



Oracle State Park Center for Environmental Education

International Dark Sky Park
(Silver Tier)
2015 Annual Report



Prepared by the Oracle Dark Skies Committee (ODSC)

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1. Letter of Submittal



Douglas A. Ducey Governor

Sue Black Executive Director State Parks Board
R.J. Cardin, Chairman
Kay Daggett, Vice-Chairman
Mark Brnovich, Phoenix
Alan Everett, Sedona
Shawn Orme, Mayer
Orme Lewis, Jr., Phoenix
Lisa Atkins, State Land Commissioner

IDA Board of Directors International Dark-Sky Association 3225 North First Avenue Tucson, Arizona 85719-2103

Dear IDA Board of Directors,

I am excited to submit this first annual report for Oracle State Park, Arizona State Parks first "International Dark Sky Park".

Since receiving the IDA designation in October 2014, the Park has been true to its name as a Center for Environmental Education and has held many more than the required four annual events highlighting the importance of night sky awareness. These are detailed in this report for 2015. And we have more such events planned for the remainder of 2015 and into 2016.

We appreciate IDA's past support of many of our night sky events at Oracle State Park. As the "International Dark Sky Park" in IDA's backyard, we are honored to have and continue this special relationship.

Sincerely,

Steven C. Haas Park Manager

Catalina/Oracle State Park

Haas

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2. General

2.1 Brief History of Oracle State Park Center for Environmental Education

The Kannally Ranch was donated to The Defenders of Wildlife (DOW), a non-profit organization, in 1976. The will of Lucille Kannally gave the 4000-acre ranch to DOW with the stipulation that the property be perpetually used as a wildlife reserve. The DOW held this property (called the Oracle Wildlife Refuge) for ten years. In 1985, the DOW decided to offer the property to the State for a State Park.

The Park was continually available for environmental education programs on a reservation basis. Oracle State Park was officially dedicated and opened to the public October 1, 2001.

The above history is from the book *Arizona State Parks: The Beginning* edited by Charles R. Eatherly, and used with permission. Copyright Arizona State Parks.

The Park received the IDA "International Dark Sky Park" (IDSP) Silver Tier designation in October 2014.



International Dark-Sky Association

"...to preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting."

3223 North First Avenue, Tucson, AZ 85719, USA tel +1.520.293.3198 | fax +1.520.293.3192 www.darksky.org | ida@darksky.org

13 October 2014

Interim Executive Director W. Scott Kardel

Emeritus David L. Crawford, Ph.D. Mr. Bryan Martyn, Executive Director Arizona State Parks 1300 W. Washington Street Phoenix, AZ 85007

Dear Mr. Martyn:

On behalf of the IDA Board of Directors, it is with great pleasure that I write to inform you that the Board has approved the nomination of Oracle State Park to become the world's twentieth IDA International Dark Sky Park.

The Board is impressed by the efforts undertaken at OSP to preserve the natural nighttime environment there for the benefit of future generations of Arizonans, and we hope that the IDA designation will help spread the word about the Park and its activities so that Park visitors from all over may enjoy an authentic dark-skies experience for themselves.

We look forward to a long and productive collaboration with Arizona State Parks to protect dark skies both at Oracle and other properties in your system.

Kind regards,

Board of Directors

President James Dougherty • USA

Vice President
J. Kelly Beatty • USA

Treasurer Christian K.Monrad • USA

Secretary Connie Walker, Ph.D. • USA

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Nels Leutwider * USA
Martin Morgan-Taylor * UK
Mario Motta. M.D. * USA
Scott Roberts * USA
Leo Smith * USA

Jim Dougherty, President IDA Board of Directors

cc: Mr. Steve Haas (Manager, Oracle State Park) Mr. Michael Weasner (Oracle Dark Skies Committee)

IDA Offices

Hever, Belgium | Turramurra, New South Wales, Australia

2.2 IDA Contacts

Jennifer Rinio, Ranger, Oracle State Park, jrinio@azstateparks.gov Mike Weasner, Chair, Oracle Dark Skies Committee, mweasner@mac.com

2.3. Tier Status Upgrade Plans

Since receiving the "International Dark Sky Park" designation, Oracle State Park and the Oracle Dark Skies Committee have been working to raise awareness of the issue of Light Pollution using a "Go for the Gold" public outreach approach. The hope is that over time, our currently Silver Tier sky can achieve Gold level. When it does, a Tier Status Upgrade will be submitted.

