

Sedona, Arizona

Keep Sedona Beautiful
Dark Sky Committee

2020 Annual Report

To the International
Dark Sky Association

Photograph Courtesy of Sedona Photographer,
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Dreamstime Photo

The Keep Sedona Beautiful (KSB) Dark Sky Committee is pleased to report progress from October 2019 through September 2020 toward its goal of bringing more community awareness of light pollution and preserving our magnificent natural resource—our dark night sky. This was accomplished through the Committee’s dark sky outreach program, which included educational events and assisting other communities in pursuing the International Dark Sky Community or Park designation.

EDUCATIONAL EVENTS

Coping with the COVID-19 pandemic

KSB, the City of Sedona, and the Sedona Chamber of Commerce were unable to continue sponsoring public events after emergency measures were instituted for the pandemic. Venues such as the Sedona Public Library and community centers halted access for public events such as star parties and group meetings.

Despite these limitations, the Sirius Lookers astronomy club has had occasional small star parties where they maintain social distancing, request wearing of masks, and sanitize telescopes and ladders after each guest. The Astronomers of Verde Valley club has gone to virtual events, including programs on the local Verde Valley cable TV channel and on YouTube to educate the public about astronomy, dark skies, and what’s visible in the sky.

November 11, 2019: Mercury Transit

A rare transit of Mercury happened on November 11, 2019. A transit takes place when the planet passes directly between the Sun and Earth, becoming visible against the solar disk. The Sirius Lookers Astro Club had binoculars and small telescopes for enhanced and safe viewing of Mercury as it appeared as a tiny black dot moving across the disk of the Sun. The event was held in the Sedona Public Library parking lot and was sponsored by Sirius Lookers, Sedona Public Library, and Keep Sedona Beautiful’s Dark Sky Committee. The event was free to the public.

Month of January, 2020: Astronomy events at Sedona resorts

Astronomers of Verde Valley brought their telescopes to three events at Amara Resort and two at Enchantment Resort to view winter objects such as the Andromeda Galaxy (M31), Orion Nebula, Crab Nebula, and Whirlpool Galaxy (M51). Events reached a total of 84 participants, who braved temperatures down to 31 F.

February 15, 2020: Mingus Mountain Star Party

Sirius Lookers hosted this event at the 7818-foot summit of Mingus Mountain. Visitors came from Sedona, the Village of Oak Creek, and Prescott. Several telescopes, binoculars, and night vision devices were on hand, providing a great experience in high-elevation viewing.

July 16, 2020: "County Wide" TV Program

Yavapai Broadcasting News Director Paul David interviewed Astronomers of Verde Valley's J.D. Maddy about dark sky communities and parks, and the value of shielded light fixtures. J.D. shared astrophotos of what can be seen in the July night sky.

July 8 and 9: Comet NEOWISE Viewings

The Sirius Lookers club held small public viewings of newly-arrived Comet NEOWISE at morning and evening events at the Sedona Cultural Park, using safe practices with two or three telescopes. About seven club members and a dozen members of the public attended.

September 10, 2020: Virtual Star Party

Amateur astronomer and past Astronomers of Verde Valley president J.D. Maddy recorded a tour of the night sky using his telescope. The program repeats twice weekly on local VerdeValleyTV (Cox Cable TV Channel 9), and is on YouTube at https://www.youtube.com/watch?v=TXN0ehQ_kbg.

September 26, 2020: Live Virtual Talk and Moon Viewing

Sirius Lookers and Astronomers of Verde Valley jointly promoted among members and fans a live talk about the life of astronomer Robert Burnham, author of the well-known *Burnham's Celestial Handbook*, and then live views of the Moon from Lowell Observatory's Giovale Open Deck Observatory. Lowell Observatory set up this event to celebrate National Astronomy Day and Observe the Moon Night.



Comet NEOWISE over Cathedral Rock near Sedona, July 17, 2020. Courtesy Robert Mueller.

Additionally, with our beautiful preserved dark skies, multiple local companies offer private and group star parties to visitors worldwide.

SUPPORT OF INTERNATIONAL DARK SKY COMMUNITY DESIGNATIONS

The KSB Dark Sky Committee assisted the City of Cottonwood, AZ as it completed the final phase of its application to the International Dark Sky Association for designation.

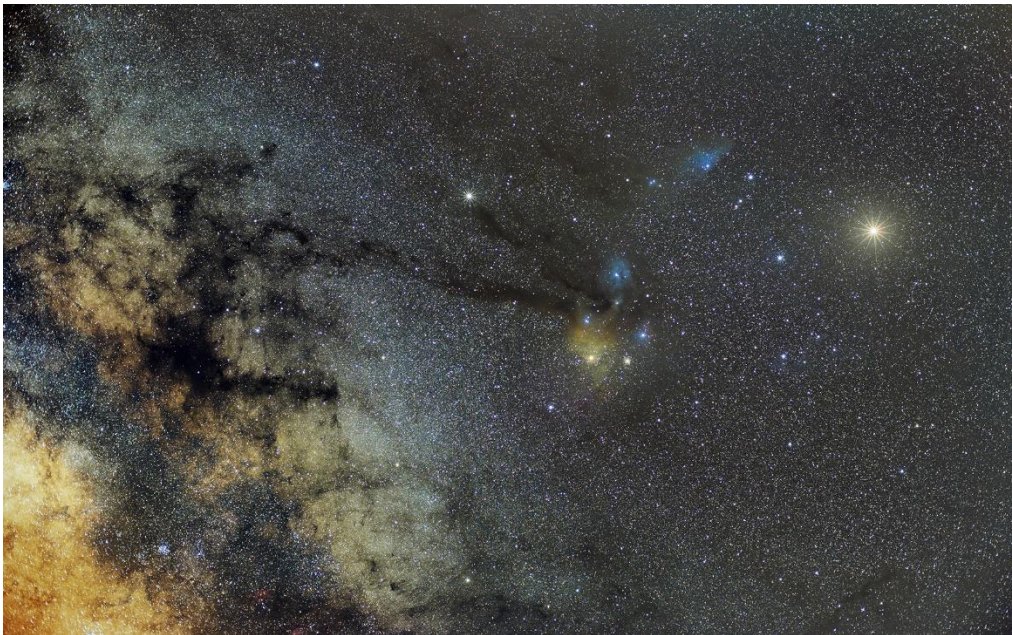
The City of Sedona and KSB provided letters of support to the IDA to designate nearby Tuzigoot and Montezuma Castle National Monuments as Dark Sky Parks.

