THE Prairie Astronomer

Volume 33 #8
August 1992

8-92

The Great Nebraska Star Party

President's Message by Dave Knisely

For those of you who missed it, the annual Prairie Astronomy Club picnic and star parties where a resounding success. Friday evening, the first star party was held under crystal clear skies, with Tom Miller and two of his friends from the Amarillo Texas club making believers out of all of us with their monster Dobsonians. Although not an official star party, about eight or nine people showed up to view distant galaxy clusters, nebulae, and even Pluto. We also caught the end of the Delta Aquarid meteor shower, which produced 10 to 15 meteors per hour. Next year, we will have to again have star parties on both Friday and Saturday nights.

The picnic proved once again to be the social event of the year, with nearly 40 people showing up to enjoy the food and the company. Doc Manthey gave a lot of us crossed eyes when he showed up with some 3-D graphics, and Bill Canady of Amarillo amused us with some interesting "Duck Music" from the Texas Star Party. As the sun began to set in the west, we once again gathered at the site to enjoy a good night of observing. The outer planets held center stage, with many of us getting our first glimses of the Uranian moons Titania and Oberon, along with Neptune's moon Triton. I counted sixteen telescopes, several pairs of big binoculars, and well over 40 people out at the site. We were also treated to several "Photon Torpedoes" (I always wondered what would happen if you held a flash unit up to the eyepiece of an 18" telescope). The night ended at around 3:30 a.m., when thunderstorms began approaching from the northwest.

I want to thank Kevin Koutnik for getting the pop, Steve Bornemeier and company for having the site ready (I loved the "landing lights" Steve), and everyone else for just showing up. Mark your calendars for August 16-17th, 1993 for the next GREAT NEBRASKA STAR PARTIES, but until then, see you at meeting.

NATIONAL YOUNG ASTRONOMER AWARD ANNOUNCED

from Astronomy Network News

The National Outstanding Young Astronomer Award is a major new award ìsponsored and organized by the Louisville Astronomical Society on ìbehalf of the Astronomical League.

The award will recognize the ìoutstanding high school-aged astronomer in the U.S. based on his or ìher involvement in any of the following areas: (a) research, (b) obìserving, (c) astrophotography/CCD imaging, (d) telescope and equipment ìdevelopment and modification, (e) academic performance, (f) public ìeducation and (g) junior activities.

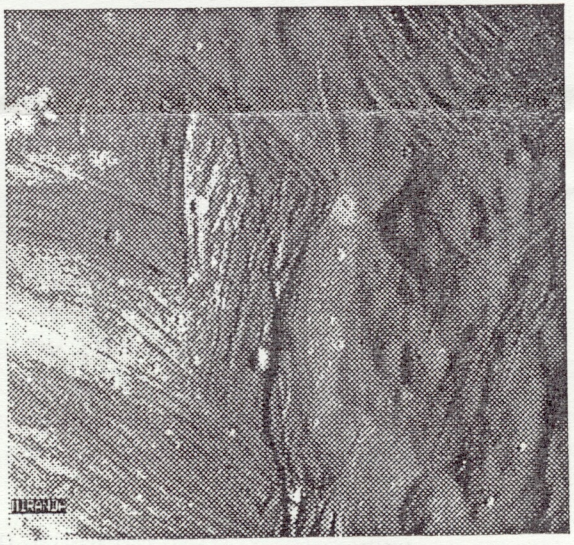
Award instructions and applications my be obtained by writing to: ìChuck Allen, Award Coordinator, 1007 Rollingwood Ln, Goshen, KY 40026.

FOR SALE:

8" Basch & Lomb series 8000 telescope

- 2 eye pieces
- wedge-tripod
- 2x barlow
- 90 degree prism
- photo extension tube
- external camera mount
- Orion Series 6 filter
- 1 year old, purchased from Orion
- might be interested in partial trade for a pair of astronomical binoculars

Call John Hultman: 402-298-8438



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...$10/yr; Family Memberships...$12/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 officers: Dave Knisely (Pres)223-3968, Eric Hubl (V.Pres)423-6267, Ron Veys (Sec)486-1449, Lee Thomas(Tres)483-5639, Jack Dunn (2nd V. Pres)475-3013. All newsletter comments and articles should be sent to Newsletter Editor JOHN LORTZ, 12023 PARKER PLZ #105, OMAHA, NE 68154 no later than 10 days before monthly club meetings. Club meetings are held the last Tuesday of each month at Hyde Observatory in Lincoln, NE.

