

The Denver

OBSERVER

Newsletter of the Denver Astronomical Society
One Mile Nearer the Stars

Image copyright 2006 Craig Anderson



A Weighty Object

Named for its shape, the Dumbbell Nebula (M27) in Vulpecula is a planetary nebula with a diameter of about three light-years. Craig Anderson captured this LRGB image at the EGK Dark Site on June 2, 2006 with an SBIG ST-2000XM CCD camera through an AP155 f/7 refractor. Exposure times were 30 minutes of Luminance binned 1x1, 30 minutes of red binned 2x2, and 15 minutes of green and blue binned 2x2.

SKY JAMMIN' IN JULY

Inside The Observer

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J U L Y S K I E S

While Jupiter dominates the July night sky, three other planets make appearances. Mercury, Mars and Saturn are still visible in the western sky, but all three fade from view not long after sunset. The first terrestrial planet from the Sun will be very difficult to find due to its low altitude in the west, the high mountains and the possibility of cloud cover. For those interested, look for Mercury 9° below Saturn. The highlight of Saturn is, of course, its rings. The two most visible rings, A & B,

- 3 First quarter moon
- 10 Full moon (Thunder or Hay Moon)
- 17 Last quarter moon
- 25 New moon (conjunction)
- 28 Delta Aquarid meteor shower
- 30 Alpha Capricornid meteor shower

are separated by the darker Cassini division. The globe of Saturn has belts and zones running east-west, but they are less noticeable than those of Jupiter. Observers will not have much time for their eyes to dark adapt before it fades from view in the west. By month's end, Saturn will no longer be visible, setting with the Sun. While visible, it will shine at *mvis* of 0.4.

Mars will also be low in the west at a magnitude of 1.8, which is the faintest it will ever get. While the angular diameter and magnitude of Mars are both small, observers should note that on the 22nd, the Red planet has a close encounter with Regulus, the blue-white star that is the heart of Leo. Can someone explain why this is not a conjunction? While

Continued on page 2

President's Corner

It's July and time for the annual picnic. This picnic corresponds with July's Open House, featuring "Jupiter Madness." Early the next morning two moons of Uranus will occult each other. This makes for some great fun and some interesting science all in one day. I've been asked by some new members about ways to gain an orientation to the sky and to how to use telescopes for observing. A list of games has been developed that teach constellations and gives orientation to various types of telescopes. There is no better time to try some out than a picnic!

So far this year, we've looked at Chamberlin and the emphasis that DAS puts on outreach activities. We've taken a look at the Dark Sky site and its role with observing and members. We received some very good DSS input—making us take a good look at planning for that site.

This summer we can take a little time to focus on ourselves, and our observing and science programs. We are developing a science program that is centered at Chamberlin to start with, that will allow members to learn techniques that can be put to use in our own backyards.



Wayne Green, president of the Denver Astronomical Society.

We are saying farewell to a long time member, a past board member, committee member, public night scope operator, lecturer, telescope maker, Vice President, President, and past President. This one person will leave at least nine holes behind her! I'm talking about Carla Swartz of course, and her move to LA. We can never say goodbye to Carla, it would take too long to tell her how much we appreciated all that she did for us. So, we will simply wish her well, and tell her to visit often!—Wayne Green

DAS Schedule

JULY

- 1 DAS Annual Picnic (begins at 4:00 P.M.) and Open House at Chamberlin Observatory (Begins at 7:30 P.M.)
- 7 General Meeting at D.U.'s Olin Hall (7:30 P.M.)
- 14 E-Board meeting at Chamberlin Observatory (8 P.M.)
- 20-23 Weekend Under the Stars
- 22-23 EGK Dark Site Weekend

AUGUST

- 5 Open House at Chamberlin Observatory (Begins at 7:30 P.M.)
- 11 General Meeting at D.U.'s Olin Hall (7:30 P.M.)
- 18 E-Board meeting at Chamberlin Observatory (8 P.M.)
- 26-27 EGK Dark Site Weekend

Public nights are held every Tuesday and Thursday evenings beginning at the following times: October 1 - March 31 at 7:00 P.M.
 April 1 - September 30 at 8:30 P.M. at Chamberlin Observatory
 Costs to non-members are: \$3.00 adults, \$2.00 children.
 Please call (303) 871-5172 for reservations.

