

11-76

THE PRAIRIE ASTRONOMER

Volume 17, Number 1

November 30, 1976

THE BIG NEWS-- IT LOOKS LIKE LINCOLN WILL HAVE A COMMUNITY OBSERVATORY!

A formal announcement is expected in December that the Community Observatory fund has reached its goal of slightly over \$70,000, according to committee chairman Carroll Moore. Some details are still to be arranged with the principal donor and the Lincoln City Parks And Recreation Department.

However, Moore says he expects that bids on construction will be accepted starting January 1. Bids will probably be let February first, with construction to commence around the first of March. Allowing about three or four months for completion of the project, Lincoln's community observatory should be ready for the public in late Spring, 1977.

The observatory, which will house a 14-inch Celestron Schmidt-Cassegrain telescope on a permanent pier, will be located next to the Holmes Park golf course, just off the road to the boat docks. When completed, it will also contain an eight-inch rich field telescope, constructed and donated by the Prairie Astronomy Club, and one other telescope, probably an 8-inch Celestron or Dynamax. The observatory will also house a lecture-meeting room, and will have a large permanent solid slab on the exterior to facilitate viewing through portable telescopes.

Plans developed by the observatory committee for operation of the facility, which will be owned by the

City of Lincoln, call for members of the Prairie Astronomy Club to conduct regular public observation nights, and to participate actively in activities at the observatory, as well as having access to its instruments for research.

1977 OFFICERS ELECTED AT OCTOBER MEETING, PLUS NEWSLETTER DECISION

Officers for 1977 were elected at the October meeting. The new officers, who took the reins officially on November 1, are:

- President -- Larry Stepp
- Vice President -- Rick Johnson
- Secretary -- Ed Woerner
- Treasurer -- Lee Thomas
- Program Chairman -- Jack Dunn

Also discussed by club members at the October meeting was the subject
(Continued on page 2)

RELATIVITY THEORY PROGRAM AT NOVEMBER MEETING ON THE 30TH

The November meeting will be held at Olin Hall of Science, Nebraska Wesleyan University, on the last day of the month, November 30, at 7:30 p.m.

Ed Woerner, who says he has been heavily researching the General Theory of Relativity for the past six months, will present the
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OCTOBER MEETING ELECTS OFFICERS,
REJECTS REGIONAL NEWSLETTER DUES
(Continued from Page 1)

of assessing 50¢ per member for subscription to the Mid States Region Newsletter. Since few members expressed interest in receiving the newsletter, or increasing dues to cover its cost, it was moved that the club secretary write a letter to the Editor of the midstates newsletter suggesting that individuals be allowed to subscribe to the newsletter on their own should they desire it. For those interested in doing so, subscriptions can be mailed to:

Stella Publications
Mid-States Region
Omaha Astronomical Society
P.O. Box 34160
Omaha, Nebraska 68134

The club membership also expressed a desire to have the Abrams Planetary Sky Calendar included as a regular feature of the Prairie Astronomer. It will appear each month in the center section of your newsletter. Which brings up an important point: if you have suggestions on what regular features you'd like to see in the newsletter, or contributions you would like to make, check with Lee Thomas. After all, you're paying for this--it ought to be what you want it to be.

Observing Chairman's Report
PLUNGING DEEP INTO DECEMBER SNOWS
FOR DEEPSKY OBSERVING AND CHILLBLAINS

This month, let's look far south for a few interesting objects. In Aquarius, NGC 7293, also known as the giant Helical Nebula, is a large planetary nebula which should be observed under low power with a large telescope. It is located about 1-1/4 degrees west of Upsilon Aquarii. Nearby in Capricornus, look for NGC 7099 (M30), a fairly bright globular cluster about 3½ degrees east, and 3/4 degree south of Zeta Capricornus. It can be seen faintly with a pair of binoculars, but it takes at least 100x on an eight inch telescope to see any stars.

