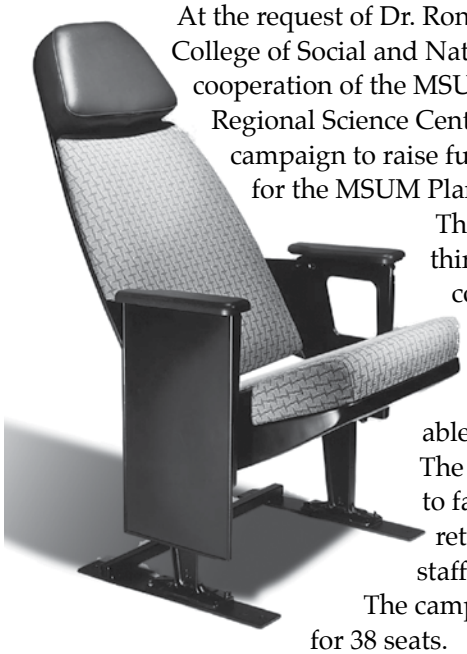
Spring 2007

Prairie Smoke

Vol. 22, No. 1

A Newsletter of the MSUM Regional Science Center

Planetarium Seat Campaign



At the request of Dr. Ron Jeppson, Dean of the College of Social and Natural Sciences, and in cooperation of the MSUM Alumni Foundation the Regional Science Center has been conducting a campaign to raise funds for seventy new seats for the MSUM Planetarium.

The current seats are over thirty five years old, are uncomfortable and not in good repair. We have a sample of the seat we have selected in our office available for anyone to test out. The campaign was directed to faculty and staff at MSUM, retired MSUM faculty and staff as well as RSC volunteers. The campaign raised funds to date for 38 seats.

The University has agreed to provide funds to bring the total seats up to seventy and has begun to plan for the remodeling of the Planetarium to include better access for persons confined to a wheelchair and provide for a light-trap door.

We are very pleased by the great response from the MSUM community, including our RSC volunteers, for their support of this project.

Summer at Buffalo River State Park

The Regional Science Center and Buffalo River State Park (BRSP) are joining together this summer to provide interpretive programs for park visitors from Memorial Day weekend to Labor Day weekend. Interpretive programs in the campgrounds are planned for most weekends.

Special requests by groups at BRSP will be referred to the Regional Science Center. We are excited to have the opportunity to provide park visitors a quality interpretive experience during their stay on the prairie.

Observatory Update

The computer that controls the telescope at the Paul P. Feder Observatory has mouse problems but not of the type that are normally associated with a computer. Some field mice came into the telescope control room and decided that the computer that controls the telescope was an interesting place to explore. The end result of their "exploring party" was the destruction of a computer card that is necessary for the operation of the telescope. The telescope cannot function manually; it only operates via computer control.

The calculations needed to control a telescope are relatively easy. A fairly simple hand-held calculator can do the math. The software that was installed in 1992 is not Windows-based. Now it would be advantageous to be able to operate the telescope with a Windows-based program. One computer can control the telescope, operate a user-friendly "planetarium" software package to show the sky, control the digital camera and process the images once they are taken.

The Regional Science Center is a part of the College of Natural and Social Sciences and our Dean, Dr. Ronald Jeppson, has approved a total of $10,000 to purchase a new computer and updated Windows-based software to operate the telescope. The system upgrade will be completed this summer.

Recycle and Reuse

In the spirit of recycling we ask that you consider donating items to the Science Center. We will put them to good use in our program.

- **Metal 1, 2 or 3 pound coffee cans** WITH the plastic covers.
- **National Geographic maps** (The maps that come with the magazine subscription)
- **Cross-country skiis** (any style bindings), **cross-country ski boots** (any size or style of binding), cross-country ski poles.
- **Aluminum cans** can be donated to Minnkota Recycling, 1321 1st Avenue North, Moorhead or 420 7th Street North, Fargo, with funds designated toward the Science Center's account.

Director's Fire

George Davis

What is the purpose of a science education for all educated people? I include in this question the science studied as part of a K-12 education as well as the science studied in educational programs beyond high school. At MSUM, that would include the science studied as part of the general education program, which is now called the Dragon Core.