2.4. Park Visitors During Past Year

From October 2014 through July 2015, Oracle State Park had 6394 visitors attend events of various types. Approximately 540 of these visitors attended dark sky related events (e.g. star parties, dark sky appreciation, "Bat Night"; see Section 8). The Park has seen a significant increase in the number of visitors for night events since receiving the IDSP designation.

3. Park Lighting

3.1 Lighting Projects in 2015

Amber LEDs purchased from IDA were installed in March 2015 to replace red CLFs that had been installed in June 2014 to replace incandescent bulbs. Comparison photos are below (photographs by Mike Weasner).



Figure 3.1 Typical Original Incandescent Bulb Lighting



Figure 3.2 Incandescent Bulb Lighting along Ranch House Parking Lot

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Figure 3.3 Red CLF style bulbs installed in June 2014



Figure 3.4 Red CLF style bulbs along Ranch House Parking Lot



Figure 3.5 Amber LED style bulbs installed in March 2015



Figure 3.6 Amber LED style bulbs installed in March 2015



Figure 3.7 Amber LED style bulbs along Ranch House Parking Lot

3.2 Park Operating Plan Update

The Oracle State Park Center for Environmental Education "2015 Operating Plan" mentions the importance of the IDSP designation:

In October 2014, Oracle State Park was designated an International Dark Sky Park, one of only 20 places in the world to be awarded this status. The new partnership with the International Dark-Sky Association expands the park mission further to provide educational opportunities to promote the importance of dark skies, and offer regular night sky viewing with telescopes.

Significance of International Dark Sky Status: In October 2014. Oracle State Park was designated the newest '20th in the world' International Dark Sky Park, by the International Dark-Sky Association based in Tucson. Community volunteer and astronomy enthusiast, Mike Weasner, led the application process, and formed an active organizational committee, the Oracle Dark Skies Committee. A special event to celebrate the new honor and designation was held in March 2015 at the park. A copy of the completed application is on file at the office desk. An interpretive display corner in the dining room of the ranch house details the dark sky mission to conserve the limited resource of the dark night sky, and educate the public about dark sky friendly appropriate outdoor lighting - affecting the health of people and wildlife. The Oracle State Park website has links to the Oracle Dark Skies Committee activity, and the final approved application manual. By accepting the awarded status as a Dark Sky Park, Oracle State Park commits to offering at least four dark sky friendly events each year to the public. This is not hard to do, and there are already a list of events offered this year that comply, including guest talks on astronomy in archaeology, constellation stories, star-parties with telescopes, Bat Night, Night Hike for Lunar Viewing with Binoculars, and more.

The updated Operating Plan added this to the "Park Interpretive Themes":

Dark Sky Educational Events

Including educational speakers, and guided opportunities for the public to view and interpret the night sky and develop awareness of the value of dark sky preservation

It also notes that:

The International Dark-Sky Association is a new partner, influencing educational programming, special event themes, new dark sky friendly night lighting installed, and new after hours operations at the remote American Avenue Trailhead.

And this:

<u>Telescope and Star Party Support:</u> Mike Weasner, as the initiator of the International Dark Sky Park application and recent park award, helps with finding contacts for dark sky friendly topics for events, and coordinating telescopes for evening star parties.

The Oracle Dark Skies Committee (ODSC) and in particular, Committee Chair, Mike Weasner's leadership has resulted in multiple telescope donations to the park, and other equipment to support star parties. The committee is now expanding focus to greater Pinal County, activity remains closely tied to the park. OSP also gets star party support from stargazing organizations: Tucson Amateur Astronomy Association (TAAA) and Saddlebrooke Skygazers Club.

