



1988 Club Elections To Be Held At October Meeting

Club officer elections for the 1988 year will be held this coming Tuesday night at the Prairie Astronomy Club meeting. The nominations were open at the September meeting with the following members so far nominated for office:

PRESIDENT: Dave Knisely

*- Del Motyka
John Lortz

4343-05X
08510

VICE PRESIDENT: Dan Neville

Andy Corkill
*- Ron Veys
Steve Bornemeier

SECRETARY: John Lortz

*- Ellen Owen

TREASURER: Ron Veys

*- Dan Neville
Donn Baker

2ND VICE PRES: Ron Debus *-
(Program Jack Dunn
Chairman)

Address / 475-4567
Phone
offer raise

Nominations for all offices will remain open until voting takes place at the October meeting. If you're interested in helping the PAC out as a club officer, please feel free to nominate yourself for office.

*** THE SOLAR BULLETIN ***

The American Sunspot Program

Volume 43 Number 9

September 1987

Peter O. Taylor, Editor

74270,1516

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Final American Relative Sunspot Numbers For September 1987

1) 37	2) 37	3) 38	4) 37	5) 40
6) 50	7) 60	8) 70	9) 74	10) 63
11) 58	12) 39	13) 25	14) 19	15) 15
16) 14	17) 24	18) 27	19) 36	20) 41
21) 29	22) 23	23) 24	24) 21	25) 11
26) 11	27) 18	28) 20	29) 27	30) 31

Final Mean = 34.0

Number of Contributors = 53

Final Smoothed Mean for March 1987 = 20.4

Final Mean For August = 39.0

FROM COMPUSERVE'S ASTRONOMY FORUM

The *Prairie Astronomer* is published monthly by the Prairie Astronomy Club, Inc., and is free to all club members. Membership status and expiration date is listed on the mailing label. Membership dues are: Junior Members and Newsletter Only Subscribers... \$8/yr; Regular Members... \$22/yr; Family Membership... \$25/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: Lee Thomas (Pres) 483-5639, David Knisely (V.Pres) 1-223-3968, John Lortz (Sec) 1-390-9821, Norma Coufal (Tres) 483-5685, Dan Neville (2nd V.Pres) 476-7772. All newsletter comments and articles should be sent to Newsletter Editor JOHN LORTZ, 9255 CADY AVE #14, OMAHA, NE 68134 no later than 6 days before monthly club meetings. Club meetings are held the last tuesday of each month.

Prairie Astronomer

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Observing Chairmans Report

by David Knisely

The next scheduled star party is on November 20th at the Atlas observing site. The last one brought out eight dedicated observers and five telescopes so be sure and come even if you don't have an instrument of your own.

The late fall sky looks out away from the galactic plane into a relatively blank area of space that is sprinkled with a number of galaxies. One of the brightest is NGC 253, the great sculptor spiral, located about five and one-half degrees south and one east of Beta Ceti. This nearly edge-on galaxy can be seen in a pair of binoculars as a small fuzzy cigar shaped patch that is slightly brighter in the middle. An eight inch on a good night will reveal some vague details near the center of the object and a ten inch will show much dark mottling, especially when the Lumicon Deep-Sky filter is used. Nearby is the globular cluster NGC 288, located one degree south and one east of NGC 253. It should be visible in a four inch, but it takes a good night and eight inches of aperture to show many stars in this distant cluster. Less than five degrees north of NGC 253 is another nearly edge-on spiral, NGC 247. It is almost as big as NGC 253 but is somewhat fainter and shows less detail.

About a degree north-east of eta Piscium is the face-on spiral M74, which just



may be the most difficult Messier object to find. It is rather small and appears as a faint fuzzy star in small instruments. A ten or twelve inch aperture sometimes shows vague hints of the spiral structure along with the bright nucleus, but for the most part, this galaxy is featureless.

Near Delta Ceti is a group of five small galaxies that are interesting in moderate sized apertures. The brightest is M77, which should just be visible in a three inch if you look about a degree south-east of delta. It is one of the Seyfert galaxies and has a bright star-like nucleus that is visible in a six inch. A ten inch under good conditions will show some hints of the tight spiral structure in this active galaxy. The next brightest is NGC 1055, located less than a degree east of delta. It should be visible in a six inch as a very faint elongated fuzzy patch with little other detail. About a degree north-east of NGC 1055 is the faint galaxy NGC 1073, which shows little detail in most amateur owned instruments. The pair of faint galaxies NGC 1087 and 1090 are a degree east of M77 and are difficult objects for apertures less than eight inches. For F.

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Those of you who like bright galaxies, try NGC 1023, located about four degrees east and a half north of rho Persei. It appears as a fuzzy lens shaped patch in most small and moderate sized telescopes with large ones showing what may be a faint galaxy on the eastern tip of NGC 1023. About four degrees north and slightly east of NGC 1023 is the beautiful open cluster M34. It is fairly rich and should be easy in almost any telescope. One of the easiest planetary nebulae can be found about a degree north of psi Persei, namely, M76. Known in some circles as the "Butterfly", or "Little Dumbbell", this object should be easy in a four inch, appearing as a fuzzy barbell shaped patch of light. Larger instruments when equipped with either the Lumicon UHC or Oxygen III filter will show the object's "wings" as faint wisps of light on both sides of the dumbbell.