I have found at least two answers to this question. One answer found in the current discussion in state and national political circles declares that Minnesota and the U.S. needs more people to major in "STEM" (Science-Technology-Engineering-Mathematics) programs at two-year and four-year schools of higher education. The issue is that government and business are in need of more people ready to enter the STEM workforce.

The reason given is that the future prosperity of our state and nation will be based on our ability to compete in a world economy. To compete well will require that we have a sufficient number of people prepared to work in the STEM-based jobs our economy is creating. This point of view is strongly held by most state governors, state legislatures, members of Congress, federal agency heads, and our President.

The second purpose of a science education for all educated people is the need to understand concepts of science that equip all of us to comprehend science-based issues such as global climate change, a possible bird flu epidemic, the potential for use of embryonic stem cells to cure human illness, or the effect of habitat loss on animal populations.

The basic science behind all these issues is found in a half dozen science courses. The problem is that most educated people don't take sufficient science courses in high school or college to gain the broad set of concepts needed to understand the science-based issues they encounter during their lifetimes. Global climate change is an example of a science-based issue. To fully understand this issue, you would need to study concepts found in separate courses in biology, chemistry, physics and earth science. You would not need to study all the concepts in each course, just a part of it.

Why does it take so many courses to study the science behind one issue? The reason for this is that most science courses have not been organized for this purpose, but are narrowly focused to prepare students for discipline-based majors in science.

This dilemma is compounded by the fact that most high school and college science teachers are educated by majoring in specific science disciplines and do not have a sufficient preparation in science to address the broad-ranging concepts behind such complex issues.

The challenge before us is to offer science concepts packaged in courses that prepare both STEM majors, and equip all graduates with the science education they need to understand the issues that will be a part of their life.

Photographer: Darel Paulson

8th grade students from West Fargo collect data from the Buffalo River at the Regional Science Center's Buffalo River Site in May.

Photographer: Darel Paulson

Moorhead 2nd grade students study the planets and stars at the MSUM Planetarium in April.

Tim Buer, Longtime Student Employee Graduates

My experience at the Regional Science Center has included a wide variety of activities. I have volunteered and worked at the Science Center for nearly 4 years. Through these years I have had the opportunity to lead the students through several activities, my favorite has been nature hikes. During these hikes we visit several ecosystems that can be found at the Science Center and make observations about the plants and animals found there by smelling, feeling, listening and touching many things along the way. Some of the other activities I have guided include the compass course, bear and bison activities as well as assisted with public events such as Fall Fantasy and open houses. I will graduate in May 2007 with a Life Science Education degree, so working with children of various ages has been very beneficial to me. The children are very excited and very enthusiastic to visit the Science Center which makes it a pleasant experience to be working with these young minds.

After graduation I will seek a science teaching position hopefully close to the area. Tony as well as the other volunteers at the Science Center are very accomplished and knowledgeable and work very well with children and I feel that I have learned several beneficial strategies that will be useful in my teaching career. The Science Center is also a great resource for teachers to bring their students, and I feel fortunate to have had the opportunity to work with so many wonderful children through the years. College students who are pursuing a degree in education should take advantage of this prime opportunity to work with great young children.

Dave Weinrich Receives Amateur Astronomer Award

The 2007 North Central Region Astronomical League (NCRAL) meeting was hosted May 18 and 19th by the Fargo Moorhead Astronomy Club. Forty Astronomical League members from Illinois, Iowa, Minnesota, North Dakota and Wisconsin gathered at the Moorhead Days Inn for astronomical talks by Dr. Russ Colson (MSU Moorhead), Dr. Michael Gafferty (UND), Dr. Tim Young (UND) and Lyndon Anderson. Attendees also visited the Fargo Air Museum, and the Regional Science Center's Planetarium and Buffalo River Site.

Several awards were presented at the Saturday night banquet. The NCRAL Distinguished Service Award was presented to Dr. Carl Wenning (Univ. of Illinois-Urbana/Champaign). MSU Moorhead's Planetarium Coordinator, Dave Weinrich, was presented with the 2006 North Dakota Distinguished Amateur Astronomer Award for his commitment to the advancement and sustainability of the hobby of amateur astronomy.

Spring Speaker: Stan Tekiela, Photographer, Naturalist

Each year the MSUM Regional Science Center has sponsored a series of speakers to present programs on topics related to observational astronomy and the natural history of the region. These programs are for our volunteers; MSUM faculty, staff and students; as well as the general public.