OUTDOOR LIGHTING CODE CHANGES IN SEDONA

In July 2020, the City of Sedona's staff completed an extensive revision of the outdoor lighting code to improve clarity and remove clerical and typographical errors. The revision was submitted for approval by the City's Planning and Zoning Commission and then the City Council. In this process, KSB expressed concerns that the existing code for "Class 2" outdoor lighting (for parking lots, walkways, and other outdoor spaces) still allowed "warm lighting alternatives," which all contribute far more to sky glow than amber lights. KSB recommended that the code be changed to limit Class 2 lighting choices to only low-pressure sodium lamps (which manufacturers are phasing out) or narrow-band amber LEDs. However, the Sedona Police Department raised concerns about color rendition under amber lighting.

The Planning and Zoning Commission was unable to come to consensus on this issue, and ultimately the City Council decided to continue to allow “warm lighting alternatives.” The Sedona-based *Red Rock News* newspaper covered the story at <https://www.redrocknews.com/2020/07/30/sedona-pz-split-on-lighting-changes-in-city-code/>.

KSB recognizes the valid concerns of the Sedona Police Department about amber lighting and believes that the community can eventually find practical ways to update the code to deal with this and similar concerns, ensuring minimal further impact to Sedona’s dark skies.



Antares widefield image, taken from the Sedona area, May 29, 2016. Courtesy Robert Mueller.

KEEP SEDONA BEAUTIFUL WEBSITE

At KSB’S website, <https://keepsedonabeautiful.org>, the **Dark Sky** selection under the **Initiatives** tab is kept updated about dark sky events and community dark sky awareness events. It links to the International Dark Sky Association (IDA) video, “Losing the Dark,” as well as to the following:

- IDA Website
- IDA Quick Link to Lights at Night Turn Pollinators Off
- IDA Quick Link to My Neighbor’s Lighting
- IDA Quick Links to Light Pollution, Wildlife, Energy Waste, Human Health, and More
- IDA Quick Link to Small Changes, Big Impact-Dark Sky Lighting at Home Depot
- IDA Quick Link to International Dark Sky Places
- City of Sedona Outdoor Lighting Ordinance 2001
- Yavapai County Light Pollution Control Ordinance



Milky Way over Cathedral Rock, with Sedona at lower right, May 27, 2020. Courtesy Robert Mueller.

SKY QUALITY MEASUREMENTS

The KSB Dark Sky Committee takes Sky Quality Measurements to ensure that Sedona continues to protect its dark night skies and reduce light pollution. The measurements, in magnitudes per square arc second, were taken in three locations on April 22 and June 20, 2020. The readings were taken at the same locations as in previous years.

SKY QUALITY READING IN SEDONA, AZ CITY LIMITS PERFORMED ON APRIL 22, 2020, NEW MOON									
Time	Location	Percent of Cloud Cover	First Sky Quality Reading	Second Sky Quality Reading	Third Sky Quality Reading	Fourth Sky Quality Reading	Fifth Sky Quality Reading	Sixth Sky Quality Reading	Average Sky Quality Reading
22:58	Saddle Rock Cir and June Bug Cir; about 1.2 miles west from Y (right before Sedona Bar & Grill)	0%	21.06	21.02	21.02	21.01	21.00	21.01	21.02
23:05	Whitetail Rd and Rodeo Ln; 2.1 miles W of Y off Rodeo Road/89A (by Safeway)	0%	21.05	21.02	21.02	20.98	20.98	20.97	21.00
22:44	Keep Sedona Beautiful parking lot, 340 Brewer Road, facing away from KSB office	0%	21.07	21.07	21.06	21.07	21.07	21.06	21.07

SKY QUALITY READING IN SEDONA, AZ CITY LIMITS PERFORMED ON JUNE 20, 2020, NEW MOON									
Time	Location	Percent of Cloud Cover	First Sky Quality Reading	Second Sky Quality Reading	Third Sky Quality Reading	Fourth Sky Quality Reading	Fifth Sky Quality Reading	Sixth Sky Quality Reading	Average Sky Quality Reading
23:01	Saddle Rock Cir and June Bug Cir; about 1.2 miles west from Y (right before Sedona Bar & Grill)	0%	21.03	21.01	21.01	21.02	20.99	20.98	21.01
22:51	Whitetail Rd and Rodeo Ln; 2.1 miles W of Y off Rodeo Road/89A (by Safeway)	0%	20.98	20.93	20.93	20.97	20.93	20.93	20.95
23:09	Keep Sedona Beautiful parking lot, 340 Brewer Road, facing away from KSB office	0%	21.00	21.09	21.05	21.06	21.07	21.06	21.06

Report submitted by Mark Lawler, Chair
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