Moving farther east, pick up NGC 253, a large bright galaxy that can be seen with a good pair of binoculars. Located 4 degrees north and 2 degrees east of Alpha Sculptoris, this galaxy is one of the easier targets this month, showing some slight detail in larger instruments.

Nearby are two more objects of interest, NGC 288 and NGC 247. NGC 288 is a globular cluster 2-3/4 degrees north and one degree west of Alpha Sculptoris, which shows some stars at high power in my 8-inch Newtonian. NGC 247 is a fainter galaxy that is about the same size as NGC

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THE PRAIRIE ASTRONOMER is published monthly by the Prairie Astronomy Club, and is free to club members. Yearly newsletter subscription without regular membership is \$3. Regular membership (including one-year subscription to Sky & Telescope, club newsletter, and four quarterly issues of the Astronomical League publication, The Reflector) is \$9. Family membership, \$11. Editor, Lee Thomas (489-3855). Assistant Editor, Merton Sprengel.

FIRST REPORT FROM CLUB'S NEW PRESIDENT, LARRY STEPP

In my first president's report I would like to express the gratitude of the entire club to Earl Moser for many years of service, guidance, and hard work. As our president for many years, Earl has conducted our meetings, appointed club officers, advised many beginning amateur astronomers, presented programs, settled disputes, conducted correspondence for the club, and maintained the club observatory. He has hosted countless star parties, entertained and housed visiting amateur astronomers from outside our area, supported the Gateway sky shows, provided refreshments at the meetings, organized our yearly picnic, and recently he has helped to plan the new city observatory.

It is largely because of Earl's efforts that we are currently affiliated with the Astronomical League. He devoted extensive time and energy to enable us to host the Mid-States Convention in 1969. What prestige our club has around the region is due almost entirely to the personal respect Earl enjoys.

But most important, Earl Moser has set a standard of intellectual achievement, hard work and friendly dignity which serves as an example to us all. Thank you for all of us, Earl.

As you will read in another article, we have good news about the city observatory. We need to get busy on the telescope we are presenting to the observatory so that it will be ready when the observatory is, and we will need to discuss the

project at our next meeting. Anyone who wants to make any suggestions on the design of the parts of the telescope must talk to me no later than the November meeting, because we have to get the job finished as soon as possible.

At our last meeting we discussed an increase in dues to cover the cost of Stella, and it received virtually no support. What this means is that anyone desiring to receive Stella in the future will need to contribute fifty cents to them (as soon as possible) in order to stay on the list, and it appears that it will cost approximately fifty cents per year from now on.

