



THE *Prairie* *Astronomer*

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Santa Claus and Tooth Fairy Pave Way For Copernicus....

(FROM COMPUSERVE'S NAKED EYE ASTRONOMY SECTION)

There are almost as many myths about famous people as there are myths about the constellations. Albert Einstein flunked math in high school. Isaac Newton discovered gravity when an apple fell on his head. Galileo was persecuted for his scientific beliefs by the Catholic Church. And Nicholas Copernicus discovered the earth rotated on an axis while revolving around the sun. All of these statements are myths. They are all wrong, especially the last one.

When Copernicus was born, on February 19, 1473, the suggestion that the earth rotated while revolving around the sun was already 1800 years old. It had been proposed by the Greek natural philosopher, Aristarchus of Samos, in the third century B.C. And Copernicus certainly knew this.

The difference between Aristarchus and Copernicus lies in Copernicus' success in getting people to pay attention to the idea of a rotating earth revolving around the sun. As if to prove that "the pen is mightier than the sword," he performed his coup with a book that has been described as "an all time worst seller."

ON THE REVOLUTIONS OF THE HEAVENLY SPHERES provided the catalyst for the serious questioning of old theories and sources of knowledge. The book demonstrated the conceptual superiority of the sun-centered or heliocentric system over the earth-centered or geocentric system, but in no way did it offer "proof" that Copernicus was correct in championing

the rotational and revolutionary movements of the earth.

But established traditions of thinking die slowly, especially when the radical alternative is indefensible, and even contrary to common sense. Even today, with the positions switched, we still hang on to the geocentric past. We talk about sunrise and sunset, moonrise and moonset, not horizon unveilings and horizon uncoverings.

It is intellectually and emotionally easier to think of the sun, moon and stars moving from east to west than to imagine ourself standing on an 8,000 mile diameter earth rotating 800 miles per hour from west to east. This is not what common sense tells us is happening.

We have to be taught at a very young age to believe the earth has both a motion of rotation and revolution. We have to be taught the sun, moon and stars are not moving. Childhood experiences with Santa Claus and the Tooth Fairy probably help to prepare the way for our acceptance of this idea. Copernicus knew the motions of the earth would be difficult to sell, especially since he had no real proof of his hypothesis.

Another part of the Copernican myth says he saw the first published version of ON THE REVOLUTIONS OF THE HEAVENLY SPHERES on the day he died. This seemingly final triumph would provide a dramatic and inspirational ending to a movie about the life of a great thinker. It would seem to be

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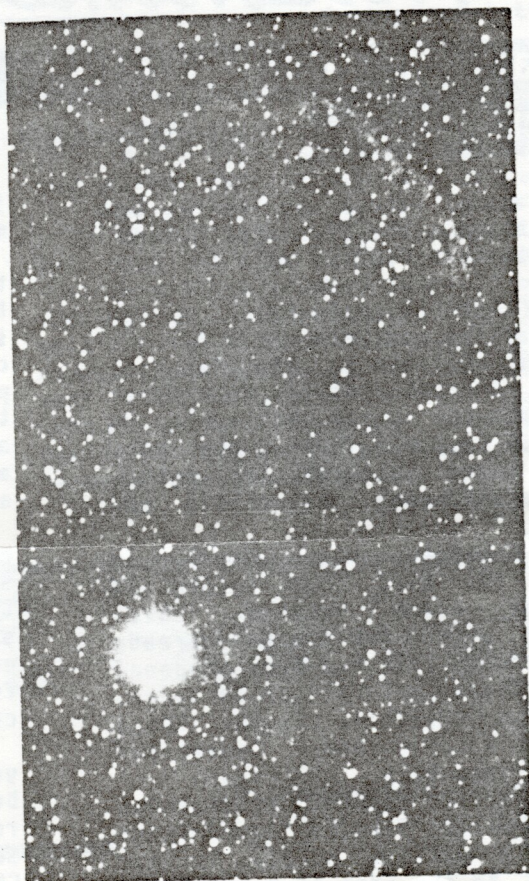
the just reward for one who endured the ridicule and persecution bestowed upon those who attempt to overthrow long standing tradition in the name of a scientific "truth." Great myth, but poor history.

