



THE

Prairie Astronomer

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THE EARTH LOVES FATTIES

(FROM COMPUSERVE'S NAKED EYE ASTRONOMY SECTION... BY MARTIN MORRISON)

There are three basic necessities in life: food, shelter and thinness. The old-fashioned need for love has been replaced by the modern need for thinness. This is easy to prove. There are more advertisements trying to sell thinness than advertisements trying to sell love, therefore thinness is the hotter need of the American consumer.

Now that you know thin is in, you should not be fooled into thinking that fat is where you're at. It is not relative. It is true that if it were possible to just skip around the naked eye solar system, you could change your scale weight as quickly as you and your scale could get from one place to another, but you still would not be part of the "in" crowd.

Suppose, for instance, you were a 300 pound, five feet tall weeble wobble. Stepping on a scale on the earth's surface you would either pin the needle, or in some cases drive the needle all the way around and past zero again. This only proves the earth loves you.

Your weight is the gravitational force of attraction between you and the earth. The more attractive you are to the earth, the more you weigh. Unfortunately, with the current passion for thinness, this is an unrequited love.

Actually every body in the universe loves you, not just the earth. This startling revelation is expressed in Isaac Newton's Law of Universal Love which states: "Every body in the universe attracts every other body in the universe with a force directly proportional to the product of their masses and inversely proportional to the square of the distance between them."

In other words, the more of you there is, the more you are loved. But absence does not make the heart grow fonder. The farther away you are, the less you are loved. It's an "out-of-sight is out-of-mind" relationship. The total amount of love shows up on the scale.

Suppose you found yourself and your scale on the moon. The moon is only one-quarter the size of the earth and has only one-hundredth the mass. The moon can only love you one-sixth as much as the earth.

On the moon your scale would read 50 pounds. But you would hardly qualify as anorexic. Your weight would be reduced, but not your mass. There would still be as much of you. You would still be a five feet tall weeble wobble.

The same would be true of any other place you traveled in the naked eye universe. On Mercury and Mars where the love force would be only one-third that of earth, the scale would read only 114 pounds. You might think yourself svelte, but you would still be a big mass weeble wobble. On Venus you may be a little lighter on your feet at 264 pounds, but you would still have a waist nearing retirement.

You would not want to go to the giant gas planets Jupiter and Saturn even if it were possible to stand on their gaseous surfaces. In spite of the magnificent beauty of the view, it would be depressing to find the scale reading 783 pounds on Jupiter and 345 pounds on Saturn.

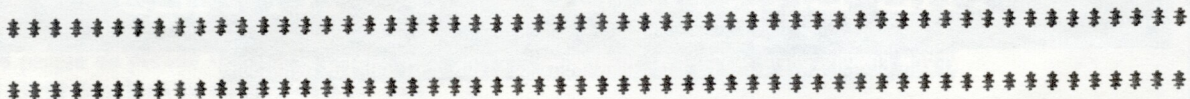
The sun, of course, would be totally out of the question. At the surface of this boiling cauldron of gas, one-third of a million times more massive and 100 times larger than the earth, the love of

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gravity is 28 times greater than earth. Just before you and your scale were incinerated into your primordial atoms, your scale would read 8400 pounds.

What is a person to do if they wish to cool down the earth's amorous advances? You have to substitute. Instead of enjoying a Milky Way candy bar in front of the TV, go out and snack on the summer Milky Way overhead. Instead of following a Mars candy bar from your hand into your mouth, follow the red planet Mars as it moves into the constellation Sagittarius this summer.

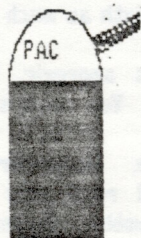
If all else fails, burn the love letters. Destroy your scale.



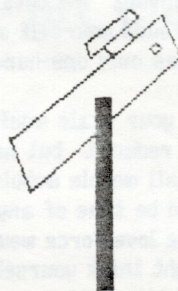
PRESIDENT'S MESSAGE...

The astronomy club may have the answer it has been waiting for in regards to the observing site by the upcoming meeting on Tuesday night. Of course this could drag on for another month too, but by the time you receive this newsletter, Lee Thomas, Del Motycka and I will have already had negotiations with the Coop in Firth, Ne. about how much the land will be sold for. So, come to the meeting this Tuesday if you would like to hear the results.

Also, Ron Veys is no longer directly in charge of constructing the 8-inch club telescope. The chairmanship of the club telescope committee was passed on to Dave at the last meeting. Dave and Ron spoke to each other after the meeting in regards to the proposed telescope, and I thought I overheard something about a "share the blame" policy, but Ron was quick to deny this and stated "all the blame lies with Dave now". I hope Ron and Dave can get things straightened out, and perhaps we'll have a new club telescope by the new year.