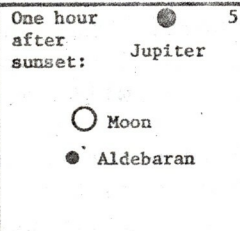
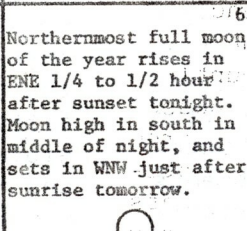
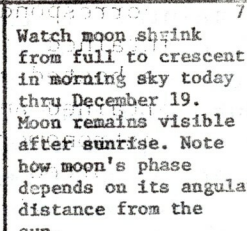
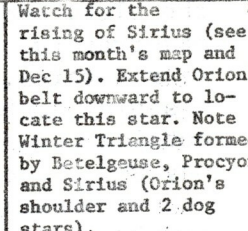
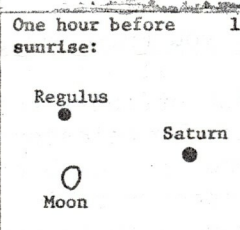
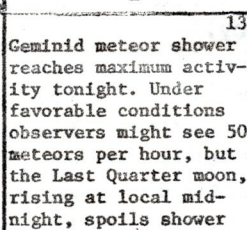
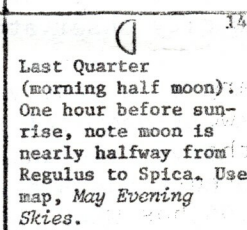
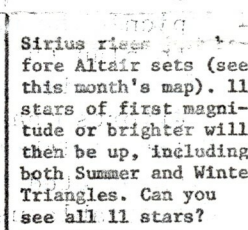
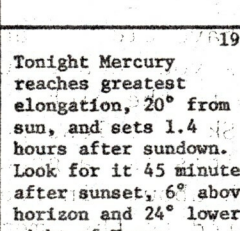
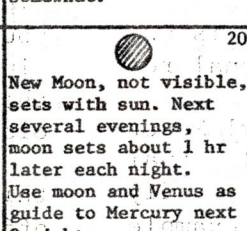
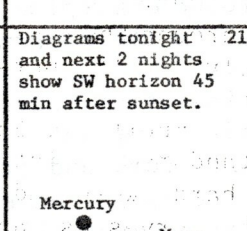
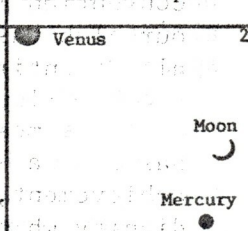
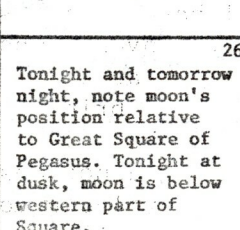
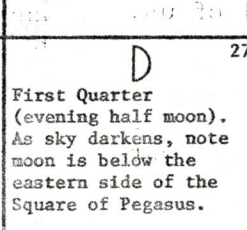
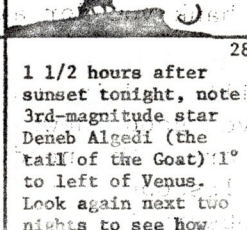
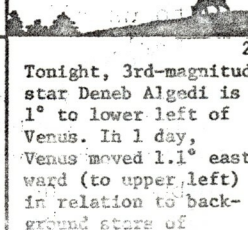
If you know of anyone who would like to sell a telescope, let one of the club officers know. We get many requests for telescopes before Christmas, and the club can make a little extra money by buying and then reselling good used telescopes. Also, if you have old Sky and Telescope magazines you don't want, please give them to the club. Never throw away old Sky & Telescopes.

This is a good time of year to think about increasing the services offered to the members by the club, and I have some suggestions listed below. Anyone who has any other ideas for activities and services is welcome to bring them up at the next meeting, but I would suggest that they should not cost much, and they should involve no more than a minimum of work by club officers, who already

(Continued to Page 6)