Copernicus actually spent many years trying to avoid the publication of his book. He successfully avoided the controversy that would most certainly surround such an indefensible alternative to established tradition by only allowing the book to be published near the end of his life. He bequeathed the aftermath to Galileo, another myth-man of science.

You can gain a better appreciation of how fast the earth is rotating by observing the sky just twice in one evening. Look for a backwards question mark and triangle rising above the eastern horizon around 9:00 in the evening. This is the constellation Leo the Lion. Note the location of the constellation with respect to a building or tree.

Wait three hours, return to the same place and look for Leo the Lion again. The sky will appear to have moved because you have been moved 2,400 miles from your initial position by the earth's rotation. The sky you saw earlier, with Leo rising above the eastern horizon will now be seen in California. It was moved to California by the earth's rotating faster than you can fly there by commercial airline.

Incidentally, the bright star at the bottom of the backwards question mark was named Regulus, meaning "Little King," by Nicholas Copernicus. This is true. I think.



The Prairie Astronomer is published monthly by The Prairie Astronomy Club Inc., and is free to all club members. Membership expiration date is listed on the mailing label. Membership dues are: Junior Members and Newsletter Only Subscribers... \$8.00/yr. Regular Members... \$22.00/yr. Family Membership... \$25.00/yr. Address all Membership 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 officers: Andy Corkill (Pres.) 488-1096, Norma Coufal (V. Pres.) 483-5685, John Lortz (Sec.) 390-9821 (Omaha), Lea Thomas (Treas.) 483-5639, Dan Neville (Prog. Ch.) 476-7772. All articles and comments should be sent to newsletter editor JOHN LORTZ 9255 CADDY AVE. #14, OMAHA, NE. 68134 no later than 6 days before monthly club meetings.

PRESIDENT'S MESSAGE....

It's summer time and that means warm summer nights, perfect for star-gazing. Then why am I never out with my telescope? I seem to have hit a telescopic slump! I've found and logged the Messier list, which is a list of 109 deep sky objects, which are easily visible in a small telescope. After which I was very familiar with the night sky and constellations. So not long after that I started working on finding all the objects on the Herschel list which is a list of about 400 deep sky objects. I have a 6 inch reflecting telescope, and not all of these objects are visible with it... but many are.

I spent many a frustrating night on the Herschel list until I finally gave it up and just tried to find all of the deep sky objects in specific constellations (which may have been more difficult, I'm still not sure!).

Anyway, the old RV-6 Criterion Dynascope (a 6 inch reflector) has been sitting in the 'closet' for the past 7 or 8 months! It has been out once or twice, but then it was cloudy or I was letting someone borrow it.

I've often thought that a bigger telescope would solve my problem. If I had an 8 or 10 inch, I wouldn't get as frustrated because now some of the fainter objects would be easier to see. A new telescope may come into being, but not for awhile.

In the meantime, after all this talk I've decided to sell my 6 inch reflector. I've been told by some never to sell my RV-6 since they no longer manufacture that particular scope. Am I making a mistake?

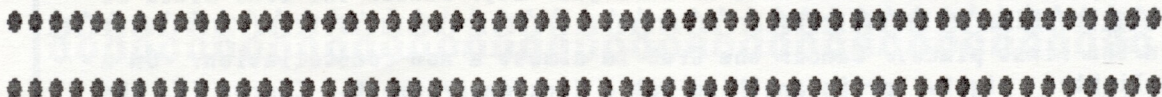
Well, here's the deal:

- 1 - RV-6 6 inch reflector with enhanced coatings on the secondary and primary mirrors.
- 1 - 32mm Plossl eyepiece (Jaegers).
- 1 - 18mm wide angle Erfle (Jaegers).
- 1 - 18mm symmetrical (Brolan).
- 1 - 9mm symmetrical (Criterion).
- 1 - eyepiece box.

ALL FOR JUST... \$300.00

See you at the meeting, or call me and be the first one to snatch up this deal!

