

2-78

# THE PRAIRIE ASTRONOMER

Volume 18, Number 3

February 28, 1978

## BRIGHT NEW COMET IS DISCOVERED--ANOTHER FEATHER FOR AUSTRALIAN BRADFIELD

The first new comet discovery of 1978 likely to be of interest to amateur astronomers was announced by the IAU on February 6. William A. Bradfield of Dernancourt, near Adelaide, South Australia, discovered Comet 1978c on February 4.755 at 18 Hours 21.2 Minutes RA, -49 degrees 56 minutes declination, approximately Magnitude 8. As you can tell from the declination, the comet was quite far south at discovery, but it is moving rapidly northward. The object was diffuse with condensation.

Orbital elements calculated by M. P. Candy and D. Herald from observations in early February indicate that perihelion is imminent: it will occur approximately March 18 at a distance from the sun of about .48 AU. The comet's magnitude is expected to increase markedly in the period before perihelion, reaching approximately 3.9 just before, and 4.1 just after. At present, the comet is moving northeast in the constellation Sagittarius. Following is the ephemeris for Comet Bradfield 1978c through March:

		<u>RA</u>	<u>DEC</u>	<u>MAG</u>
Mar.	3	21h00.41	-21°33.9'	4.7
	8	21 27.69	-13 41.2	
	13	21 55.73	- 5 35.2	3.9
	18	22 25.29	+ 2 14.9	
	23	22 56.43	+ 9 18.9	4.1

### FEBRUARY MEETING SCHEDULED FOR OBSERVATORY ON THE 28TH

The February meeting of the Prairie Astronomy Club will be held at Hyde Memorial Observatory on Tuesday, February 28, at 7:30 p.m.

The program will be given by Larry Stepp. It will cover Larry's trip to Mexico to view the Solar Eclipse of 1970.

### SUPPLY OF OBSERVE MANUALS IS IN

The Prairie Astronomy Club now has a good supply of the Astronomical League's OBSERVE; A GUIDE TO THE MESSIER OBJECTS, which has been requested by many new members. This guide is an excellent way to learn the sky,

(CONTINUED ON PAGE 4)

## SO, YOU THINK THIS WINTER IS COLD--JUST WAIT!

The sun's surface temperature fell 11 degrees last year, the first such drop ever recorded.

It represents a change of only one-half of one percent, said Dr. William C. Livingston of the Kitt Peak National Observatory in Tucson, Arizona, where the changes were measured.

But scientists say a 2 percent decline over a period of as little as 50 years would be enough to "glaciate" the entire earth.

"We presume the changes we see are cyclic and that the temperatures will stop falling sometime in the near future", Dr. Livingston said. "I can't imagine anything else happening."

The decline began in January 1977, around the time the 11-year sunspot cycle passed its period of minimum activity and began to increase.

More and more sunspots have broken out on the sun's surface since the start of 1977. The period of maximum sunspot activity is expected late next year or early in 1980.

"We think we're seeing a direct correlation here, that as solar activity goes up the sun's surface temperature goes down", Dr. Livingston said. "It's the opposite of what you might guess, but we believe that when you have a rise in sunspot activity the total temperature must go down as an adjustment to conserve solar energy."

Kitt Peak scientists made their observations with the McMahon solar telescope, which is the newest and largest of its kind.

The telescope tracks the sun with an 80-inch mirror that delivers an unblurred image more than three feet across to a device called a spectroscope. The spectroscope breaks down sunlight into a continuous rainbow of color where temperature changes can be identified in individual chemical elements as they burn on the sun's surface.

The most sensitive element is carbon, which flares up if the sun gets hotter and dims if the sun cools. Iron is also sensitive, but in the

(CONTINUED ON PAGE 3)

---

THE PRAIRIE ASTRONOMER is published monthly by the Prairie Astronomy Club, and is free to club members. Yearly subscription without club membership is \$4.00. Regular membership (includes one-year subscription to Sky & Telescope, club newsletter, and four quarterly issues of the Astronomical League newsletter), is \$12.00. Family membership is \$14.00. Newsletter Editor, Lee Thomas (489-3855). Address all correspondence to P.O. Box 80553, Lincoln.

## CLUB TREASURY RECEIVES AID FROM JESS WILLIAMS MEMORIAL FUND

*With a check for \$10 on February 1, the total received from the Lincoln Foundation since the establishment of the Memorial Fund in memory of Jess Williams, is now \$80. Mr. Williams, a founder of the Prairie Astronomy Club, designated the club as one of two recipients of gifts in his memory. The Memorial Fund is being administered by the Lincoln Foundation, Incorporated.*

---

## SO, YOU THINK THIS WINTER IS COLD! (Continued from Page 2)

opposite way that carbon is. Should the sun cool, iron would stand out a little brighter on the sun's surface.

Livingston said the solar telescope first began to watch for temperature changes in January 1975. For the next two years, the telescope saw no change in the sun's temperature, which remained constant at 9,820 degrees Fahrenheit. The carbon began to dim in January, 1977. At precisely the same time, iron grew stronger. Livingston said the iron observation was confirmation that the sun was cooling, since it meant that the telescope itself was not misreading the carbon change.

What does it all mean? Livingston said that it almost surely means some climate change, since declining solar temperatures mean that less

heat will reach the earth. At the same time, rising sunspot activity means that more ultraviolet light and x-rays will strike the outer boundaries of the earth's atmosphere, triggering changes of their own.

"It would be premature to look for climate change right now", Livingston said. "By that, I mean I don't think you can blame the last two winters on what we're seeing on the sun right now. But I do think we can look ahead to some change, whatever it might be."

A growing number of scientists believe that changes in the sun trigger changes in the earth's climate. Scientists now believe the 11-year sunspot cycle has a strong connection with drought on the earth. The drought in southern New Mexico that ended in August 1972 came to an end at the same time that large solar flares appeared on the surface of the sun.

A second drought ended two years later when flares again streaked from the sun's surface.

The most striking historical evidence came in the 70 years that ended in 1715. In that time, there were almost no sunspots and no aurorae in the earth's atmosphere. The same period became known on earth as the Little Ice Age, when the coldest temperatures in the last 1,000 years were recorded in the Northern Hemisphere.

(Washington Post News Service)

## OBSERVE MANUALS (From Page 1)

learn how to use a telescope, and learn the techniques of systematic observation. The guides will be on sale at the February meeting for \$2.00 each.

## SPACE ANSWERS ARE NEAR SAYS DRAKE

Discovery of planets in other solar systems is a virtual certainty and detection of intelligent life elsewhere in the universe is a 50-50 chance by the year 2000, according to a noted astronomer. All that is needed is a reasonable application of effort by an "ensemble of astronomers and instruments" unexcelled in his-

tory, Frank Drake of Cornell University said at the weeklong meeting in Washington of the American Association for the Advancement of Science.

Drake said new observational equipment, including space-borne optical telescopes, has made it possible to answer in the next few years the first of two questions about the universe that laymen find most fascinating.

The questions are:

Do other stars, in addition to our sun, have planets? There is some evidence that at least one nearby star has a massive planetary companion, Drake said. The other question: "Is there intelligent life elsewhere?"

THE PRAIRIE ASTRONOMER  
c/o Prairie Astronomy Club, Inc.  
P.O. Box 80553  
Lincoln, Nebraska 68501

FIRST CLASS MAIL

Mr. Earl Moser  
Hickman,  
Nebraska 68372

9/78