SKY CALENDAR DECI

Information for helping teachers and stu

SUNDAY	MONDAY	TUESDAY	WEDNESDAY
<p><i>Planets:</i> Venus, the brilliant "evening star", sets in SW 2 3/4 hrs after sun Dec 1; by Dec 31 it sets in WSW 3 1/2 hrs after sunset. For information on current apparition of Venus, see Sept <i>Sky and Telescope</i>, page 197.</p>	<p><i>Jupiter</i>, next in brilliance after Venus, is in the eastern sky at dusk. It is high in the south about 10:30 p.m. local time Dec 1, shifting gradually to 8:30 p.m. by Dec 31. Jupiter sets about 7 hrs after passing due south.</p>	<p><i>Saturn</i>, the brightest "star" in Cancer, rises in ENE 9:30 p.m. local time Dec 1, shifting to 7:30 p.m. by Dec 31. Visible rest of night; Saturn is high in S 7 hrs after rising. For approx place among stars, see January map.</p>	<p>Tonight Aldebaran is 1 low in ENE at dusk, high in south in middle of night, and low in WNW at dawn. Aldebaran at <i>opposition</i> (180° from sun) each year around this date, as earth passes between it and the sun.</p>
<p>One hour after sunset: Jupiter</p>  <p>Moon Aldebaran</p>	<p>Northernmost full moon of the year rises in ENE 1/4 to 1/2 hour after sunset tonight. Moon high in south in middle of night, and sets in WNW just after sunrise tomorrow.</p> 	<p>Watch moon shrink from full to crescent in morning sky today thru December 19. Moon remains visible after sunrise. Note how moon's phase depends on its angular distance from the sun.</p> 	<p>Watch for the rising of Sirius (see this month's map and Dec 15). Extend Orion's belt downward to locate this star. Note Winter Triangle formed by Betelgeuse, Procyon, and Sirius (Orion's shoulder and 2 dog stars).</p> 
<p>One hour before sunrise: Regulus</p>  <p>Saturn Moon</p>	<p>Geminid meteor shower reaches maximum activity tonight. Under favorable conditions observers might see 50 meteors per hour, but the Last Quarter moon, rising at local midnight, spoils shower somewhat.</p> 	<p>Last Quarter (morning half moon): One hour before sunrise, note moon is nearly halfway from Regulus to Spica. Use map, <i>May Evening Skies</i>.</p> 	<p>Sirius rises before Altair sets (see this month's map). 11 stars of first magnitude or brighter will then be up, including both Summer and Winter Triangles. Can you see all 11 stars? See list on map.</p> 
<p>Tonight Mercury reaches greatest elongation, 20° from sun, and sets 1.4 hours after sundown. Look for it 45 minutes after sunset, 6° above horizon and 24° lower right of Venus.</p> 	<p>New Moon, not visible, sets with sun. Next several evenings, moon sets about 1 hr later each night. Use moon and Venus as guide to Mercury next 3 nights.</p> 	<p>Diagrams tonight and next 2 nights show SW horizon 45 min after sunset.</p>  <p>Mercury Moon</p>	<p>Venus</p>  <p>Moon Mercury</p>
<p>Tonight and tomorrow night, note moon's position relative to Great Square of Pegasus. Tonight at dusk, moon is below western part of Square.</p> 	<p>First Quarter (evening half moon). As sky darkens, note moon is below the eastern side of the Square of Pegasus.</p> 	<p>1 1/2 hours after sunset tonight, note 3rd-magnitude star Deneb Algedi (the "tail of the Goat") 1° to left of Venus. Look again next two nights to see how much Venus moves.</p> 	<p>Tonight, 3rd-magnitude star Deneb Algedi is 1° to lower left of Venus. In 1 day, Venus moved 1.1° eastward (to upper left) in relation to background stars of Capricornus.</p> 

Magnitudes of the Planets: Venus -3.1 to -3.9; Jupiter -2.4 to -2.2; Saturn +0.4 to +0.3
 Mercury fades from -0.5 (December 10) to +0.4 (December 27), then fades rapidly.
 Planets against star background: Venus goes 36° eastward, from Sagittarius into Capricornus (see Dec 28-30). Jupiter retrogrades (goes west) 2.9°, crossing from Taurus into Aries and ending the month 9.5° SW of Pleiades. Saturn retrogrades 1° in Cancer, ending 9° east of Beehive and 14° west of Regulus.