Andy Corkill



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), Lee Thomas (Treas.) 483-5639, Dan Neville (Prog. Ch.) 476-7772. All articles and comments should be sent to newsletter editor JOHN LORTZ 9255 CADY AVE. #14, OMAHA, NE. 68134 no later than 6 days before monthly club meetings.

AT THE LAST MEETING....

Andy Corkill (still club president) called the meeting to order at 7:32pm. There were 4 guests and 21 members present. The Annual Star Party was discussed (it was a rainy day and a clear night, plus a group visited the missile silo site near Firth and reported great skies!), and information was passed along concerning a computer club named Astronomy-Base 2 located in Fairdale, K.Y. (SEE A DESCRIPTION ELSEWHERE IN THIS NEWSLETTER...Ed.).

The Observing Site Committee gave a report:

Ron - a written quote to demolish the shaft concrete building, put the rubble in the shaft, cover it with dirt and compact the dirt was \$350.00.

Norma - still no information concerning liability insurance costs.

Lee - estimated the initial costs as follows..

| | |
|---------------------------|-------|
| 4 1/2 acres at 150/acre = | \$640 |
| approx extra expense = | 200 |
| site survey = | 200 |
| shaft closure = | 350 |
| concrete cover for shaft= | 150 |
| misc. = | 50 |

Total initial costs \$1500

Lee noted that these would be initial acquisition costs only, and do not include yearly costs. We currently have \$1500 in our savings account which is enough to get started. The yearly costs will still have to be evaluated (taxes, insurance, etc.).

David Knisely (seconded by Earl Moser) moved to delay the observing site decision until next month at which time move info will be available. The committee will meet again as soon as Norma has the insurance info.

Onward with the meeting, Jack Dunn offered to present a laser show at the planetarium to collect

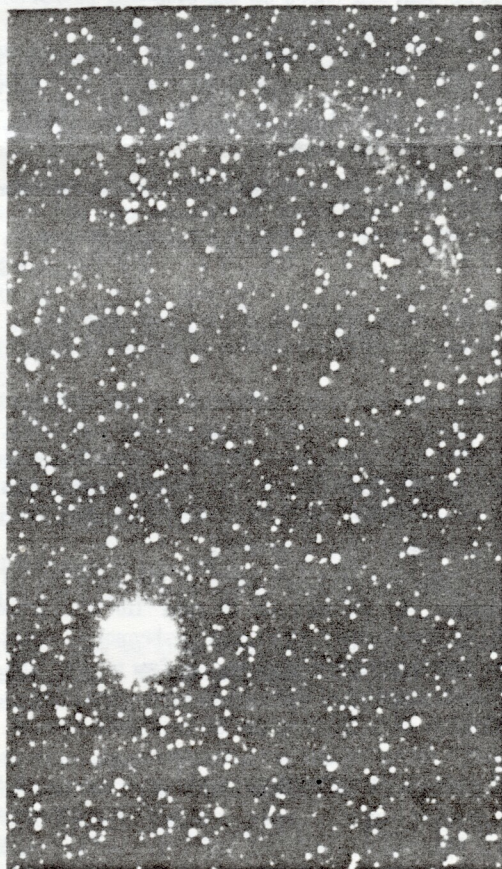
donations for the observing site. It was decided the show would be on October 2nd, at 7:30pm (SEE NOTICE ELSEWHERE IN NEWSLETTER... Ed.).

The 1987 "Exploring the Universe" calendar orders were taken this meeting and will still be available for order next meeting. The price is \$3.98 (retail is \$7.98) and must be paid for in advance.

Andy asked for members interested in presenting astronomy talks to camping and school groups. A list of members interested was collected, and Andy said anyone else interested could contact him. (Gas money will be provided)

The evenings program was presented by Ron Debus who recently completed a Dobsonian mounted 10" reflector. Refreshments were served after the meeting.

(Notes taken by Ron Veys)



PAC NOTES....

Just a few PAC notes... orders for the 1987 astronomy calenders will be taken at this month's meeting. The calenders will cost \$3.98 and must be paid for in advance.

Also at the next meeting, John Lortz will have a few of the better shots he got of Halley's Comet to show those people interested in getting a copy of the slides or pictures. This comes in response to numerous inquires about purchasing some of the pictures. John asks that those who do order pictures pay for them in advance to cover the costs of development.

The OBSERVING SITE COMMITTEE has been working steadily now for three months in regards to the missile silo site near Firth, NE, and reports that lots of progress has been made. The PAC Board of Directors voted that it IS feasible to purchase the land and that negotiations concerning price should be started. More on the site will be forth coming at the PAC meeting Tuesday night.

Those NEW members who would like to receive a NEW MEMBER PACKET should drop a note to John Lortz, 9255 Cady Ave #14, Omaha, NE, 68134. There is no cost for the packet.