As a final target, try the interesting planetary nebula NGC 1514, located one degree south and three east of zeta Persei. Rich Johnson has given this one the name of "The Crystal Ball", and in six or eight inch telescopes equipped with the UHC or Oxygen III filters it does look the part. It has a very bright central star and my ten inch with the filters shows a dark arc around the central star that makes this object look like the galaxy M64. Take a look at it and see what you think.

Sky & Tel News:

FROM COMPUSERVE'S ASTRONOMY FORUM

OCTOBER 16, 1987

COMETS, COMETS, COMETS

David Levy of Tucson, Arizona, discovered his second comet this year, 1987y. He first glimpsed it low in the west on the evening of the 10th. Levy describes it as diffuse with some central condensation, and having no tail. The few observations made so far put the comet's magnitude at between 9 and 9-1/2. The most recent position, determined October 13th in 1950 coordinates, was right ascension 14 hours 47 minutes, declination +17.1 degrees. Only a couple of accurate positions have been measured - not enough for computing an orbit. However, the comet is apparently moving southeastward on the sky and away from the Sun in space.

Comet Bradfield, at 7th magnitude, continues its slow climb northeastward. With the Moon out of the sky, the comet should be easy to spot in binoculars. Observing last night from northern California, amateur Bill Smith says this comet has a stellar nucleus and a distinct hood on the sunward side of its coma. John Bortle also reports considerable structure in the inner coma. Positions for the comet are given in the entry here for October 2nd.

By now, Comet Rudenko should be moving away from the Sun in morning twilight, though we haven't heard any reports of sightings. It is now 30 degrees away from the Sun; positions are given here (see entry for October 2nd).

OCTOBER 2, 1987

EPHEMERIDES FOR COMETS RUDENKO
AND BRADFIELD

Here are epoch 2000 coordinates at 0 hours Univer-

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sal time for COMET

RUDENKO (1987u) until the end of the year.

	R. A. (2000)	Dec.	Mag.
Oct. 2	12h 26.9m	+18d 39'	7.5
	7 12 15.1	15 42	7.3
	12 12 03.6	12 07	7.3
	17 11 52.6	7 50	7.3
	22 11 42.4	+2 44	7.4
	27 11 32.7	-3 13	7.6
Nov. 1	11 23.2	10 05	7.8
	6 11 13.2	17 55	8.1
	11 11 02.0	26 39	8.3
	16 10 48.1	36 04	8.6
	21 10 29.6	45 45	8.9
	26 10 03.0	55 05	9.2
Dec. 1	9 22.5	63 19	9.6
	6 8 19.7	69 36	10.0
	11 6 51.8	73 01	10.4
	16 5 18.5	73 16	10.8
	21 4 07.1	71 17	11.2
	26 3 21.3	68 21	11.6
	31 2 52.8	-65 13	12.0

Here are epoch 2000 coordinates at 0 hours Universal time for COMET

BRADFIELD (1987s) until the end of the year

Oct. 2	15h 54.8m	-11d 15'	+7.0
	7 16 08.7	9 47	6.7
	12 16 23.3	8 12	6.5
	17 16 38.8	6 29	6.2
	22 16 55.1	4 37	6.0
	27 17 12.3	2 35	5.8
Nov. 1	17 30.5	-0 24	5.6
	6 17 49.9	+1 57	5.5
	11 18 10.6	4 27	5.4
	16 18 33.0	7 05	5.4
	21 18 57.4	9 50	5.4
	26 19 24.1	12 38	5.4
Dec. 1	19 53.2	15 27	5.5
	6 20 25.0	18 09	5.6
	11 20 59.0	20 38	5.8
	16 21 34.8	22 44	6.0
	21 22 11.3	24 23	6.3

Lessons in Astrophotography

Here's the third installment of Gregg Beach's series of astrophotography articles downloaded from the Compuserve Astronomy Forum.

WHAT'S YOUR ANGLE? (*)

Let's photograph some constellations tonight! I've got my 35mm camera, film, and tripod ready. Hmmmm, what lens(es) should I bring?

First of all, let's answer these questions:

1) At this time of year, what constellations are in the night sky? 2) What time do I plan to shoot? 3) Do I have my star chart or atlas ready? 4) Do I want each constellation to fill the frame or do I want to use one lens only? This would show the relative size of each constellation, small or big.

Well, questions number 1 and 2 are answered by number 3, and question number 4 is answered by you. [For argument sake this example will not be motor driven.]