Sky & Telescope News

From the Compuserve Info Service

AUGUST 14, 1992

YUCATAN NEWS

Today's issue of SCIENCE magazine carries a report that is big news for those in the impact biz. Using sensitive dating techniques, a team of scientists have finally determined an accurate date for a large impact feature buried beneath the Yucatan peninsula in Mexico. That date is 64.98 million years, with an error of no more than 50,000 years. The result virtually certifies that the 100-mile-wide crater is indeed the cause of a tremendous extinction of life on Earth 65 million years ago. Moreover, the age of the rock sample tested is indistinguishable from that of a thick bed of impact ejecta "splashed" onto nearby Haiti.

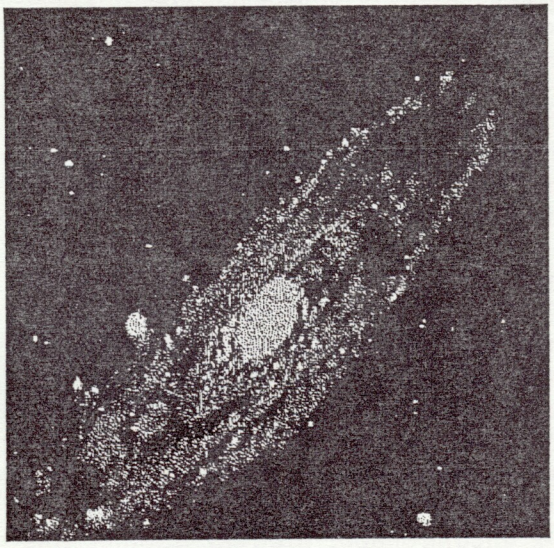
PERSEIDS: A FIRST REPORT

A remarkably consistent picture of the 1992 Perseid meteor shower has emerged from early reports submitted by SKY & TELESCOPE's readers. Although a nearly full Moon compromised everyone's observations, the consensus seems to be that this year's shower was better than average. But it was not the meteor storm that some had hoped might occur as a precursor to the possible return of Comet Swift-Tuttle—the source of the Perseids. Last year, for example, Japanese observers watched in amazement as Perseids flashed by at the rate of 300 per hour.

German amateur Mark Hardaker reports seeing more than two dozen Perseids brighter than 2nd magnitude in an hour at local midnight on August 12th, and more than 20 of them in the hour thereafter. John Bortle saw a similar number of Perseids soon afterward from his home in New York. According to Joseph Lynch, who described how to monitor meteors with radio equipment in the August issue of SKY & TELESCOPE, ham operators recorded the peak radio activity around 18 hours Universal time on August 11th, which was during daylight hours in North America.

NAKED-EYE SUNSPOT

Right now the sunspot count is moderate, with Caspar Hossfield reporting an index of 81 for the week ending August 12th. But numbers can be deceiving. Rick Krezewski called in to alert us of a huge naked-eye sunspot on the east side of the disk. Rick says the group has an unusually large and detailed penumbra, or skirt, around the darker interior region. If you do go looking for this sunspot, please observe safely and take the proper precautions. Use filters specially made for solar viewing, or a welder's glass of shade number 13 or 14.



TOOTHBRUSHES AND NEUTRINOS

by Stephen Goodfellow
from the Compuserve Astronomy Forum

When we wake up in the morning, we expect our toothbrush to weigh as much as it did the day before.

This expectation is ingrained in us, borne and confirmed throughout our lives as we subconsciously perform the experiment day after day in front of the mirror.