On March 19-20, 2007 the Regional Science Center, the MSUM Art Department, and the MSUM Mass Communication Department cosponsored Stan Tekiela from Victoria, MN as our spring speaker on natural history. Stan is a professional naturalist and nature photographer with over 100 books and field guides published. Don Clark from the Art Department and Wayne Gudmundson from the Mass Communications Department both teach photography courses. They invited Stan to conduct critique sessions for their photography students as well as talk to their classes. In addition, Stan held a session on wildlife photography for a group of interested biology students.

On the evening of March 20th Stan attended one of our annual volunteer dinners and then gave an illustrated public lecture titled, Uncommon Facts about Common Birds. Over 85 people attended the lecture.

We are already planning for a series of presentations on topics of observational astronomy or natural history for 2007-2008. Please contact us at 218-477-2904 or davisg@mnstate.edu if you have any suggestions of speakers or ideas for specific topics you would like to hear.

Volunteers needed for 2007 Bird Banding season

The Regional Science Center's participation in the Mapping Avian Productivity and Survivorship (MAPS) program concluded its seventh season of data collection in 2006. We are excited to continue doing this valuable research and have selected the 2007 bird banding dates, so mark your calendars:

June 2, Saturday June 14, Thursday June 23, Saturday
July 5, Thursday July 14, Saturday July 26, Thursday
August 4, Saturday

We need volunteers to help with setting up, taking down and maintaining equipment, recording data, extracting birds from nets and keeping the crew of banders from becoming malnourished.

Bird banding sessions begin at sunrise and continue for six hours. If early mornings are not your cup of tea, we plan to set up some of the nets the afternoon prior to banding. If you are interested in volunteering during the 2007 bird banding season, please contact us at 218-477-2904.