The Park Lighting Plan was updated in 2014 as part of the IDSP nomination effort.

4. Oracle State Park Night Sky Quality

4.1 Weather Impacts

Unusually cloudy weather impacted southern Arizona in 2014 and 2015. This severely limited the opportunities to obtain Sky Quality Measurements during moonless nights at Oracle State Park.

4.2 Sky Quality Measurements

Sky Quality Measurements were taken at Oracle State Park on different nights, at various times, and under varying sky conditions. Measurements were made using a Unihedron Sky Quality Meter with Lens (SQM-L), serial number 6254, on loan from the National Optical Astronomy Observation in Tucson, Arizona, and Unihedron SQM-L, serial number 8530, purchased by Oracle State Park in November 2014. The meter measures the sky brightness in units of "magnitudes per square arc second". As most astronomers and the knowledgeable public think in terms of "what's the faintest star visible?" the following chart developed by K. Fisher

(http://www.unihedron.com/projects/darksky/images/MPSASvsNELM.jpg) provides a conversion to visual magnitudes.

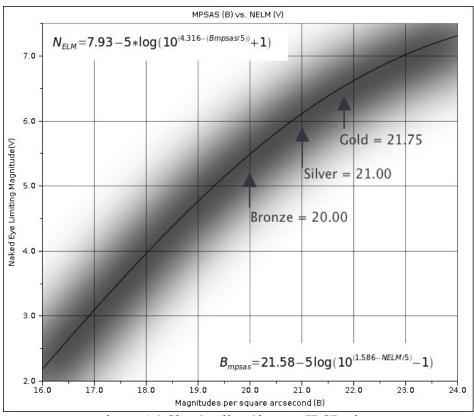


Figure 4.1 Sky Quality Chart vs IDSP Tiers

The "International Dark Sky Park" levels of Gold, Silver, and Bronze have been added to the chart.

Table 4.1 shows the night sky quality measurements taken at the Park from October 2014 through June 2015 (the latest measurements available due to weather). No parking lot lighting was illuminated at the time of the measurements.

Site	Date/Time	Lat/Long	Elevation	Conditions	sqм	
Oracle State Park designated as an "International Dark Sky Park" - 8 October 2014						
Kannally Ranch	10/09/2014	N 32.61°	4384 ft	Clear, some humidity	21.10	
House parking lot	1930 MST	W 110.73°		Clear, some numbers	21.10	
Kannally Ranch	10/23/2014	N 32.61°	4384 ft	Mostly clear, some clouds in north	20.91	
House parking lot	1930 MST	W 110.73°		l lostry clear, some clouds in north	20.91	
AZ Trail Walk-In	12/23/14	N 32° 37' 17.2"	4290 ft	Clear, breezy, Zodiacal Light easily seen.	21.16	
parking lot	2020 MST	W 110° 44' 47.7"		Clear, breezy. Zodiacar Light easily seen.	21.10	
Kannally Ranch	03/21/15	N 32.61°	4384 ft	Clear, some dust, humidity	21.33	
House parking lot	2240 MST	W 110.73°		Clear, some dust, numbers	21.33	
Kannally Ranch	06/06/15	N 32.61°	4384 ft	Few clouds after a windy day	21.43	
House parking lot	2215 MST	W 110.73°		rew clouds after a windy day	21.43	
Kannally Ranch	06/13/15	N 32.61°	4385 ft	Clear, breezy, some dust?	21.46	
House parking lot	2330 MST	W 110.73°		Clear, breezy, some dust?	21.40	

Table 4.1 Oracle State Park Sky Quality Measurements

During the time frame of SQM readings (October 2014 to June 2015), the overall average SQM at Oracle State Park was 21.23, with the darkest sky at 21.46. This sky quality keeps Oracle State Park in Silver tier range. For reference, the sky quality measurements documented in the 2014 Nomination Package was an average of 21.37, with the darkest reading at 21.46.

