TO BEAVER CROSSING SITE:

From Lincoln, head west on I-80. Get off on Exit 369 and head south. Go south 1.5 miles to A St. Turn right and head east 2 miles. Turn north (2nd road to the right. Go 1/4 mile. The site is on the right hand side of the road.)

An alternate route is to take O Street, rather than A Street and come in from the north as shown.



DIRECTIONS TO BEHLEN OBSERVATORY: Behlen Observatory is located at the University of Nebraska Agricultural R&D Center, a few miles southeast of Mead, NE and is about 35 miles from either Omaha or Lincoln.

From Lincoln: Take Hwy. 77 north to about 1/2 mile past Swedeburg where you turn east on Hwy. 63. Follow Hwy. 63 east for about 7 miles until you reach 10th Street (Spur 78F) where there is a sign to Mead. Turn left and go 1 mile north to H Avenue. Turn right on H and go 2 miles to 8th Street. Turn left on 8th Street and go north 0.7 miles. The observatory will be on the left.

SMALL CHILDREN AND TELESCOPE MAKING

by Martin Gaskell

Since I gave my two programs on the making of "Tel'Poke" (April 1994) and measuring double stars with it (April 1995), a number of people have asked me whether my two young boys, Timothy and Daniel, "really" helped make Tel'Poke. The answer is "Yes, they did" (although the word "helped" is the one that should probably in quotation marks!). A number of fathers have asked for some of my secrets in working with small children in telescope making. Here are some of my tips.

(1) The priority has to be in spending time with the children doing some-thing rather than in the telescope making itself. If you don't have the priorities that way round you will get frustrated.

(2) since as a parent you should be doing doing SOMETHING with your little children, how about doing something YOU want to do? (like make a telescope).

(3) Make sure, however, that it is also something THEY want to do.

(4) Things the children don't want to do you'll have to do on your own after they've gone to bed!

(5) Involve your children in as much decision making as possible. Some things you will want to do a certain way. For example, you want to build an equatorial rather than an alt-azimuth mounting. Don't present that as a choice then. Here is an example of the sorts of choices you can offer:

"Shall we work on the mirror cell or the equatorial mount this evening?"
"Let's work on the mirror cell, Daddy"
"OK"

(6) Give the children complete control over non-essential things. As many of you know, the name "Tel'Poke" was effectively given by little one year old Daniel. He could only say two syllables at the time and "telescope" has three, so he called it "Tel'Poke" and "Tel'poop" (fortunately his parents didn't need to exercise veto power over the last name - it came about because both boys were working on toilet training at the time!)

A big decision involving both Timothy (then aged three) and Daniel (then aged one!) was "What color shall we paint Tel'Poke?" Barbara and I were willing to go along with any color they choose (it's going to be dark, after all!). We were a little relieved when they settled on light blue!

(7) Do planning with them. Make drawings with them. Let them doodle all over the edge of your blueprints. Look at telescope catalogs together and discuss different telescope designs. Share your ideas and dreams.

(8) Go shopping in the hardware store with them for wood and nuts and bolts. Let them carry things home and tell Mommy all about them. Open up the box that comes mail order from Willman-Bell when they are around.

(9) While working away, recognize that while the children are "helping" things will go a LOT slower. I could probably have build most of "Tel'Poke" in a few weekends on my own. Instead it took a year with my little helpers' help. I would often tell the children that I would do things after they had gone to bed. In the morning they would see a little progress. I never explained that 90% of the progress happened when they weren't there!

(10) Find appropriate things they can do. Here are some examples suitable for toddlers:

- fetch tools for you.
- steady the end of a long piece of wood while you are cutting it.
- push bolts through bolt holes.
- screw nuts onto bolts (and unscrew nuts you've already screwed!)
- hold pieces of wood in place for you.
- hold the ruler or tape-measure for you.
- write down measurements for you.
- mark the places where screws are going to go or where the saw cuts are going to be made.
- sand-paper surfaces.
- squeeze wood-glue out of the bottle.