July

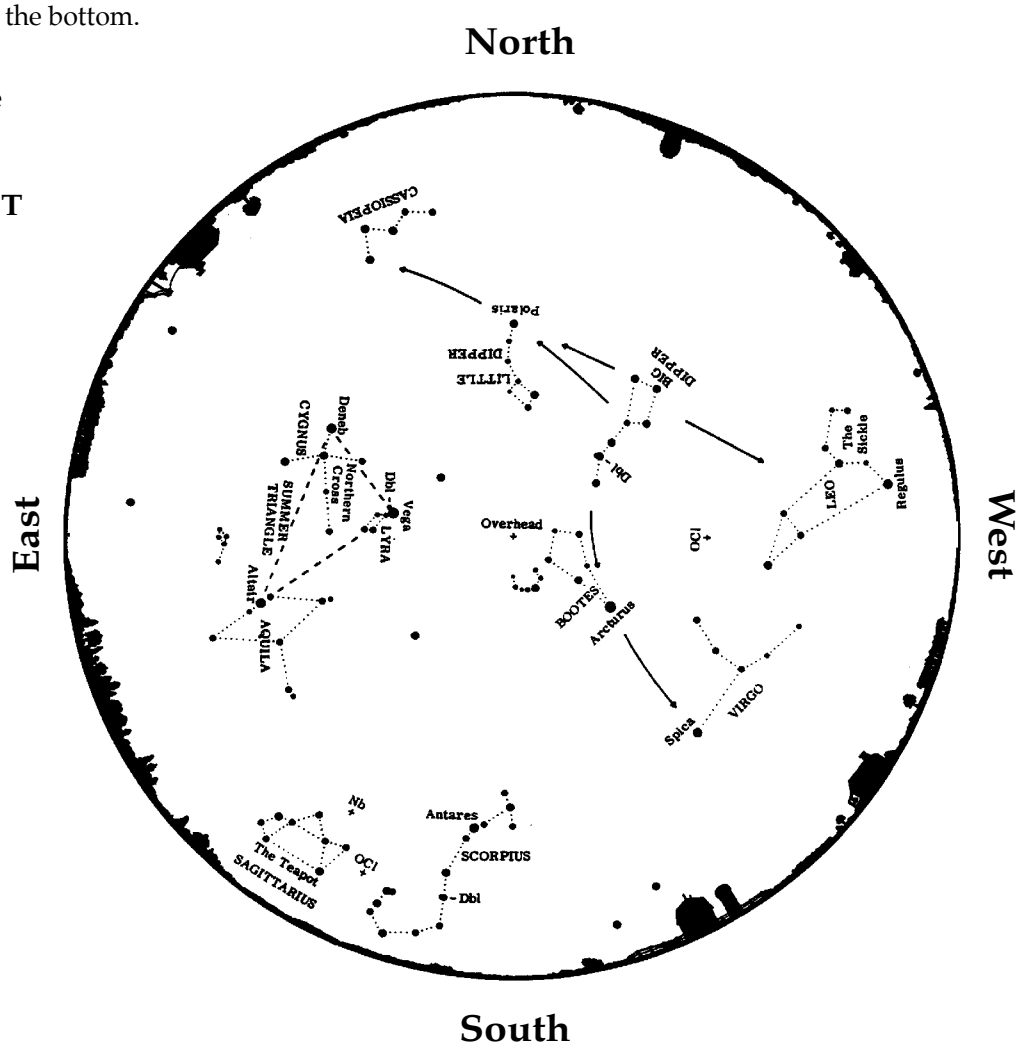
Red River Skies

Produced by the MSUM Planetarium

Directions:
Hold Chart vertically and turn it so that the direction you are facing is at the bottom.

This chart represents the sky at the following times:

Mid June	**Midnight CDT**
late June	**11p.m. CDT**
Mid July	**10 p.m. CDT**
Late July	**9 p.m. CDT**



June

Mercury-low in NW early in month.
Venus-high in NW at sunset. Sets 3 hours later.
Mars-rises 3 hrs before Sun in the E.
Jupiter-low in SE at sunset. Due S at midnight. Sets at dawn.
Saturn-high in WSW at sunset. Sets by midnight.

July

Mercury-low in NE at dawn mid to late month.
Venus-sets shortly after sunset in NW
Mars-rises in E at 1 am
Jupiter-due S at sunset
Saturn-sets NW shortly after sunset.

August

Mercury-low in NW dawn early in month.
Venus-visible end of month due E at dawn.
Mars-rises NE about midnight.
Jupiter-SSW at sunset. Sets by 1 am.
Saturn-not visible.

September

Mercury-not easily visible.
Venus-rises at 4 am in E.
Mars-rises NE at 11 pm. Due S at dawn.
Jupiter-in SW at dusk. Sets by 11 pm
Saturn-low in NE at sunrise.

October

Mercury-low in SE at dawn end of month.
Venus-rises at 3 am in SE
Mars-rises at 10 pm in NE. Due S at 6 am.
Jupiter-low in SW at sunset. Sets at 9 pm.
Saturn-rises in NE at 3 am