Everything weighs what it weighs, and that is that. For the most part, those astronomers and physicists who also brush their teeth and are prone the same conclusions about the gravitational integrity of the toothbrush as are the rest of us. None of us worry that we would wake up one morning and find that the toothbrush has become so heavy that we are unable to lift it.

Unfortunately, I am one of those people who do not always remember to brush my teeth every morning, and although I too expect my toothbrush to weigh the same every time I pick it up, I have lost my confidence in the mass/gravitational sanctity of certain objects. I am referring to massive objects made of plasma (super hot gas) like our Sun and other similar celestial bodies.

For quite some time now, scientists have been trying to determine the inner workings of the Sun by attempting to detect small, chargeless, possibly massless particles called neutrinos that emanate from its radiative activity. Neutrinos are slippery. In order to shield oneself from them, you'd have to make a lead wall two light years thick; (a little past the cutting edge of our present technology, should one of you have the uncontrollable urge to attempt this experiment).

By determining the amount of neutrinos coming from the Sun, scientists can then compare these results with the prevailing theories as to how the Sun shines. This has been done and none of them (exept mine,) fit.

Since loading "Can Gravity be Induced?" (GRVITY.TXT) into the library [on Compuserve], significant strides have been made in Neutrino detection.

For a long time Raymond Davis' neutrino detector tank located in an abandoned goldmine in Lead, Dakota was the only one around. It discovered that only a fraction of the expected neutrinos were turning up and gave tantalizing hints that the neutrino count drops during the high point of the eleven year sunspot cycle. Now, that really posed a problem for virtually all the solar theories because, If neutrinos originate from the Sun's interior and are not affected by the magnetic fields of sunspots on the Sun's photospheric surface (remember, neutrinos have no charge,) then why should neutrinos be affected by such spots? How could they be coming from inside?

Most astrophysicists scoffed at the rough data, confidently betting bottles of French wine that the data was a coincidental aberration and would not be repeated during the succeeding cycle. Well, it did. (Unfortunately, I was not considered worthy enough to get in on the bet, or I would have had a well stocked wine cellar!)

Since the GALLEX neutrino detector in Gran Sasso Italy and the SAGE gallium neutrino detector in the United Republics went on line, they have confirmed that only a fraction of the neutrinos are turning up, no matter what energy level they are from. To save their theories they are hoping that something is wrong with our understanding of the neutrino. Good luck boys.

For those of you too busy or lazy to upload my GRVITY.TXT of some years ago, here is a digest:

Pointing out that Hydrogen/Fusion Core Theories do not conform to observation, I proceed to explain that all observable space in the universe contains some measure of mass/energy and that space is an expression of pressure. This pressure acts with incredible force upon an Absolute Vacuum. I also point out that the attraction of space to an Absolute Vacuum is indistinguishable

from the force of gravity and that mass/energy (including neutrinos) cannot pass through its volume. Within this volume, time does not exist. At this point I propose that the Sun has no core. (Why are sunspots dark?)

Then I go on to explain that the Sun is a 'Bubble', the interior of which is an absolute vacuum, a 'rift' in the fabric of space. This rift is brought about by the Sun's matter, which, because of the unique property of it's plasma (super hot gas) state, it magnetically pulls itself apart, only to be halted by the gravitational implosion of exterior space. I point out that the Sun's source of energy is its mass being converted to energy at the 'bubble' boundary between space and the Absolute Vacuum. A vicious cycle. Amongst the tastier supportive evidence, if the primordial Solar system contracted, why does the Sun rotate so slowly in relation to, say, Jupiter? (Which contains over 60% of the angular momentum of the solar System.) Because, like a spinning ice skater stretching out her arms, she slows down. Likewise, when the proto sun inaugerated nuclear fusion in its core (just like the present theories) it expanded into a huge bubble (unlike present theories).