WHAT'S NEW WITH THE PAC LIBRARY....

Norma Coufal, our esteemed Vice-President and club librarian recently dropped me a line indicating she would soon be purchasing some more books for the club library. She also brought up some interesting ideas that need the input from the club membership in general.

Until recent years (at least to the best of MY knowledge) the PAC has had no real "library" from which members could check out astronomy related books for home and field use. A few years ago, the club appointed Norma to look into the possibility of a library and to instigate one if feasible. Since that time she has organized, as best she could, the books which were available from previous years, and has added to the library from a few donations. She has also donated books from her own library to the cause.

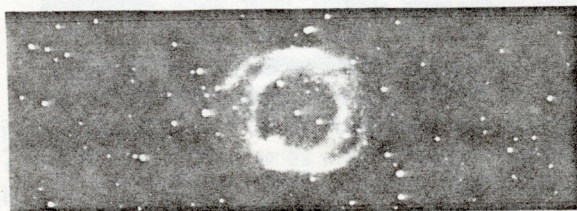
With this foundation in mind, Norma now needs your help. Club member input has been quite sparse as to what books should be in the library and in what direction the library inventory should take. A recent source of books has been from the Astronomy Book Club, of which many of you probably belong. Three new books are to be added from the ABC quite soon. But Norma suggests that we not use the book club as our only source of books.

What she needs is input from all of you. What books would you like to see in the library... i.e. what books would you really USE? Photography, computer, telescope making, and various technical books have been suggested so far. It has also been suggested that the library have a set of Burnhams books and a good atlas that could be used with the club telescopes.

One thing to keep in mind. Suggestions for the library need to focus on books that most people would not purchase on their own. We want this library for those members who don't buy a lot of books, and need a good source to help them along in astronomy.

Your input would be much appreciated. Even if certain suggested books could not be purchased immediately, a sort of wish/want list could be maintained so that if funds do become available, books could immediately be purchased. And by the way, the library is always open to a donation of books or of funds to help purchase new books (or do I state the obvious?). Please let Norma know as soon as possible some of your thoughts on the matter. Her address is...

Norma Coufal
1921 Beatrice St.
Lincoln, NE 68506



ASTRONOMY PROVIDED TIME FOR CIVILIZATION....

FROM COMPUSERVE'S NAKED EYE ASTRONOMY SECTION

Astronomy's most important contribution to civilization is time. Astronomy is all about time, past time, present time and future time. Without time there would be no civilization. There would be no "condition of human society marked by an advanced stage of development in the arts and sciences and by corresponding social, political, and cultural complexity."

It has been suggested that you really do not truly understand something until you are able to measure or apply numbers to that which you are trying to understand. The opposite is true of time. We have been measuring time longer than any other thing set to numbers, but we still do not fully understand it.

The measure of time began with the sun rising in the east. This was the beginning of "day" time. When the sun set in the west, daytime ended and "night" time began. The "uncivilized" creatures with whom we share this planet also measure time in this way to regulate their activities.

The gravity of the moon gave us high tide time and low tide time. The moon's 29.5 day changing pattern of waxing and waning light gave us "moonth" time or months. The 365.25 day period of change in the sunrise and sunset points, combined with the 47 degree variation in its midday, or noon time, altitude gave us the year.

The day, month and year are natural measures of time. They are astronomical units of measure derived from the changing appearance of the universe as viewed from planet earth. From any other planet, these units would be different.

Astronomy has also given us the artificial divisions imposed upon the natural units of time. The five naked eye planets, the moon and the sun gave us the seven days of the week. The new, first quarter, full and third quarter moon gave us the four weeks in the month, and the 12 full lunar cycles gave us the twelve months in the year. The divisions of the day, however, are non-astronomical.

The earliest measures of the passage of daytime were performed with sticks and stones and shadows. The shadows formed by the sun moved from west to east as the sun apparently moved from the eastern horizon in the morning to the western horizon in the course of the day. Our clock hands move "clockwise" in duplication of the movement of the sundial shadow.

The passage of time was seen in ancient Egypt, for instance, in the movement of the shadows cast by large stone obelisks. They were the Big Ben sundials of the pharaohs. At night, the Egyptians used the merkhet, a plumbline device that measured the apparent angular movement of the nighttime stars to continue their measure of the passage of time.

The Sumerians are credited with dividing day and night into 12 hour units. Twelve was considered a special or lucky number. In the beginning, all days and all nights were each 12 hours long.

An hour of daytime in the summer was originally much longer than an hour of daytime in the winter. The invention of mechanical clocks established a standardized measure of time based upon the average length of a day and the average length of an hour. It is this artificial time that we use to regulate our activities today.

But what is time? It's the measure of the interval between two events: two sunrises, two sunsets, two full moons, two positions of the sun among the stars, two repetitions of the position of the hands on a clock.