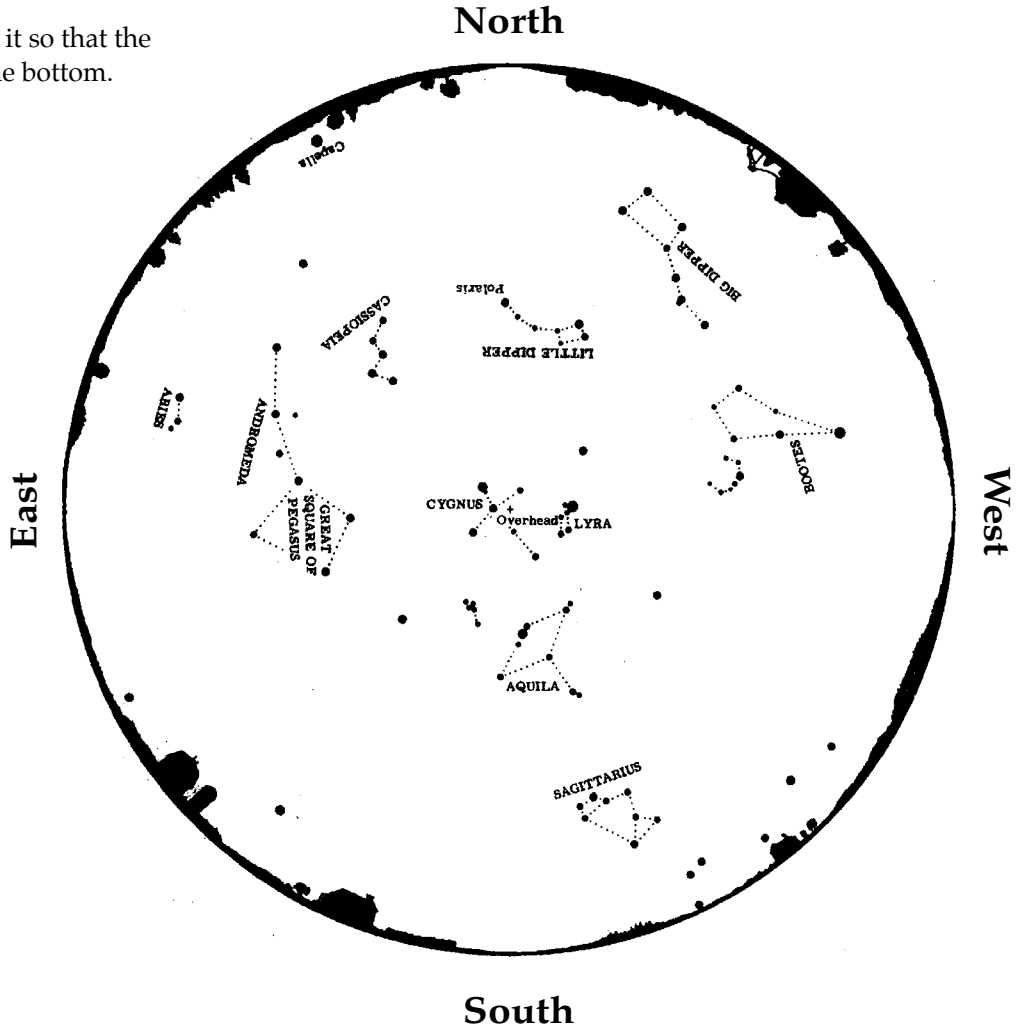
Minnesota State University Moorhead is an equal opportunity educator and employer and is a member of the Minnesota State Colleges and Universities system. This information will be made available in alternate format, such as Braille, large print or audio cassette tape upon request by contacting Disability Services at 218.477.5859 (voice) or 1.800.627.3529 (MRS/TTY).

September

Red River Skies

Produced by the MSUM Planetarium

Directions:
Hold Chart vertically and turn it so that the direction you are facing is at the bottom.



This chart represents the sky at the following times:

Late August	**11p.m. CDT**
Early Sept.	**10 p.m. CDT**
Mid Sept.	**9 p.m. CDT**
Early Oct.	**8 p.m. CDT**

June

1 Jupiter 6° N of Moon
5 Jupiter opposite Sun, up all night
8 Last Quarter Moon
10 Mars 5° S of Moon
14 New Moon
18 Venus 0.6° S of Moon
19 Saturn 0.4° S of Moon
21 Summer begins at 1:06 pm CDT
22 First Quarter Moon
28 Antares 0.5° N of Moon
Jupiter 6° N of Moon
30 Full Moon

July

1 Venus 0.8° S of Saturn
6 Earth farthest from Sun
7 Last Quarter Moon
9 Mars 6° S of Moon
12 Venus at greatest brilliancy
Mercury 9° S of Moon
14 New Moon
16 Saturn 2.5° N of Moon
17 Venus 3° S of Moon
20 Mercury greatest W of Sun in morning
22 First Quarter Moon
29 Full Moon

August

5 Last Quarter Moon
6 Mars 6° S of Moon
11 Perseid meteor shower
12 New Moon
Perseid meteor shower
13 Perseid meteor shower
20 First Quarter Moon
21 Jupiter 6° N of Moon
23 Mars 5° N of Aldebaran
28 Full Moon
Total Lunar Eclipse starts at 4:52 am

September

3 Last Quarter Moon
4 Mars 6° S of Moon
8 Venus 9° S of Moon
9 Saturn 0.8° N of Moon
11 New Moon
13 Mercury 2° of Moon
18 Antares 0.7° N of Moon
Jupiter 6° N of Moon
19 First Quarter Moon
23 Fall starts at 4:51 am CDT
26 Full Moon, Harvest Moon

October

2 Mars 5° of Moon
3 Last Quarter Moon
6 Venus 3° S of Moon
7 Saturn 1.3° N of Moon
9 Venus 3° S of Regulus
11 New Moon
15 Venus 3° S of Saturn
Antares 0.5° N of Moon
16 Jupiter 5° N of Moon
19 First Quarter Moon
21 Orionid meteor shower
22 Orionid meteor shower
25 Full Moon
28 Venus farthest W of Sun in morning
30 Mars 3° S of Moon

MSUM Regional Science Center

Director..... Dr. George Davis
Program Instructor..... Anthony Bormann
Planetarium Coordinator ..... David Weinrich
Secretary..... .....Debra Lien

www.mnstate.edu/regsci

On the Fire Line

For information and reservations, call the MSUM Regional Science Center office at (218) 477-2904.