Helioseismology. Scientists keep repeating that the Sun occilates like a bell. Not like a cannon ball. If you want more, go read GRVITY.TXT

Anyway, Albert Einstein's Law of Relativity was confirmed by empirical experiment; a scientific team schlepped off to Africa to photograph a solar eclipse which confirmed the gravitational distortion of starlight passing close to the Sun. I now propose that it is possible to put my theory of Solar Plasma Induction of Gravity - Induced Gravity - to a rigorous empirical test:

Using the new Neutrino detectors, determine the angle of individual solar neutrino impacts and build up a 'Photo' of their origin. The Hydrogen/Fusion Core models demand that the neutrinos originate from the core. If this is so, we will expect to see a 'Core Effect', that is, the neutrinos will originate from within the Sun. This will not be so.

I predict that a 'Ring Effect' will occur; that is, neutrinos originate from, or near the surface of the Sun. To the observer, a greater number of neutrino events will occur near the Sun's limb (edge). also, neutrinos on the side of the sun facing away from the observer do not pass through the sun, hence less neutrinos than expected. This is a practical experiment, so I'm goin to fax copies of this item to the learned folk who dabble with the neutrino detectors. However, I'm putting a copy of what I'm sending them into this library so that it is public domain; a sort of, 'You know where you heard it first'.

Suggested easy reading: "At last, Neutrino results from GALLEX" by Ivars Peterson, Science News, June 13, 1992, Vol.141 No.24, p.388 "Solar neutrino update" Sky & Telescope, April 1992, p.369 "Images reveal greater sunspot structure" Science News, March 9, 1991 Vol. 139 No.10 p.149 "Elusive patterns seen in solar neutrino data" by Ivars Peterson, Science News, December 8, 1990, Vol. 138, No.23, p.358 "Everything for nothing" by Harold Puthoff, New Scientist, July 28, 1990 "Sunspots and neutrinos" Science News, April 21, 1990, Vol 137 No.16 p.245 "Making Sunshine" by Ivars Peterson, Science News, October 1989, Vol.136, No. 18, pp.280-281

Heavy Highbrow reading: "The Plasma Universe" by Anthony L. Peratt, Sky & Telescope Feb. 1992 "The role of particle beams and electrical currents in the plasma universe" by Anthony L. Peratt; Laser and Particle beams (1988) vol. 6, part 3, pp. 471-491. "Double Layers and Circuits in Astrophysics" by Hannes Alfven; IEEE Transactions on Plasma Science, Vo. PS-14, No. 6, December 1986 "Evolution of the Plasma Universe: I. Double Radio Galaxies, Quasars, and Extragalactic Jets." by Anthony L. Peratt, IEEE Transactions on Plasma Science, Vol. PS-14, No. 6, december 1986.

"Evolution of the Plasma Universe: II. The Formation of Systems of Galaxies." by A. L. Peratt IEEE Transactions on Plasma Science, Vol. PS-14 No. 6, Dec. 1986. "Ground state of hydrogen is a zero-point-fluctuation-determined state" by H.E. Puthoff, Physical Review D, Particles and Fields, Vol. 35 No.10, May 15th 1987, published by The American Physical Society. "Gravity as a zero-point-fluctuation force" by H.E. Puthoff, Physical Review, Vol. 39 No.5, 1st of March, 1989, published by the American Physical Society. "Source of vacuum electromagnetic zero-point energy" by H.E. Puthoff, Physical Review Vol.40, No.9, 1st Nov., 1989, published by the American Physical Society. "How the Solar System Was Formed" by Daniel R. Wells; 21st Century, July-August issue, 1988.

Another "Member" Article...

In past issues you've seen articles pertaining to how clubs treat new members, etc. Here is another look at the issue which offers some positive ideas and further points to ponder. The article is by John Borra and first appeared in the Boise Astronomical Society newsletter.

Many new members of our society feel alienated at star parties and other events which results in an unhappy attrition rate. It's as much my fault as anyone else's. The veteran observers have a tendency to adhere to one another at gatherings; this is natural, understandable behavior. Many of us do not observe as often as we'd like and are excited by the opportunity to gather with our astronomical associates. This is fine and a necessary part of our star parties, however, it often causes new members to feel out of place, lost and even unwanted. We must avoid this if our society is to grow.

