

March/April 2023

Sundogs, Sun Pillars, Halos, and Crepuscular Rays

When is a rainbow not a rainbow? There are several phenomenon created when sunlight (or its reflection off the Moon) interacts with the atmosphere. **Sundogs** are colored spots of light that develop due to the refraction of light through ice crystals. They are located approximately 22 degrees either left, right, or both, from the sun, depending on where the ice crystals are present. The colors usually go from red closest to the sun, out to blue on the outside of the sundog. Sundogs are also known as mock suns or parahelia, which means "with the sun".



Sundog (Photo from National Weather Service)

Sun Pillars appear as a shaft of light extending vertically above the sun, most often at sunrise or sundown. They develop as a result of ice crystals slowly falling through the air, reflecting the sun's rays off of them. Look for sun pillars when the sun is

low on the horizon, and cirrus clouds are present.



Sun Pillar (Photo by Terry Menz, Samsung Galaxy A21)

A **halo** is a ring or light that forms around the sun or moon as the sun or moon light refracts off ice crystals present in a thin veil of cirrus clouds. The halo is usually seen as a bright, white ring although sometimes it can have color.

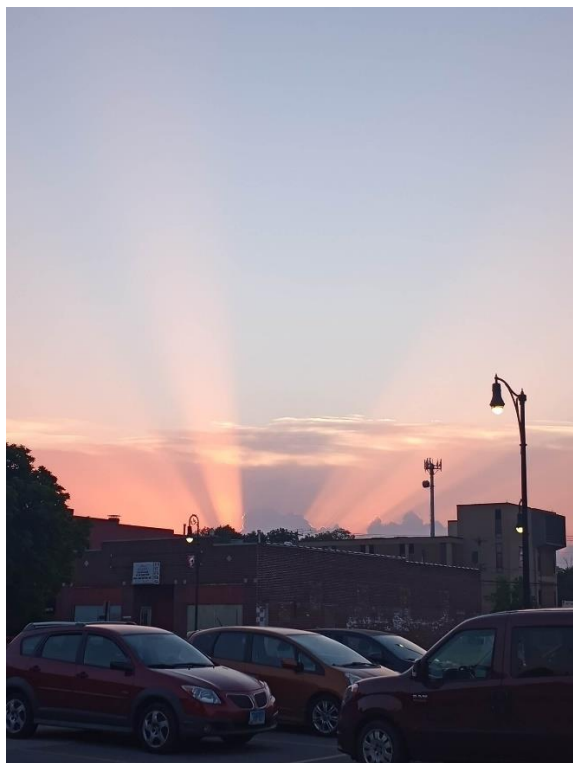


Halo (Photo from National Weather Service)

Sunlight shining through clouds, giving rise to **crepuscular rays**. Crepuscular rays are sunbeams that originate when the Sun is

just below the horizon, during the twilight period. Crepuscular rays are noticeable when the contrast between light and dark is most obvious. Crepuscular rays usually appear orange because the path through the atmosphere at sunrise and sunset passes through up to 40 times as much air as rays from a high Sun at midday. Particles in the air scatter short-wavelength light (blue and green) through Rayleigh scattering much more strongly than longer-wavelength yellow and red light.

A rare related phenomena are **antirepuscular rays** which can appear at the same time (and coloration) as crepuscular rays but in the opposite direction of the setting sun (east rather than west).



*Crepuscular Rays (Photo by Jeff Menz, using Samsung Galaxy A21)
[NOTE: Sources include The National Weather Service and Wikipedia.]*

The River's Edge

Building a Better Scope Brandon Runyon is armed with a reference book he found called The Dobsonian Telescope and has plans to build his own Dob. He generously offered to lend the book to anyone interested as well. Send any helpful insight on telescope building his way!

CONJUNCTION OF PLANETS (ALMOST)

In the days prior to the awaited conjunction of Venus and Jupiter, the world watched the planets drift closer together. In a breathtaking moment as we stepped out of a restaurant on a clear evening, Jeff Menz captured the view with his cell phone (see gallery). We quickly drew attention by others and as we shared our knowledge of the sight, they too wanted to capture this moment on their phones as well. It is these moments we cherish, when we can share the wonders of the skies with others.

Around town: Members are getting out and speaking with community groups about our passion for the night sky. On March 14, Terry Menz gave a presentation, "Can You See the Stars?" to the Highland Woman's Club, including information from the International Dark Sky Association. The following week, Randy will be speaking at the Highland Garden Club about Astronomy and Moon Gardens.

Eclipse Expo: The program for the Eclipse Expo on July 22nd is now available at SEM OEclipseExpo.org. RBAC has decided to have a membership booth at the Expo. If there are enough volunteers for an education station, we will offer our services to the organizers. If you would like to help at either the membership booth or the education station, contact Terry Menz at outreach@riverbendastro.org.