The Buffalo River Site is located just off Highway 10, 15 miles east of Moorhead, adjacent to the Buffalo River State Park. The hiking trails are open to the public from 6 am-11 pm daily for birding and hiking. The interpretive center is also open for scheduled public programs and by special request. For information on special group activities, call the office at 218-477-2904.

The Planetarium is located on 11th Street South, in Bridges Hall, Room 167, on the Minnesota State University Moorhead campus. General Admission is $3.00; children 12 years of age and under, senior citizens and Tri-College students are admitted for $1.50. For information, or to schedule a group show, call 218-477-2920.

AT THE PLANETARIUM.....

July 5-26
Our Moon
Thursdays at 7 pm
The Full Moons of summer ride low in the sky. They often appear larger than the Full Moon at other times of the year. Come and learn more about our closest neighbor-its phases, features and lore and learn how to use a star map to identify summer stars and constellations.

July 19
Our Moon Planetarium Event
Thursday, Planetarium program at 7 pm, telescope viewing 8-9 pm
A special telescope viewing of the summer Moon will be held in conjunction with the July 19 planetarium show. Guests are invited to see "Our Moon" in the planetarium first, and then join the volunteers and staff on the MSUM campus where telescopes will be set up to enjoy the Moon in its summer splendor. Regular admission prices will be charged for entrance to the Planetarium, but the telescope viewing will be free. If it is too cloudy to view the outdoor sky, the interpretation program will not be held.

August 2-16
Catch a Falling Star
Thursdays at 7 pm
The summer is one of the best times of the year to catch a "falling star." There are several meteor showers that occur during July and August. But you don't need an umbrella to observe them! Come and learn more about these fascinating objects. Perhaps you will even get to hold a real "shooting star!"

September 16-November 12
Hotter Than Blue
Sundays at 2 pm and Mondays at 7 pm
Blue light has the highest energy of any color visible to the human eye. But once we get into the higher energies there are exotic forms of radiation—ultraviolet, x-rays and gamma rays. How do we detect these energies and what do they tell us about the astronomical objects that emit them?

November 29-December 20
Star of Bethlehem
Sundays at 2 pm and 7 pm, Mondays, Thursdays and Saturdays at 7 pm
Look at the mysteries surrounding one of the most famous celestial events in history. Was it a comet? A supernova? A triple conjunction of the planets Jupiter and Saturn? Or was it a miracle? Whatever it was, the event reached through the centuries and changed the lives of people all over the world. The program also examines the stars and constellations of the brilliant winter sky.

AT THE BUFFALO RIVER SITE....

June 1
Planets on Parade
Friday, 9-11 pm
Four bright planets--Mercury, Venus, Jupiter and Saturn--adorn the dusk sky in early June. Come and learn more about the planets and how to observe them this summer. Take a tour of the night sky with a star map. Telescopes will be set up to view planets and other deep sky wonders.

June 3
Interpretive Center Open House
Sunday, 2-4 pm
Help us celebrate the summer season as we join with our neighbor, Buffalo River State Park, to introduce you to our shared front yard, the Tallgrass Prairie. This open house program coincides with Minnesota State Park's Sunday open house. Tour our interpretive center's exhibits to learn more about a local natural resource, the prairie. A guided trail hike to Buffalo River State Park's picnic area begins at 2:30 pm.

July 14
Bird Banding Open House
Saturday 8-10 am
Wake up early, grab your mosquito spray and check out our bird banding program. The Science Center's participation in the Mapping Avian Productivity and Survivorship

Continued next page

Blazing Stars

Dedicated to the recognition of individuals and/or organizations for their stellar contributions to the Science Center.

Dedicated volunteers are essential to a successful program. We wish to recognize those volunteers who generously contributed their time to the Science Center since the last issue of Prairie Smoke.