DAS Officers

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 (720) 217-5707

The Observer is available in color PDF format from the DAS website.

The Executive Board conducts the business of the DAS at 8 P.M. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.

the das . org

A General Meeting Not to Be Missed: Bryan White's "Nitescapes 3-D Slides of Aurora, Comets and Other Phenomena"

Bryan will be showing two trays of slides at the general meeting at 7:30 P.M. on Friday, July 7. One of them will include his revised "greatest hits" slides of comets, meteors and other astronomical phenomena. The other will be totally new aurora borealis photos from Yellowknife, Canada. To create his wonderful 3-dimensional slides Bryan uses two Olympus OM 2N's mounted on a Stereo Bar. He currently uses Fuji Provia 400 slide film which is pushed to 800 or 1600 depending upon what he is shooting.

Bryan's presentations are viewed with 3-D glasses and are accompanied by space music by John Serrie and other composers.

Bryan's interest in astronomy coincided with the discovery of Comet Mrkos, which he and his father viewed the night before astronomers announced their findings to the public. His family lived on an 80-acre farm in Michigan at the time.

He remembers devouring *Sky & Telescope* and any astronomy book he could get his hands on. As he developed his astronomical skills, he began taking pic-

Annual DAS Picnic, Potluck



Cook up a favorite recipe and share it with other DAS members at the Annual DAS Picnic and Potluck. The fun begins at 4:00 P.M. and doesn't end until after the monthly Open House.



Don't miss Bryan White's 3-D presentation of Aurora displays at the July 7 General Meeting.
Image copyright Bryan White

tures of comets, stars and the aurora borealis (the northern lights).

This pursuit has led him to the far northern territories of Canada, to southern Florida and many places in between to photograph, in three-dimensional glory, the wonders of the night sky.

July Skies

Continued from page 1

both will be low in the western horizon, binoculars or telescopes should show the contrasting colors, even for someone like me, whose color perception is slightly deficient.

On the brighter side of the magnitude scale, Jupiter will shine at $m_{\text{vis}} -2.2$ in the southwest sky at nightfall. However, it starts setting after midnight by month's end. When viewing Jupiter, observe the four Galilean moons and remember that the four moons are so bright that if Jupiter were removed from view, the four moons would be visible to the naked eye. As for the Jovian giant, look for the belts and zones encircling the planet. Both *Astronomy* and *Sky*

He is now devoted to presenting his work to the curious. As founder and president of "Nitescapes 3-D," he currently exhibits his work across Colorado, as well as staying on top of his "Nitescapes" publishing venture.

DAS General Meetings are held on the first floor of Olin Hall, on the DU Campus. They are open to all with an interest in astronomy and space science.

& Telescope magazines will provide you the orbits of Jupiter's four brightest moons.

In addition to this quartet of planets, the crescent moon will pass through the Pleiades star cluster on July 20.

To get a great view of the planets, stars, and other celestial objects, visit the Denver Astronomical Society's Open House at sunset following the annual picnic on Saturday, July 1 at the University of Denver's Historic Chamberlin Observatory. Remember that members of the Denver Astronomical Society have free access to the Clark 20-inch at Chamberlin Observatory during Open House. —Ron Mickle

u p d a t e s

Mr. Public Night

Fran Omar 1914-2005

Dave Tondreau worked with Fran Omar for several years at Chamberlin Observatory hosting public nights and wanted to share his personal memories with us:

I worked with Fran Omar in the early and mid 80s on getting the Chamberlin Observatory on the National Registry of Historic Places and Public Night. He was a dapper old gent then, and that's the way I will always remember him.

Fran worked the Public Night program for a quarter of a century. In fact he was *the* Public Night program for many years. He carried on Dr. Recht's public outreach program. He was among the founding fathers of the DAS and one of the last links to those days.

Fran loved the observatory and he took great pride in it. He looked after the observatory, and yes, Fran did windows and floors. There wasn't much he did not know about the telescope. I remember we got together with him to go over how to maintain the telescope. He was the only one that knew!