ANDY CORKILL



PAC ANNUAL STAR PARTY SET:

DON'T FORGET THAT AUGUST 9TH IS THE DATE FOR THE ANNUAL CLUB PICNIC. As usual the picnic will be held at Wagontrain Lake south of Lincoln and will start with a dinner at 6pm. Beverages (pop) will be provided by the club, and the dinner will be pot luck (don't forget to bring along your own plates and silverware).

In the past, the annual picnic has been a great place for newer members to meet and socialize with some of the older members, plus, if you don't own a telescope it's a wonderful chance to learn about scopes and do some great viewing guided by those members who do have telescopes. So get those 1 day park passes and lets have a good turn out at this years picnic!

AT THE NEXT MEETING....

There will be a wealth of new information about the proposed club observing site (the old Atlas missile silo near Firth, NE) at the next meeting, and we may get some info on the almost complete Feasibility Study being done. Plus, the secretary of the club (John Lortz, remember?) will finally be there to accept all the verbal abuse which he so richly deserves! Lortz will also have the new member packets done and on display, so don't miss the chance to throw your licks... be at the meeting!

CANCER the Crab is in big trouble!

Zero based budgeting was all the rage a decade ago. But now we are into comparable-worth. We are finally achieving the ability to compare apples and oranges.

Imagine what would happen to naked eye astronomy if these ideas spread beyond the realm of business and government. Imagine for instance, a high powered government committee meeting to apply the principles of zero based budgeting and comparable worth to the zodiac.

The zodiac consists of the twelve constellations through which the sun, moon and planets go about their orbital business. There have been twelve zodiac constellations since the ancient Greeks assumed control of Babylonian astronomy some 2,000 years ago.

But tradition means absolutely zip to the concept of zero based budgeting and comparative-worth. You have to earn your way. Cancer the Crab would be in big trouble.

In the first place, Cancer the Crab is almost a non-constellation. On a moonlighted night, or in anything but a dark environment, Cancer is the empty space between the stars of Gemini the Twins and the stars of Leo the

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Lion. It does nothing to enhance the aesthetics of the night sky.

You can't even justify the existence of Cancer in terms of some practicality. It does not contain any of the stars used by navigators to plot their position on earth. Even meteor showers avoid cancer.

In the past Cancer did provide a service to humanity. A hazy patch of light, the Praesepe, could be seen on dark moonless nights near the center of the inverted "Y" of faint stars that form the constellation. This cluster, which is also known as the Beehive, was used by the ancient Greeks as a weather indicator.

If the Praesepe could not be seen on an apparently clear night, they knew that there was a good possibility of a change in the weather. The cluster's obscuration was the result of high-altitude cirrus clouds. A weather front was arriving. Unfortunately, the Praesepe can't compete today with cable TV's Weather Channel.

Cancer once occupied a strategic position along the ecliptic. The sun was in Cancer at the time of the summer solstice. The Tropic of Cancer, the northern latitude where the sun reaches the zenith on the day of the summer solstice, received its name from the constellation occupied by the sun on this day. But this was "once upon a time."

Due to the precessional motion of the earth, the summer solstice constellation has changed. The sun is now in the constellation Gemini the Twins on the day of the summer solstice.

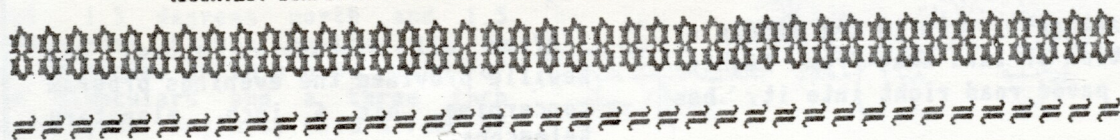
Even the astrologers have eroded the prestige of Cancer the Crab. People born between June 21 and July 22 were given Cancer as their sun sign until a few years ago. Some astrologers have now started to refer to these people as "moon children." It seems no one wants to be known as a cancer anymore.

The traditional mythology associated with a constellation is another measure of a constellation's value. Cancer the Crab gets another zero. In its most exciting version, Cancer was the crab sent to hinder Hercules during his battle with Hydra the nine-headed water snake. Hercules trampled the crab under his foot without giving it a second thought.