Volunteer Leadership Council

Astronomy Programs
Elizabeth Christian
Theresa Nygaard
Paul Seifert

Bird Programs
Roy Frydenlund
Laurie Landa
Alison Wallace

Natural History Programs
Bob Kloubec
Cathi Koenig
Rose-Mary Strom
Sheri Mertz Wien

Bird Programs

****FeederWatch:**
Helen Belland
Renae Hirsch
Gladys Johnson
Barry Kutzer
Jean Prentice
Don Strom
Rose-Mary Strom

Natural History Programs

****Instructors**
Tom Collins

■ Fire Line from page 6

(MAPS) bird banding program is in its 8th year. We will start with a tour of our Interpretive Center's Bird Observatory, an introduction to MAPS and then it's off to observe our citizen scientists at work as captured birds are identified, aged, sexed, banded and released.

August 10
Star Party on the Prairie
Friday 9-11 pm
We're having a star party on the prairie and you are invited. Come and have the beautiful summer sky interpreted for you. Learn how to find the constellations. See the Milky Way, nebulae and star clusters through our telescopes. Perhaps we will see some meteors. Bring your own binoculars or telescope, if you wish, and enjoy the prairie at night. If it is cloudy we will have a short indoor presentation at 9 p.m.

August 12
Interpretive Center Open House
Sunday 2-4 pm
Come to Regional Science Center's Buffalo River Site for some hands-on learning about Minnesota's native prairie grasses and wildflowers. Enjoy a peaceful hour picking seed for the center's prairie restoration program. You'll learn why the prairie ecosystem is important and help to improve the center's prairie. Be prepared to walk over uneven ground.

October 4
Fall Fantasy
Thursday 7-9 pm
Local animals will be the topics at campfires on the trails of the Buffalo River Site. Guests will walk through the woods stopping to enjoy interpretive dramatizations about local wildlife. If the skies are clear, telescopes will be set up to view the autumn sky. The event is free, children must be accompanied by an adult.

Skyline

Have you ever noticed a bright object in the sky and wondered what it might be? Or perhaps you want to find out what the phase of the moon is. The MSUM Regional Science Center can help you answer these questions. Just call our skyline at 218-477-2978. This recording is updated weekly, giving information to keep you up to date about celestial events over the Red River Valley.

Visit Our Gift Shop

Gift Shop items are available for sale at the Science Center Centennial House office, on the corner of 11th Street and 7th Avenue South, Moorhead, or at the Buffalo River Site interpretive center during scheduled public events.

Sweatshirts:

M, L, XL	$32
XXL	$33

T-Shirts:

M, L, XL	$16
XXL	$17

The Birding Guide to the Fargo-Moorhead Area is available at the MSUM Bookstore, the Concordia Bookstore, the Varsity Mart at NDSU, Barnes and Noble in Fargo, and Critters Feed and Seed in Moorhead. The cost is $14.95. You can order by telephone at 218-477-2111.

Donation Form - Your donation may be tax-deductible

"Yes, I want to support the MSUM Regional Science Center's continuing science education programs by becoming a Friend of the Center." Please check your annual membership and return this form to the MSUM Regional Science Center, Box 118, Moorhead, MN 56563. Please make check payable to the MSUM Foundation/Friends Program.

☐Individual	$25	☐Family	$40	☐Contributor	$100
☐Patron	$250	☐Benefactor	$500	☐Sponsor	$1000

Name _____ Telephone _____

Address _____

City/State/ZIP _____

Signature _____ Date _____

Friends of the MSUM Regional Science Center Program

We are very pleased with the ongoing response to our Friends of the MSUM Regional Science Center program. Please consider a contribution to the Science Center. The Regional Science Center relies on the support of our Friends to provide us with the resources to provide quality programming to over 23,000 persons each year. Below is a list of Science Center Friends:

Individual
Jolene Beckman-Sternhagen and Fred Sternhagen, in honor of Irv and Hazel Houkum's 25th wedding anniversary
Helen Belland
Hugh Cowan
D.J. and Ardith DuBord
Jim Ellingson
David and Juneve Givers
Gregory Hanson
Howard Hanson
Karen Klingler
Doug and Laura Munski
Donna Nelson
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Nancy Parlin
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