A simple remedy is for veteran observers to be mindful that fledgling stargazers, who, despite their tremendous enthusiasm, often feel overwhelmed by their new avocation. Amateur astronomy is a many-faceted field, and few of us develop practical expertise in all areas.

There are things we veterans can do to support these noble novices (and I do mean noble; anyone who entertains an interest in astronomy is endowed with a curiosity and passion, a sense of self and world that sets him or her apart from most).

We should remind ourselves what we went through as beginners. Simply stepping away from our eyepieces fro a few minutes to point out the evening's bright stars and constellations is often enough to pleasantly satisfy novices and spur them on. By showing a newcomer how to use a planisphere or properly adjust a binocular, we endow him with the means of teaching himself.

When showing a novice a galaxy in the eyepiece, make an effort to explain what it is he is looking at. Indeed, don't allow him to simply look, but make him see. Show him how to use averted vision, explain that the feeble spindle of light is the distant glow of a hundred billion suns seen twenty million years in the past.

Much of the public would be unimpressed by such a sight, but almost all who are curious enough to attend a star party are genuinely impressed with such views. The explanation helps the novice to appreciate the subtleties and majesty of nature.

I know each of us wants to make the most of the time we spend at star parties. That's good; we ought to have a good time seeking celestial quarry in the harmlessly hedonistic manner we are accustomed to. But when we take a little time to help out our less knowledgeable associates, we all benefit.

One solution would be to institute an informal orientation session at the start of each star party followed by a question and answer period. If one or two veterans volunteered to entertain new members, the other veterans could go about setting up their telescopes. I always bring my latest binocular to start parties and suggest that novices do the same. Binoculars are wonderful instruments for the transition from naked-eye astronomy to telescopic astronomy.

As to the new members whose faces are unfamiliar to the veterans-speak up! Ask questions. You should never feel timid asking about things astronomical.

Observing Chairman's Report

by Dave Knisely

THE NEXT SCHEDULED STAR PARTIES WILL BE HELD FRIDAY, AUGUST 28th AND SEPTEMBER 25th AT THE ATLAS SITE. The cool and hopefully clear early fall skies offer a variety of interesting deep-sky objects for your viewing pleasure.

Start your viewing with the planetary nebula NGC 7008, located 4.3 degrees north an 2.75 east of 51 Cygni. Small instruments will only show a small diffuse oval patch. In an eight inch, the nebula shows a patchy outer shell and circular inner one surrounding a faint central star. Use of the Lumicon OIII filter enhances the detail, showing north side brightening, plus a faint star in the north part of the annulus when viewed in a ten inch.

A bit brighter planetary nebula is NGC 7009, the Saturn Nebula, located 1.3 degrees west of Nu Aquarii. Star-like in a 2.4" refractor, this object appears as a small bright bluish-green oval in a six or eight inch, the green color is especially apparent when you star at it for a while. A ten inch will sometimes show faint spikes of nebulosity off each end of the oval, and some vague detail is visible in the interior at high power.