DECEMBER 1976

Observers observe the sky

THURSDAY	FRIDAY	SATURDAY
<p>Use binoculars to see Ganymede, Jupiter's brightest satellite, nearly 0.1° east of Jupiter tonight. Since this satellite's orbital period is close to 7 days, it appears farthest east of Jupiter each Thurs in Dec.</p> <p>2</p>	<p>Jupiter's 4 brightest moons are visible in binoculars and small telescopes. Look for #4 farthest east of planet on Dec 6, 7, 22, 23, and 24, and farthest west on Dec 14, 15, 16, 31, and Jan 1.</p> <p>3</p>	<p>One hour after sunset: Moon & Jupiter</p> <p>4</p> <p>● Aldebaran</p>
<p>Evening gibbous moon rises 3 hours after sunset tonight:</p> <p>● Castor</p> <p>● Pollux</p> <p>Moon</p> <p>16</p>	<p>Mercury now sets in SW about 1 hr after sun. It is only bright "star" 25° lower right of Venus. Look 45 min after sunset. It is easier to see next two weeks.</p> <p>10</p>	<p>One hour before sunrise:</p> <p>● Regulus</p> <p>Saturn ●</p> <p>Moon ○</p> <p>11</p>
<p>● Moon tomorrow morning</p> <p>23</p> <p>Mercury</p>	<p>Sun eastern. Sagittarius around 12 noon E.S.T. today. On the 21st, sun reaches December solstice, the southernmost point in its annual path. Event marks beginning of winter in northern hemisphere.</p> <p>17</p>	<p>On solstice date, midday sun will be lowest of year, 26.5° above horizon as seen from latitude 40°N. For several weeks sun's midday altitude changes very little, hence solstice, "sun stands still".</p> <p>18</p>
<p>● Moon</p> <p>30</p> <p>Mercury</p>	<p>45 minutes after sunset:</p> <p>● Moon</p> <p>● Venus</p> <p>24</p>	<p>Which star chart to use? One hour after sunset tonight, use last month's map, <i>November Evening Skies</i>. 3 hours after sunset, use this month's map.</p> <p>25</p>
<p>tonight, look for 3rd-magnitude Deneb algedi 2° below Venus.</p> <p>31</p> <p>● Aldebaran</p>	<p>One hour after sunset:</p> <p>● Jupiter</p> <p>● Moon</p> <p>31</p>	<p>As 1977 begins, only 3 naked-eye planets are visible. They all can be seen 3 1/4 hrs after sunset: At that time, <i>Jupiter</i> is high in south, <i>Venus</i> is about to set in W, and <i>Saturn</i> has just risen in ENE.</p>

East Lansing Sunrise: December 16 8:02 a.m.; December 31 8:09 a.m. EST
 Sunset : December 1 5:05 p.m.; December 16 5:05 p.m.; December 31 5:13 p.m. EST

DISCOVERY OF SOVIET 'CRATER' IS CITED TO SUPPORT METEORITE THEORY

(Excerpt from New York Times)--
The discovery of what appears to have been an ancient impact crater six miles deep and more than 400 miles wide has been cited as evidence that bombardment of the earth by very large objects did not end in the planet's infancy.

The suspected crater, now heavily eroded and filled in, is in north Kazakhstan in the Soviet Union. Its dimensions would embrace all of the Northeastern United States from Boston to Baltimore.

It was described, based on Soviet studies, by Dr. Frank Dacheille of Pennsylvania State University at the annual meeting of the Meteoritical Society, an international association that met this month at Lehigh University in Bethlehem, Pa.

Dr. Dacheille has used estimated timetables of crater-producing impacts on the moon, plus the recent discovery and dating of several large crater remnants on earth, to estimate the relative frequencies of large and small impacts on this planet.

The huge Kazakhstan feature appears to have been formed about 425 million years ago when the earth had already been in existence for more than four billion years. Such impacts, he proposed, occur about once every 100 million years.

It is widely believed, for example, that there was a major impact in the southwest Pacific area some 700,000 years ago. This would account for the glass fragments, known as tektites, that are found in the region from the Philippines as far

south as Australia and, as microscopic components of sea floor sediment, almost as far west as Africa.

No big crater has been found in the region, apart from a hint of one beneath the Antarctic ice south of Australia.

According to Dr. Dacheille's timetable, about every one million years, on the average, the earth is struck by a meteorite large enough to leave a crater 30 miles wide. Impacts heavy enough to produce craters like that in Arizona, under a mile in diameter, should occur on an average of every 2,500 years, he said. Many, of

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PRESIDENT'S REPORT (Continued)

have many duties. Some ideas I have had are:

1. Quantity purchasing of books, handbooks and charts for resale to members.

2. Bulk purchasing of films of interest to amateur astronomers, such as 103 AE or High Contrast Copy film, for resale to members.