We know this interval is interminable when we are waiting, and we know this interval flies by when we are having fun. We have learned to take time, and waste time. We borrow time, find time, share time and run out of time. We do everything with time without completely understanding the essence of time.

When we look at the night sky, we look back in time. We see objects and events that occurred long ago because it takes time for the information to travel to us through the vast reaches of space. We can look back in time, but we can't go back in time to influence events.

Naked eye astronomy gave us time and time gave us civilization. But unfortunately, civilization took away the time for many people to enjoy naked eye astronomy.

THE NEXT STAR PARTIES ARE ON OCTOBER 3RD AND OCTOBER 31ST. As a quick reminder, October 3rd is also the date for a partial eclipse of the sun late that morning. Most people think the early fall sky has just open clusters and a few galaxies to offer. For the most part this is true, but there are a number of planetary nebulae that are worth looking at also. Up in northern Andromeda is the famous "blinking eye" nebula NGC 7662, less than a degree southwest of the faint star 13 Andromedae. It is fairly bright but rather small, so examine the area under moderate to high power before giving up. A six inch should easily show the disk which almost vanishes when observed directly, and an eight inch should show some detail as well as the central star.

Another good planetary nebula is M76, located about one degree north and a bit west of Psi Persei. It can be seen in telescopes as small as three inches and looks very much like a miniature version of the Dumbbell Nebula M27. It has faint "wings", but I doubt they can be seen in most amateur owned telescopes. Somewhat more difficult is NGC 1581, located seven degrees west and 1/2 degree north of Beta Camelopardalis. It is about 18th magnitude and appeared as a moderate to small sized bluish-grey disk of light that had a slightly brighter middle when seen with an eight inch.

Those of you who like open clusters should take a look at M34, located about four degrees west and two degrees north of Beta Persei. It is a large group of fairly bright stars and shows up well in most telescopes. Just over four degrees south of M34 is the faint galaxy NGC 1823. It is classed as an elliptical but in an eight inch it appears as a small lens shaped patch of light with a small tuft of light on the east side. This could be a companion galaxy or some peculiar extension so this object is definitely worth a second look.

In Cetus near the star Delta is a small group of five galaxies. The brightest is M77, located about a degree southeast of Delta. This object is just within range of a 24 inch refractor and is famous for its bright star-like core. The galaxy is one of the so-called "Seyfert" spirals which may be relatives of quasars but it doesn't show much detail unless at least an eight inch is used. The next easiest galaxy is the nearly edge-on spiral NGC 1855, located less than a degree east

OBSERVING CHAIRMAN'S REPORT

by David
Knisely



and a bit north of delta. It appears as a moderate sized streak of light with a star near one end when viewed through an eight inch. The other objects are much fainter. NGC 1873, located just over a degree north-east of 1855, is just a diffuse fuzzy spot, and the pair NGC 1887 and 1890 are even better (both are south-east of M-77).

While in Cetus, don't forget to check out the famous variable star Omicron Ceti, also known by the name "Mira". At the last star party, it was just visible to the naked eye and showed a deep red color through the telescope. Most of the time, this star is too faint to be seen without optical aid so now is your chance to get into the fascinating field of variable star observing.

SPECIAL LASER SHOW AT MUELLER FOR PAC!

There will be a special laser show at Mueller Planetarium Thursday, October 2nd at 7:30pm presented by Jack Dunn. This is a private showing for PAC members, thier families and a FEW friends. (The planetarium can seat about 90 people so please limit your friends!) A \$1.00 donation is suggested and will go towards the PAC's future observing site. There will also be refreshments provided after the show.

This should prove to be a very entertaining evening, so please plan on making it. (Mueller Planetarium is in Morrall Hall on the UNL downtown campus. Enter the building through the North doors. And please note... doors will be locked at 7:10pm to prevent anyone from escaping!)

CHANGE TO 7:00 PM

ASTRO COMPUTER CLUB

For anyone with a computer, Astronomy Base 2 is a computer club that is strictly for astronomy and computers. If you have a Commodore 64 or a Vic 20 you can send a tape or disk to Bill Cantwell (C-64, Vic editor) along with \$3.00 membership fee and return postage, and Bill will send you back astronomy programs on your disk or tape. This makes for an inexpensive way to get some good astro programs.

Bill Cantwell's address is:

P.O. Box 212
Ontario Center, N.Y. 14520

If you don't have a Commodore computer don't fret. The club deals with just about every brand of computer and gives you the same member benefits (i.e. programs). For computers other than Commodore send you medium and money to:

Astronomy-Base 2
216 Inglewood Dr.
Fairdale, KY 40118 (ATTN: Don Spain)

THE PRAIRIE ASTRONOMER

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Next Meeting September 30th