I did not know about Fran's life outside

the observatory, but he had to be in his element on Public Night. I always enjoyed watching Fran in operation—he was simply a delight. His rapport with the public and particularly children was magical. There is no other way to explain it. Fran was as much a part of the Public Night experience as the telescope. I am sure thousands of visitors felt the same way.

Fran was also a contributor to the International Geophysical Year or IGY through Project Moonwatch. Project Moonwatch was composed of teams of observers with optically tracked satellites (including Russian) in the mid 50s and early 60s. The DAS had a very active and nationally recognized program. Fran received recognition from the Smithsonian Astrophysical Observatory and was featured in two Denver Post articles.

Fran's was a quiet dedication, characteristic of his, the greatest, generation. He was and will always remain a significant part of the observatory's public outreach legacy.

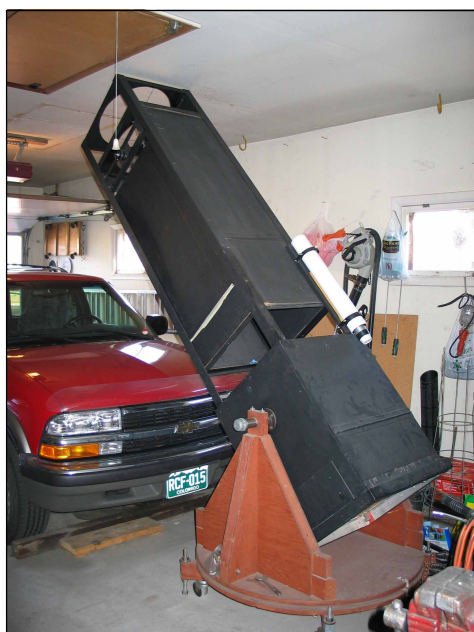
Fran's unanticipated passing was a blow. My only solace; knowing Fran's spirit is alive and well in many of us. Just look at a child as he or she looks through a telescope for the first time, and if you see the ghost of a dapper old gent present, it's probably Fran.—*Dave Tondreau*

The third eldest of nine children, Fran was born and raised in Iowa on the banks of the Mississippi River. In 1940, he graduated with a degree in electrical engineering from the University of Iowa. During World War II, he was an officer in the Army and assisted in the construction of the Alaskan Highway. He continued his service in Europe as a transportation officer in Paris and saw more of the continent than most generals.

Soon after the war, Fran was asked by a doctor and his friends to serve as their guide through the City of Lights. Unbeknownst



Top Image: At a public viewing of Venus in 1980, Fran Omar shares the Alvan Clark 20-inch telescope with Chamberlin visitors. Lower left image: Fran's telescope.



to Fran, his acceptance of their request would lead him to his future wife, Marian.

Serving as a nurse in Germany, Marian used a three-day pass to travel to Paris with a fellow nurse. After spending several days together, Fran and Marian made a bet as to who would get back to the states first. Fran asked Marian to call his sister when she arrived stateside to let her know that he would be home soon. Marian found passage on a hospital ship to England and continued on to the States. As promised, Marian called Fran's sister when she returned home only to discover that Fran had already arrived. Shortly thereafter, Fran and Marian married.

Fran's first trip to Colorado was an exciting one. On a vacation in Denver to visit friends, he fell in love with Colorado's crystal clear skies. Marian also had an affinity for the state as she was raised in Colorado Springs until she was seven. Her family then moved to Indiana, but Marian never forgot the Rockies and always



wanted to see Colorado again. She and Fran made the decision to move to Denver, and Fran traveled back to Chicago to ask his employer, the Bell system, for a transfer. Fran and Marian raised their two daughters in Denver and their family has grown to include four grandchildren and six great-grand children.

Marian remembers Fran grinding his mirror in their basement. She thought he must have walked miles around the barrel, but he always enjoyed the process. In order to learn more about Fran's love for astronomy, Marian took Dr. Recht's "Astronomy for the Jones'" course and enjoyed it very much. Cody, one of their great-grandsons just got his first telescope and Marian is happy that the family's love of astronomy is continuing with future generations.

Fran was well known for keeping the neighborhood children apprised of what was happening in the night sky. He would constantly wheel his large telescope out into the driveway to let them explore the stars and planets. During his memorial service, a ten year-old neighborhood girl spoke of Fran, and how much she appreciated his willingness to share his love of astronomy with her.