No matter how you look at it, Cancer will be a loser in any attempt to apply the principles of zero based budgeting and comparable-worth to the constellations of the zodiac.

I would suggest you exert every effort possible to see the inverted "Y" of Cancer the Crab before government regulations remove it forever from the zodiac.

(COURTESY COMPUERVE'S NAKED EYE ASTRONOMY SECTION)



AT THE LAST MEETING....

(These notes were provided by Ron Veys in his very own hand writing... the Secretary/Editor is grateful to Mr. Veys for taking the meeting minutes for him, but takes no responsibility for misinterpreting certain indecipherable words found in the meeting notes., Ed.)

The meeting was called to order at PRECISELY 7:30pm, whereupon the Annual picnic at Wagontrain was discussed and set up for August 9th starting at 6pm. It was also reported that John Lortz was preparing the new member packets and that they would be ready by the next meeting.

Earl Moser gave a report on the Mid-States Convention held at Columbia, MO, which approx. 98 people attended. Earl mentioned seeing a slide of Halley's Comet taken by the Russian spacecraft which looked like "a bread loaf chewed by mice". Next year the convention will be in Kansas City.

Curt Rolle sent the club a letter which Andy read to the members.

Lee Thomas then took over the meeting and talked about the proposed observing site. Here were some of the questions discussed...

* an inactive Atlas missile site owned by the Firth Co-Op, 2 miles southwest of Firth and approx. 25 miles south of Lincoln.

* advantages... is in the middle of a section of land away from lights, has a paved road right into it, has

lots of concrete pads and some very dark skies. However the site has been vandalized and there is a shaft which could be somewhat dangerous.

* commitments... need legal advice.

* need to do... determine the extent of the vandalism and see what security measures would have to be taken, determine what liability insurance we would need, secure the shaft entrance, determine the condition of the road and the easement agreement for the road.

* info from attorney... extent of club liability, would we be able to get liability insurance.

* taxes... about \$207/yr, could we get out of taxes somehow.

Following the discussion two motions were passed by a quorum of the club members (19/48)...

MOTION (by Dave Knisely): the club will proceed and fill a feasibility study (up to \$500 for legal fees) by August 26th. (Second by Jack Dunn, vote was unanimous in favor of).

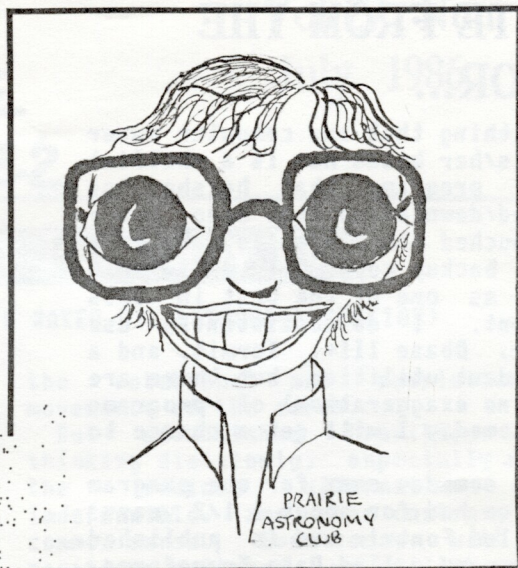
MOTION (by Russ Genzmer): the Board of Directors can examine the results of the study and determine whether to make an offer for a maximum of 5 acres for a maximum of \$200/acre. (Second by Dave Knisely, vote was unanimous in favor of).

After all discussion ended, Dan Neville provided the evenings program concerning his 6 inch planetary telescope.

This month features the annual club picnic and star party at Wagontrain lake on August 9th. On that evening, in addition to some good food and good company, you will be treated to two astronomical events: the passing of Venus less than two degrees south of the crescent moon, and the Persied meteor shower later that evening. Even if the sky isn't clear, we will still have the picnic so be sure to get your park permit for your car. We will be at our usual place on the north-east side of the lake near the swimming area.