3. Telescope-making classes for beginners, using the club's mirror grinding machine.

4. Assembly of a catalogue library of information about products related to astronomy and telescopes.

Earl called my attention to the review of Pete Schultz's new book, Moon Morphology, on page 369 of the November issue of Sky & Telescope. Pete is a former Prairie Astronomy Club member, and we are proud of his publishing achievement.

--Larry Stepp

IS NASA "HIDING" POSITIVE PROOF THAT LIFE EXISTS ON THE MOON?

(Excerpts from The National Observer) -- "The moon is occupied by an intelligent race or races which probably moved in from outside the solar system," writes amateur astronomer George H. Leonard in his new book entitled Somebody Else Is On The Moon. "The moon is firmly in the possession of these occupants. Evidence of Their presence is everywhere: on the surface, on the near side and the hidden side, in the craters, on the maria, and in the highlands. They are changing its face. Suspicion or recognition of that triggered the U.S. and Soviet moon programs--which may not really be so much a race as a desperate co-operation."

So opens a sometimes breathless saga by a retired Federal health official. It's based, he says, on "a generation of moon buffery", although some who have read it think it's more "moon buffoonery."

But is it? Leonard has pored over hundreds of National Aeronautics and Space Administration (NASA) photographs to identify what he says are "structures showing perfect geometric shapes" and "a pipe which is between two and three miles long" and huge "x-drone" machines that "flail at ridges as well as spray out craters," and a "motor as big as the Bronx" and a "giant ladder--or tread from (a) mammoth vehicle" and "high-rise signals" and other various "constructions" and "oddities."

Leonard augments his sightings with a set of "hypotheses" that may explain them, such as: "They" are at least two races of creatures. They

extract metal from the moon's crust by advanced mining techniques. They drove the moon to its earth orbit for "repair" after some catastrophe elsewhere in the universe. They are performing breeding experiments using the human race and apes. And they are parasites on the earth, stealing our cattle and water. He accuses NASA and the U.S. Air Force of covering up what they've discovered about Them.

A NASA spokesman dismisses Leonard's book and its conclusions with an official "no comment", but adds: "His writing is all gray-area stuff--where there's no clear answer one way or the other-- which is what it's bound to be when you're 240,000 miles away from your subject."

OBSERVING REPORT (From Page 2) 253, but is somewhat fainter. It is located about 3 degrees south of Beta Ceti and slightly east of that star. In case you are interested, the globular cluster NGC 288 is less than one degree northeast of the South Galactic pole, so anyone out in that globular should be getting a great view of the galaxy. I'm also issuing a challenge to anyone to find NGC 11470, a large planetary nebula in Cepheus.

Announcement: There will be a public night at Behlen Observatory on December 10 from 7:00 p.m. to 10:00 p.m. Anyone who went out last time had to look through a telescope with a dirty mirror, but next time it will be clean!

--David Knisely

NOVEMBER MEETING WILL HAVE DISCUSSION OF GENERAL RELATIVITY THEORY

(Continued from Page 1)

program. He will examine the popular, technical, and mathematical aspects of the theory, with special emphasis on its implications for astronomy. For example, the theory has important implications on such heavily-discussed topics as the expansion of the universe.

Ed is leading the way in getting participation from individual club members in presenting programs. Just about everyone in the club has areas of special interest that they have pursued on their own. How about volunteering to present a program...and spread that knowledge around to people who are really interested? Program Chairman Jack Dunn would be happy to talk to you about presenting a

program.

There will also be a discussion at the meeting concerning group purchase of the Observers Handbook for 1977 and/or the Astronomical Calendar published by the Astronomical League. We can receive considerable discount on the cover price of both these publications if we make a single large bulk order, so it is important to determine now if we want them.

CRATER (Continued from Page 6)

course, land in the sea and leave no obvious record.

The huge area in Kazakhstan, centered on salty Lake Tengiz, has been attributed to impact in part because of seemingly shock-altered quartz formations there. It is now referred to as the Ishim Impact Structure.

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9/77