Jack Eastman has very fond memories of Fran and remembers his respect for Chamberlin and the great care he took to keep and protect the observatory. Dan Wray believes that the mirror grinding machine in the old coal bin was built by Fran in the 1950's and then donated to the DAS. Fran's legacy of teaching and his commitment to donate his time and effort so others might develop their own interest in astronomy serves as an inspiration to all of us.—*Carla Swartz*

Special thanks to Marian Omar for her time and thoughts about this special man, her beloved husband.

The IGY Gets a 50- Year Sequel

by *Dave Tondreau*

For those of us who were around (I was in the third grade) well remember the IGY or International Geophysical Year. It was an unprecedented world wide collaborative scientific effort with many numerous accomplishments. Perhaps its most lasting legacy is Antarctica, the only continent where military weapons are banned by international treaty.

1957 was the year of Sputnik, an event burned into our collective minds as much as the Kennedy assassination. The Smithsonian Astrophysical Observatory was assigned the responsibility of leading an optical tracking program for the satellites launched as part of IGY. SAO Director, Fred Whipple, and astronomer J. Allen Hynek developed a concept which would use two separate but coordinated groups—one to acquire or "find" the satellite, and another to perform precision tracking. Tracking would be accomplished by a worldwide network of twelve large aperture Baker-Nunn cameras operated by professionals. Acquisition would be the responsibility of the group to be known as Project Moonwatch. A "Moonwatch" division was established at SAO, and astronomer Armand Spitz was named as its Director. At the time, little was known about the upper atmosphere other than what had been learned from brief probings using sounding rockets, so the overall SAO optical tracking program would be crucial to the effort to predict the satellite orbits, and to obtaining a better understanding of the physics of the atmosphere.

Both the scientific community and the public were charged with the excitement of space exploration—a new and exciting endeavor that was also open to interested



The Terre Haute Astronomical Society Moonwatch station at Allis-Chalmers circa 1959. The telescopes are pointed at mirrors set at 45 degrees to view the sky through openings in the roof. Various charts and graphs are on the tables in front of the observers. This arrangement made for comfortable viewing.

amateurs through Project Moonwatch—and the DAS was a part of it.

The enthusiasm of amateur star-gazers over the opportunity to have a part in an important scientific venture impressed the government. Here was a simple way of widening public interest in the IGY both at home and abroad. Doors were open to amateur participation. In early 1956 the Moonwatch teams were authorized. Fred Whipple agreed to draft instructions for Moonwatch teams.

Methods of tracking satellites had to be invented along with methods for launching them. There are two basic ways to track satellites: active and passive. Active tracking uses a radio transmitter on the spacecraft. This was the purpose of the famous Sputnik beep. Ground receivers can triangulate on the radio signal to get direction and range. The problem with radio tracking, especially with early satellites, is that eventually the batteries powering the radio would fail. Also, radio tracking doesn't work for boosters or other objects that aren't equipped with radios. Moonwatch observers used small telescopes to spot satellites. Observers measured the position of the satellite and its time of passage. Such observations were not very precise, but the sta-

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o b s e r v e r s d e c k

To Build or Not To Build?

by Wayne Kaaz

Several discussions have taken place regarding proposed new work at the E.G.Kline Dark Site. There are some limits to our building location. There is a building set back from the road of 100 feet. If we build inside farther than 150 feet, the DAS can avoid having to provide a 20-foot wide gravel road to the buildings. Here are some more of the ideas in the pot at this time.

1. Install either a 12x16 ft. TuffShed or a 20-foot long shipping container at the south end of the site just below the main entrance gate. Either one will require some work for the footings. TuffShed will provide drawings for the County Building Department and will install the structure on footings the DAS provides. The cost of the structure on our footings with floor is about \$3,900, with an additional \$2.00 per mile over 30 miles distance from the purchasing store and \$5.00 per mile-traveled off-highway. To build the shed our-

selves, the basic cost is about \$2,100 plus the delivery charge. The cost for the shipping container will be about \$2,000.00. The options will be discussed at the next DSS Committee meeting on June 16th.

2. Provide electrical power at the south end. This will require a building, as IREA (the service provider) mandates a structure for the service. Output size and other requirements will have to be formulated. The cost for this is about \$3,000.