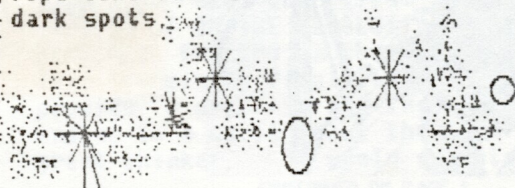
I was at a certain former Atlas missile base a while ago and noticed how bright the Milky Way was in Sagittarius. However, it was the dark nebulae that really caught my eye. If you use a pair of 7x35 binoculars on the main Sagittarius star cloud south of M8, you will see numerous dark lanes and clouds that almost defy description. A six inch rich field telescope and very low power will also show some of the dark lanes scattered among the thousands of stars in the area. If you look about 2.7 degrees north and slightly west of Gamma, you will find the somewhat sparse open cluster NGC 6520. But it isn't the cluster that will catch your eye, it will be the dark nebula Barnard 86. With an eight or ten inch, the nebula will appear as an inky black elliptical spot on a tremendously rich field of background stars. There are also a number of small globular clusters in the area but few are really spectacular. Up in the small Sagittarius star cloud, sometimes known as M24, are a number of less spectacular dark nebulae including Barnard 92 on the north side of the cloud.

One of the best globular clusters in the summer sky is M22, located about 1.5 degrees north and 1.5 degrees east Lambda Sagittarii. It can be picked up in a good pair of 7x30 binoculars and a three inch should just begin to show a few of



by
David Knisley

its stars. In an eight inch at about 120x, the cluster is a glorious sight being somewhat easier to resolve than M13. For all you nebula lovers, M17 fills the bill quite nicely. Located five degrees north and two east of Mu, the nebula looks a bit like a faint fuzzy anvil when viewed in a 2.4 inch refractor, but large instruments show a wealth of dark detail. One often overlooked nebula is M16, located about three degrees north and a bit west of M17. It is a combination star cluster and gaseous nebula, but the nebula appears only as a faint haze in six or eight inch reflectors. This is one object that is really helped by the use of a Lumicon UHC filter. The nebula suddenly jumps out at you and shows a rope-like dark lane and several other dark spots.



A NOTE FROM THE EDITOR...

One thing that any computer owner worth his/her bytes has is a shelf(s) full of programs that he/she has purchased/downloaded that have never been touched other than to make the initial backup copy. I definitely qualify as one of the best in this department. I do consistently use Wordstar, Dbase III+, Kermit, and a few resident utilities, but there are dozens (no exaggeration) of programs that "someday I will get a chance to look at".

Well, someday came for one program that I've had for about 1 1/2 years. It's called Fontrix and is published by a company called Data Transforms, Inc. In the past I have used a combination of Wordstar, Lettrix (a printer utility program), The Newsroom (a small graphics program), and Print Master (another graphics

program) plus lots of cutting, gluing, and manual typesetting to produce the newsletter you get in the mail every month. But this month I was bored with the old way, so I decided to try Fontrix.

Fontrix basically lets me do complete layouts of the newsletter right on my computer screen. I create a page size of 8 1/2 by 14 inches, import the articles written using Wordstar, set the typeface, draw a few lines here and there... and presto, a newsletter! Actually it took me about 3 days to learn the program and input this newsletter, but it was fun and next month shouldn't take quite as long. I will admit that the letter doesn't look quite as good as when I use lots of manual typesetting... but it's lots easier and much more fun this way. I hope you'll bear with me (until I decide to try another one of those 'someday' programs!

John Lortz

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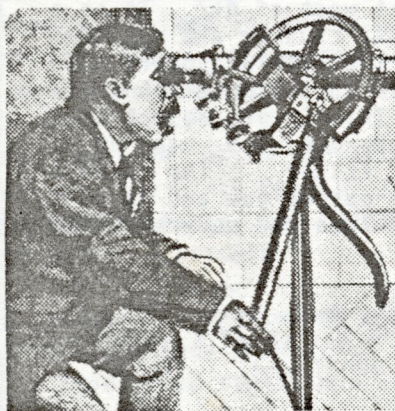
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Next Meeting July 29th