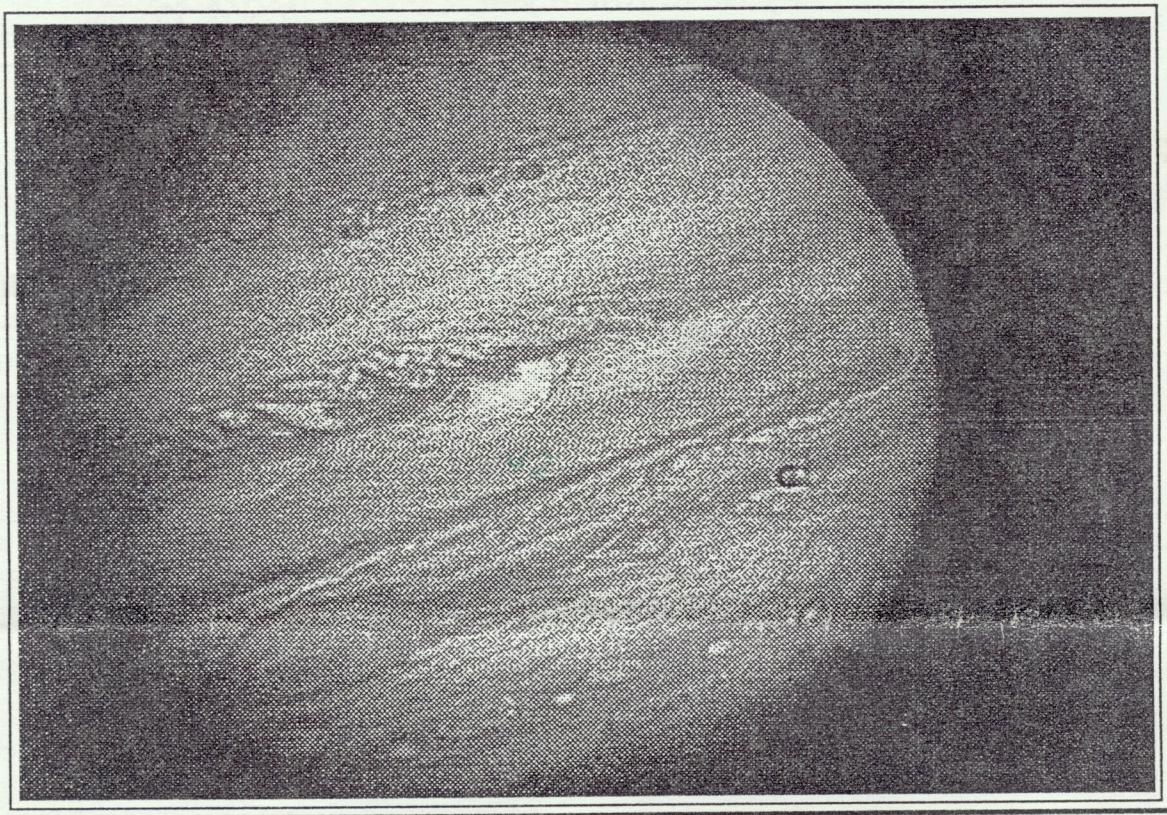
Also in Aquarius is the largest planetary in the sky, NGC 7293, known by most observers as the Giant Helical Nebula. It has a very low surface brightness and is in a rather blank portion of the sky where guide stars are hard to find. The best right-angle-sweep route is to go 1.25 degrees west of the faint star Upsilon Aquarii. It is vaguely visible in binoculars as a faint fuzzy disk, and responds well to nebular filters. The nebula is half the diameter of the full moon, so be sure and use low power. A four to six inch RFT equipped with the Lumicon UHC or OIII filter will show it as a large fuzzy ring with a faintly glowing interior. A ten inch with filters will sometimes show hints of the helical form, although none of the detail is very bright.

For those of you who like globular clusters, look for M15, a bright one located 3.5 degrees west and 2.3 degrees north of Epsilon Pegasi. It is easy to see in binoculars, and resolves partially in a six inch at high power.

Another bright globular is M2, located 4.75 degrees north and a half east of Beta Aquarii. Again a six inch will show many stars in the outer regions, with an eight inch at high power revealing thousands of faint component stars.

There are a few bright galaxies to be had in the autumn sky, and one nice one is NGC 7331, located 4.3 degrees north and one west of Eta Pegasi. It is small and faint in small telescopes, but an eight inch shows and elongated oval form with a brighter center and hazy exttensions off the ends, plus a notable drop off on the west side. A ten shows some patchy detail in the outer haze, plus a hint of a dark lane and or two faint galaxies nearby. Those with large apertures should look just under a

degree to the south and a bit west of NGC 7331 for the faint group of galaxies known as Stephan's Quintet. The group is a challenge for eight or ten inch apertures, and is very tight and difficult.



The Prairie Astronomer

c/o The Prairie Astronomy Club, Inc.
P.O. Box 80553
Lincoln, NE 68501

First Class Mail

92025 09/93 FS 08
Earl Moser
P.O. Box #162
Hickman NE 68372

Next Meeting August 25, 1992