3. Provide more pads for separate scopes. The concrete pad idea has run into some objections, so Joe Gafford and Wayne Green have suggested alternate solutions to be discussed at the next meeting of the DSS Committee.

A main structure will be built to house the DAS' 17.5" Dobsonian that is currently in my garage. The DAS also has two other telescopes, their disposition to be decided on soon. I will keep the Club posted on happenings at the Dark Site.



Bryce MacArthur (three years old) makes his first trip to the EGK Dark Site with his dad, Bob. Bob is a frequent visitor to the site and took the star trail photo below with a Canon Rebel 2000 EOS camera with a 28-90mm lens at f/5.6 for 15 minutes on May 27, 2006.

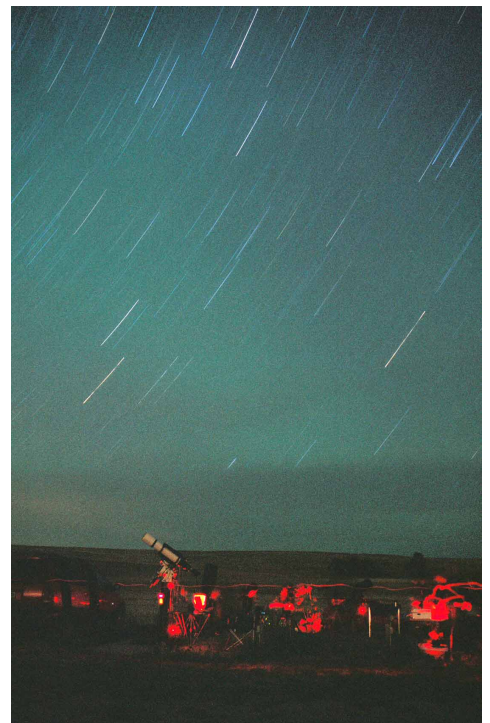
IGY Gets a Sequel

Continued from page 5

tions were inexpensive to set up and operate. Many observations from many different stations could make up for the lack of precision. During the months leading up to the expected launch of the U.S. Vanguard satellite, Moonwatch teams refined their observing techniques, practicing on high altitude aircraft that were flown for this purpose. After the surprise launch of Sputnik by the Soviet Union in October 1957, the Moonwatch teams were ready and were called into action. An Electronic Geophysical Year (eGY) is planned for 2007-2008 as a 50-year sequel to the highly successful International Geophysical Year. The central objective is to bring the management of geoscientific information

worldwide into the 21st century through an e-Science approach and the development of virtual observatories. The challenge in 1957-58 was to acquire and make available to the world community the observational data required to build a comprehensive understanding of the Earth and its processes. That challenge remains and is yet more pressing because of the growing demands we place on our natural resources and environment.

For those interested in researching the IGY, I suggest starting with the Internet, *National Geographic* and the *Sky & Telescopes* of the era. (This article was a compilation of text from several sites). And if you run across a Unitron moonwatch telescope please let me know.



Winner at RTMC! Meritorious Solar Spectroscope

by Stuart Hutchins

I made my first pilgrimage to the Riverside Telescope Makers Conference (RTMC) this year, May 26-29. The RTMC is well known for the last 30 years or so as a rendezvous for professional and amateur opticians and telescope makers. It was held again this year at the YMCA Camp Oakes in the mountains near Big Bear Lake, west of San Bernardino, CA. With the passage of a cold front, weather conditions were challenging for observing—55 mph gusts the first night, sub-freezing temperatures the next two. Despite that there was quite an interesting program of talks, and many astronomical vendors displayed. Although the hobby of Amateur Telescope Making has declined substantially in the last couple of decades, (commercial manufacturers now dominate) RTM still judges and issues its traditional Merit Awards for amateur built instruments of exceptional de-



The man in the photo (not John) is examining the Heliostat mirror mechanism which tracks the sun and sends a horizontal shaft of light into the Spectroscope (on the right), where the spectrum of absorption lines are viewed through the eyepiece.

sign and craftsmanship. This year there were 24 entries and six Merit Awards. One of those awards went to the DAS's own John Anderson for his Solar Spectroscope,

which many DAS members saw and looked through on the Chamberlin lawn last year at Colorado Astronomy Day.