As you may all ready know Cygnus is larger than Lyra. What lens will cover the full extent of Cygnus? This brief Basic program should help in your planning:

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100 REM ANGLE.BAS
110 REM WHAT'S YOUR ANGLE?
120 REM For finding IMAGE SIZE and FORMAT COVERAGE of Telephoto Lenses
130 INPUT "Focal Length of Lens (MM)";F
140 INPUT "Angular Size of Constellation (DEGREES)";T
150 S=F*T/57.29578
160 PS=2*ATN(11.45/F)*57.29578
170 PL=2*ATN(17.1/F)*57.29578
180 PRINT "LENS F.L.: ";F;"MM"
190 PRINT "IMAGE SIZE: ";S;"MM"
200 PRINT "FORMAT COVERAGE (35mm

```


film): "FS;"by";FL;"DEGREES"
210 END

Example: CYGNUS (**)

Focal Length of Lens (MM) 50 Angular Size of
Constellation (DEGREES) 22

LENS F.L.: 50 MM IMAGE SIZE: 19.1986 MM
FORMAT COVERAGE (35mm FILM): 25.7967 by
37.7614 DEGREES So, this tells us that using a
50mm lens with a 35mm camera, the long dimension
of Cygnus would be about 19mm on the film which
covers an area of about 25.8 by 37.8 degrees. That's
just about right! Of course you can run the program
again to find the image size of the "width" of Cygnus,
and try different lenses to see how big Cygnus
would be. Why not try a 28mm or 1000mm? What
happens?

Armed with a good star chart and the above pro-
gram, you can plan ahead and know exactly what
you're going to get without any second guessing!
Here are some common lenses and the area of the
sky each covers:

LENS (mm) 35mm FRAME (deg.)

28	44.5 by 62.9
50	25.8 by 37.8
135	9.7 by 14.4
180	7.3 by 10.9
200	6.6 by 9.8
450	2.9 by 4.4
1000	1.3 by 2.0
2000	0.7 by 1.0

NOTES:

* Adapted from ASTRONORTH Vol. 3 No. 9,
Sudbury Astronomy Club** From SKY ATLAS
2,000.0, Sky Publishing Corp.

At The Last Meeting

Vice President Dave Knisely pre-
sided at the September meeting in the ab-
sence of President Thomas. Many comple-
ments were put forward toward the Prairie
Astronomer newsletter. Both style and
content were greatly appreciated by all
present. Dave reported on Lumicon filters
(referring to Rick's article in the September
newsletter). He thinks that the UHC filter
is best if you're just purchasing one.

Nominations for next month's club
officer elections were open [SEE PAGE 1
FOR OFFICER NOMINATIONS, ED.].
Nominations will remain open until elec-
tions at the October meeting.

Any members interested in ordering
the 1988 "Wonders of the Universe" wall
calendars for 1/2 price (\$3.98), you must
sign up for them at the next meeting or with
Lee Thomas. We need a minimum of 10
orders to get the discount price. The calen-
dars are especially beautiful this year! Also,
orders for "The Astronomical Calendar
1988" are being taken and cost \$8.40 (in-
stead of the regular \$12.00). This is not
really a calendar, but a very useful almanac
of tables, charts and information.

Dan Neville a nice program on the
new Ukanometria 2000 star charts. Reports
are that the charts are quite good and worth
the price.

Presidents Message

by Lee Thomas

Election of officers for the 1987-88 term will take place at our October meeting, which means this will be my last message as your president. That, in turn, means that this will be one of those "Look-at-all-the-great-things-we've-accomplished-in-the-last-year" messages.

Well, we have... and we haven't. We acquired an observing site, which was no small undertaking. We haven't made it completely secure. We did accomplish some important landscaping and seeding, but there's no outhouse and we haven't welcomed in our neighbors to establish rapport with the community. We've developed a hardy little band of people who can be counted upon to do some hard work, but a number of folks who supported the project at its inception have been absent from the ranks of keyholders and cleanup crews.

Personal situations change, of course, as witness my own, and sometimes you can't accomplish all that you had hoped. Certainly, the club has made a very good start towards an excellent observing site. It wouldn't be inappropriate to take a bit of time (during the winter) to settle back and enjoy the fruits of our efforts. Come spring, however, I hope that whoever is elected President next Tuesday can count on everybody to pitch in.

We've lost some very good members during the last year. It's interesting, though, that most have moved to other communities, rather than dropping out from lack of interest. Some have even maintained their membership in the club despite living hundreds of miles from Lincoln, and in a few cases, even when they have joined another club in their newly-adopted communities. And, during the year, we have gained some new converts: willing, active and interested.

If membership totals are any indication, we seem to have succeeded in providing what our members want. It may not be possible to satisfy every taste, but the last thing a club officer wants to hear is that somebody quit out of frustration. The perfect time to exert your influence on the club's direction is during the election process. I have belonged to many organizations, and I can

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honestly say that the Prairie Astronomy Club is the most "open" that I have ever encountered. No "cliques" have ever run it, and I have never seen a club officer pursue his or her own agenda when there is even a ripple of doubt among the members about its wisdom.

I look forward to retirement from the presidency and some time with my telescope. I know that you don't have to be an officer of PAC to influence its direction, but you should consider running for office to pay back some of the service and support the club provides.

Thanks for your help during my term. Let's make Tuesday's election like a convention of Democrats—candidates everywhere you look!

The Prairie Astronomer

c/o Prairie Astronomy Club, Inc.

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1st Class Mail



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HICKMAN NE 68372
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Next Pac Meeting October 27