I have wonderful memories of little three-year-old Daniel jumping up and down in excitement waiting for any little jobs he could do to help! When you think about it, it is amazing what little hands and minds can do. There was one part of the telescope making process that three-year-old Timothy and one-year-old Daniel did almost entirely by themselves: the painting. Yes, the exterior of Tel'Poke was almost entirely painted by them. We took off most of their clothes, and under close parental supervision, we let them go to it. About 90% of the paint ended up on Tel'Poke! As for the other 10%, well, thank goodness that modern latex paints are water soluble! The painting was a great application of those skills taught in pre-school.

Now that Timothy is five he can do more sophisticated things. He screws in screws himself (Daddy has to start them to avoid frustration). The piece of wood the declination tangent arm pushes against was completely cut and finished by Timothy (the two saw cuts probably only took him an hour!).

(11) Recognize that they have different ideas of what it means to be working on the telescope than you do. Often when Timothy was three he would be off in his own fantasy building a parallel version of what I was building on the floor next to me with small scraps of wood. He was happy doing what he was doing; I was happy doing what I was doing. We were in the same room doing it "together".

(12) Let them play with the finished telescope. Make sure they can't hurt themselves and don't worry too much about them breaking the telescope. Almost anything they break you can fix, and after all, they did help you make it in the first place. It was wonderful to watch two-year-old Daniel turning the drive off and on, off and on, off and on, over and over again, sitting on the ground listening to the whir of the motor. Yes, he might wear out the switch or run down the batteries, but you can buy a new switch and re-charge the batteries.

Tel'Poke has been a wonderful part of the Gaskell family life. There's some family history in it too. The saw we used to cut out the big RA drive sector was the same saw that Barbara's father gave her in a tool set when she was five or six years old. Now we have given the boys THEIR own tools and little work bench.

Continued on last page

Comet Hyakutake should become the brightest comet since Comet West in 1976. Unless it fades very unexpectedly, Comet Hyakutake should be visible to the naked eye every clear, dark night from late March through late April. It might turn out to be "the Great Comet of 1996."

The first thing to do is find a dark viewing site. To see the comet well you'll need to get away from glary outdoor lights and give your eyes time to adapt to the dark.

March 21. On Thursday night, March 21st, go out around 11 p.m. local time. Face east, look high, and spot the brightest star in this part of the sky. The star is Arcturus; you can't miss it.

Hold your fist out at arm's length in front of you. Sighting past it, look one fist-width below Arcturus. That's the location of the comet's head. The tail will extend to the right. Bring binoculars for a better view!

March 22. The comet is now about a fist-width to Arcturus's lower left. It may be noticeably larger than last night.

March 23. As early as 10 or even 9 p.m. local time you can look for the comet about two fist widths to the left of Arcturus. The comet is about equidistant from Arcturus and the end star in the handle of the Big Dipper, which is higher in the northeast.

The view should get somewhat better later in the evening, when the comet, Arcturus, and the Big Dipper all move higher into a less light-polluted part of the sky.

March 24. Tonight the comet is closest to Earth. After twilight has completely faded out, find the Big Dipper standing on its handle part way up the northeastern sky. The comet is less than a fist-width to the left or lower left of the star at the end of the Dipper's handle.

By midnight the Big Dipper and comet are nearly overhead when you face northeast, with the comet appearing below the end segment of the Dipper's handle. The waxing crescent Moon sets around then too.

Despite being near and big around this date, the comet may prove hard to see. Its light will be spread out over a relatively wide area, making it especially vulnerable to light pollution. In a dark sky, the comet's head may be nearly as big as your little fingernail held at arm's length. Through light pollution, you may be able to see only the brightest inner part of the head.

March 25. The comet is visible all night in the north. After dark, examine the sky about two fist-widths left of the Big Dipper's handle, near the bowl of the Little Dipper.

The view will improve late in the evening as the Moon, nearly first quarter, gets low near setting. By midnight the Big Dipper is nearly overhead in the north, and the comet appears about two fist-widths directly below its center.

March 26. Tonight the comet is near the North Star. Moonlight will interfere with the view to some extent until the first-quarter Moon sets around 1 or 2 a.m. local time.

March 27. Early evening is when Comet Hyakutake is highest from this date on, but moonlight is an increasing problem from now until April 5th.

Tonight, if you go out soon after the end of twilight, look about one fist-

width (or maybe slightly more) to the left of Polaris in the north. The Moon sets around 2 a.m. tonight, leaving a darker sky. If you look at that time or later, the comet is about 1.5 fist-widths below Polaris.