Missouri Solar Eclipse Expo Show Me Center
1333 N. Sprigg St., Cape Girardeau, MO 63701
Learn more and get your tickets at SEM OEclipseExpo.org.

By the Way



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A leprechaun just reminded us that membership dues were to be submitted by

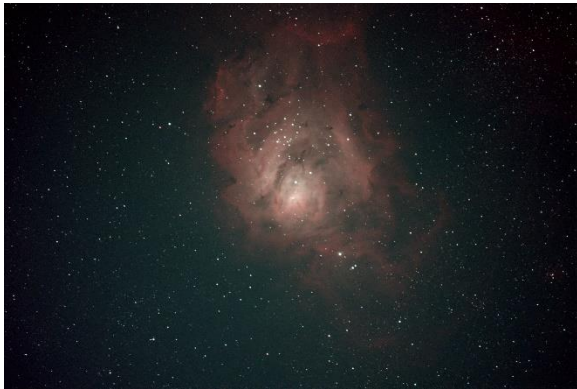
March 15, 2023. Dues are as follows: Adult membership(s) @ \$20.00/year (non-student 18 years or older) and Student membership(s) @ \$10.00/year (Students from 12 to 24 years of age). Checks may be sent to River Bend Astronomy Club c/o Spencer Chapman, 2811 Cabin Creek Ct., Edwardsville, IL. 62025 or in person at our next meeting.

Gallery

ASTROPHOTOS



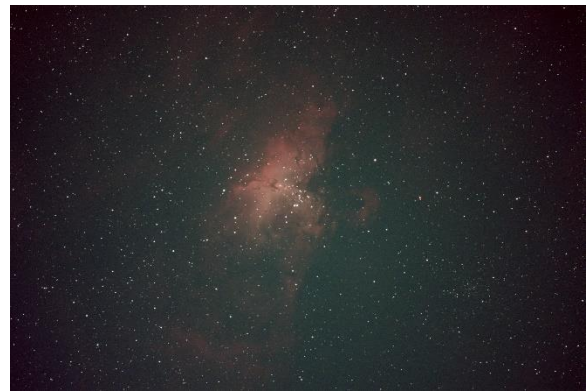
M17, Swan Nebula (Photo by Spencer Chapman)



M8, Lagoon Nebula (Photo by Spencer Chapman)



M27, Dumbbell Nebula (Photo by Spencer Chapman)



M16, Eagle Nebula (Photo by Spencer Chapman)



M42, Orion Nebula (Photo by Spencer Chapman)



Close pass of the Moon, Jupiter, and Venus (Photo by Jeff Menz, Samsung Galaxy A21)

AWARD PHOTOS



Terry Menz (center) receives award for “Outstanding Dedication to Astronomy Outreach for Youth, Club Members, and the General Public” presented by Randy Harrison, RBAC President, and Dan Brandon, RBAC Vice President. (Photo by Jeff Menz)



Jim Reagan, Karen Fajardo, Spencer Chapman, Mike Veith, Jeff Menz, Terry Menz, Dan Brandon, and Spencer Chapman receiving Astronomical League Outreach Awards at the January meeting. (Photo by Dawn Reagan)



Members receiving Astronomical League Outreach Awards at the February Meeting included, Front: Brandon Runyon and Dave Kirsch, Back: Jeff Menz, Terry Menz, Randy Harrison, Dan Brandon (photo by Jim Reagan)

Awards and Achievements

Astronomical League Awards:

Outreach: Basic—Randy Harrison, Jim Reagan, Dan Brandon, Spencer Chapman, Rich Dietz, Kerry Brethauer, Dave Kirsch, Karen Fajardo, Cheryl Brinkman, Brandon Runyon, Chris Weis, Lance Taylor **Stellar:** Terry Menz, Jeff Menz, Randy Harrison, Dan Brandon, Jim Reagan, Dave Kirsch **Master:** Terry Menz, Jeff Menz, Randy Harrison **Library:** Randy Harrison (Silver)

New Members: No new members as of March 8.

Upcoming Events:

Highland Garden Club, Mar 23, 7 pm: Randy Harrison presents “Astronomy and Moon Gardens” at Latzer Memorial Library

Columbia Fifth Grade, Salt Lick Trailhead, Valmeyer, IL. Fri. Mar 24, 7:30-9:30.

Glen Carbon Library, March 28, 7 – 9 pm

Girl Scouts, Horner Park, Lebanon, IL Fri. March 31, 6-9PM.

Yuri’s Night, Sat, Apr 1, Bobby’s Frozen Custard in Maryville (tentative), 7 pm – 10 pm

GSOSI Training Institute, Gateway Center, Collinsville, April 15, 11 am – 1 pm.

Lifelong Learning Institute at SIUE, Wed. Apr 19th from 10:30 to 11:45 am, “Shadow Play: The Dance of the Earth, Moon, and Sun” followed by solar viewing outdoors, skies permitting.

RBAC Meeting, Sat April 22, 7pm, Salem UCC