Congratulations John Anderson!

Astronomical League Update



All current members of the Denver Astronomical Society are members of the Astronomical League and as members you are entitled to share in, and use, the benefits of League membership. The first benefit that usually comes your way four times a year is the League magazine *The Reflector* so it is important to keep your address current with the DAS Treasurer.

If you have been a member over six months, and have not yet received an issue of *The Reflector* then please let both me and the DAS Treasurer know. When it comes to our club, one of the most visible and frequently used benefits of League membership has been the Observing Awards; we probably have the most recipients of any club in

the MARS region and hardly a meeting goes by that Jack Eastman doesn't present one—especially to our past treasurer, Sandy Shaw.

These awards are only available to Astronomical League members. In order to learn about these, and other Astronomical League benefits, programs, and conventions, you should become familiar with the League's web site at www.astroleague.org.

Most, if not all of your questions can be found on the League's web site and you are, of course, most welcome to contact me personally. One of the Astronomical League's premier events is its annual convention.

This year the convention will be August 4 and 5 at the University of Texas at Arlington—in Dallas, TX. The web site for the convention is alconexpo.com. The convention chairperson's address is Dr. Linda Fay McCalla at chair@alconexpo.com and the co-chairman

is Mr. Jeff Barton and his address is cochair@alconexpo.com. If you are considering going then you should check out the web sites as soon as possible as some early registration deadlines are rapidly approaching. These conventions are always interesting and fun filled get-togethers of amateur astronomers. One thing you can be sure of at a meeting in Texas—really good Barbeque!

It has also been announced that the 2007 ALCon will be in Portland, Oregon. There are many benefits available to League clubs and individuals and, as a member already, you should do yourself a favor and find out about them. Almost anything you need to know is available through the League's web site. Check it out!

—Jerry M. Sherlin MARS Regional Representative and ALCor, Denver Astronomical Society—sherlinj@msn.com

o b s e r v e r s d e c k

About the Denver Astronomical Society

Membership in The Denver Astronomical Society is open to anyone wishing to join. The DAS provides trained volunteers who host educational and public outreach events at the **University of Denver's Historic Chamberlin Observatory**, which the DAS helped place on the National Register of Historic Places. First light at Chamberlin in 1894 was a public night of viewing, a tradition the DAS has helped maintain since its founding in 1952.

The DAS is a long-time member in good standing of the **Astronomical League** and participates in **NASA's Project Astro** program.

The DAS' credo is to provide its members a forum for increasing and sharing their knowledge of astronomy, to promote astronomical education to the public, and to preserve **Historic Chamberlin Observatory** and its telescope in cooperation with the University of Denver.

The DAS is a 501(c)(3) tax-exempt corporation and has established three tax-deductible funds: the Van Nattan-Hansen Scholarship Fund, the Public Outreach Fund, and the Edmund G. Kline Dark Site Fund. To contribute, please see the bottom of the membership form for details.

More information about the DAS, its activities, and the special tax-deductible funds is available on the DAS web site at www.thedas.org.



**APPLICATION FOR MEMBERSHIP TO THE
DENVER ASTRONOMICAL SOCIETY**

New Renewal

Name: _____
 Address: _____
 City, State, Zip: _____
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 E-mail Address: _____
 Occupation: _____
 Other Interests: _____
 (Students Only) School: _____ Grade: _____

Do you want to download the newsletter in PDF format from our website instead of by postal mail?
 Yes No

Do you want the above information excluded from the yearly roster?
 Yes No

Please Circle All That Apply:

Regular Membership: \$35 Students: \$12 (*Students under age 23*)
 \$ _____

Astronomy Magazine/\$34
 Sky & Telescope Magazine/\$32.95
 \$ _____

Van Nattan Scholarship Fund \$ _____

Public Outreach Fund \$ _____

Total Amount Paid \$ _____

Please make donations to the Dark Sky Site Fund payable to the DAS EGKDS Fund and mail to Steve Solon, 9774 W. Elmhurst Place, Littleton, CO 80128-5199. Please make other amounts payable to the Denver Astronomical Society and mail along with this completed form to Brad Gilman, DAS Treasurer, 7003 S. Cherry St., Centennial, CO 80122-1179.



Denver Astronomical Society

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