March 28-29. After twilight ends, find the point halfway between Capella and Polaris. Look for the comet a little below that point. It is fading now as it flies Sunward away from Earth.

March 30-31. Locate Capella and Polaris soon after nightfall. Find the point a third of the way from Capella to Polaris, and look about one fist-width at arm's length below that point.

April 1-4. Although the comet is shrinking and fading, its head and general outline may start becoming more sharply defined, a process that should continue through late April. Currently the Sun is below the west-northwestern horizon at nightfall. This means the tail will extend upward, leaning a little to the right, for the rest of the month. In early April, look about two fist-widths to the lower right of Capella and almost three fist-widths to the right or upper right of Venus. The modestly bright star near the comet these nights is Alpha Persei, also known as Mirfak.

April 5-12. The sky is now completely free of moonlight. You'll find the comet two fist-widths to the right of Venus, possibly just a little lower depending on the date and your location. The moderately bright (2nd-magnitude) star near the comet's head from April 7th to 11th is Algol, or Beta Persei. During this period the comet should be at its minimum brightness for April.

April 13-28. Scan low in the northwest every clear evening right around the end of twilight. In mid-April the comet is to the lower right of brilliant Venus by about two fist-widths, and in late April by three fist-widths.

During this time the comet should brighten again, and the tail may lengthen even as the head becomes more compact. The comet's head will get a little lower to the horizon each day. By late April it will be so low that you'll need a good, open view of the northwestern horizon. You'll also have to look a little before twilight fades away completely. Bring the binoculars!

April 29 and later. The comet swings closest to the Sun (21 million miles) on May 1st, but by then it has become hidden in the Sun's glare and will never come back into view for mid-northern observers.

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We are having a Comet Hyakutake open house at Behlen Observatory on Monday, March 25th. We would VERY MUCH appreciate PAC volunteer help outside at our public night since most of the action will probably be outside. In the past, having the PAC volunteers with their telescopes out at Behlen Observatory for the public nights has made public nights more fun for the observatory staff! We like looking through the PAC telescopes.

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Continued from page 5

Now that we have two boys able to help, things get a little bit more complicated. One night Timothy helped me finish WFPC (that's pronounced "Wiff-pick" for you non-Hubble types), the "wide-field and planetary camera". We brought it upstairs to show to Barbara. Little Daniel, whose number one rule in life is not to get left out, wailed, "I want a WFPC too!". Hmm, did he mean "WFPC II"? - we could have a Tel'Poke refurbishment mission!

I have found that the best ages for working with children on telescopes are ages 2 and 3. At that age children are so willing to help. Now that Timothy is older (almost six now) he is more interested in doing his own things, but we still dream about Tel'Poke. "Let's keep working on Tel'Poke for ever and ever!" he said the other night. "Yes, we could do that" I replied, knowing that the hobby of telescope making is indeed limitless.

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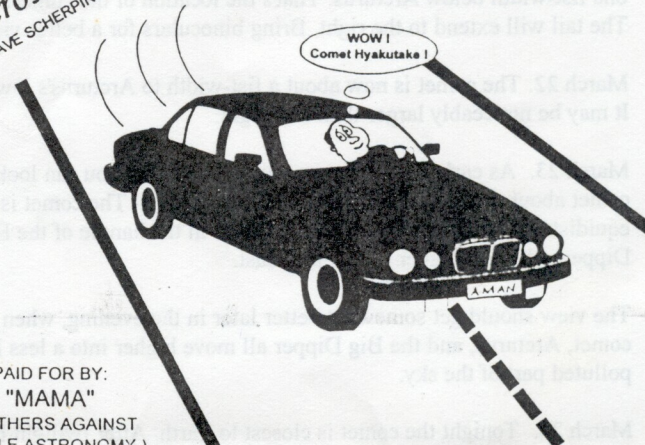
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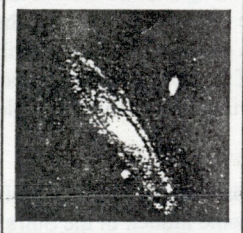
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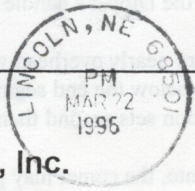


WOW!
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