Sky Quality Measurements will continue to be done at the Park when conditions permit using the Park's Unihedron SQM-L, serial number 8530.

4.3 Night Sky Photographs

The following photograph of the night sky at Oracle State Park was taken by Mike Weasner, Chair, Oracle Dark Skies Committee, local amateur astronomer, and IDA member, on 13 June 2015, using a Nikon D7200 DSLR with a Rokinon 8mm f/3.5 180° Fisheye Lens. Exposure settings for the merged star trail image in Figure 4.2 were f/5, 60 seconds, ISO 2000.



Figure 4.2 Star Trails at Oracle State Park

The Milky Way photograph on the cover was also taken on 13 June 2015 by Mike Weasner, D7200 DSLR, 8mm fisheye lens, at f/5, 60 seconds, ISO 6400.

As was the case in 2014, distant city light domes extend only a few degrees above the local horizon and have a minimal impact on the night sky at Oracle State Park.

5. Conservation and Research

5.1 Climate and Weather Data

The Park collects weather data daily throughout the year from a weather station near the Kannally Ranch House. This data is used to monitor long-term changes in the local climate.

5.2 Phenology Data

The Park documents seasonal changes that occur in local plants and animals to monitor timing of these changes and the affects of climate and weather on the Park's habitat.

5.3 New Bat Research

A "bat acoustical monitoring station" is contemplated for installation at the Park. While no timeframe has been established, bat researchers have requested that such a station be installed.

6. FundingNot applicable for 2015.

7. Arts and Culture

7.1 Ancient Native American Astronomical Practices

Ken Zoll, Verde Valley Archaeology Center, gave a talk on the Ancient Native American Astronomical Practices on 18 April 2015. His prior talk (see Section 8.2) was so well received that this was an encore presentation to a packed room.

7.2 Storytelling Sky Tour

Jim O'Connor gave a talk on 6 June 2015 on how various ancient cultures used the night sky as part of their lives (see Section 8.5).

7.3 Art of Astrophotography

Adam Block, Mt Lemmon SkyCenter, will be exhibiting some of his astrophotography in the Oracle State Park Kannally Ranch House living room in late 2015 (see Section 8.10).

8. Outreach

8.1 South Korean Dark Skies Delegation Visit

On 10 January 2015, a high level delegation from South Korea came to Oracle State Park at the invitation of IDA to learn how it became an "International Dark Sky Park" and to experience its dark sky. Their first stop was at the Oracle Fire Station:



Photo courtesy of Scott Kardel

Upon arrival at the Park, Bryan Martyn, Executive Director, Arizona State Parks welcomed Kwon-Yeong Taek, Governor of Yeongyang, South Korea:



Photo courtesy of Scott Kardel

After introductions were completed, Jennifer Rinio, Oracle State Park Ranger, talked about the history of Oracle State Park and gave a tour of the historic Kannally Ranch House.



Photo by Mike Weasner

Following a catered dinner in the Kannally Ranch House, Mike Weasner, Chair, Oracle Dark Skies Committee, talked about how the idea of pursuing the "International Dark Sky Park" for Oracle State Park came about and how it was accomplished:



Photo courtesy of Scott Kardel

The plan had been to do some night sky observing from Oracle State Park, but unfortunately the sky was cloudy and prevented the Delegation from seeing the Zodiacal Light, Comet Lovejoy, and the Winter Milky Way, all only visible to the unaided eye from dark sky locations. The planets Venus and Mercury, which were very close together in the western sky that night, and many other celestial objects would have been seen and viewed through telescopes at the Park.

The visit by the South Korean Dark Skies Delegation was declared to be a great success by everyone involved. It very clearly demonstrated the international reach of the "International Dark Sky Park" Program.

8.2 Winter Evening Star Gazing

To celebrate the accomplishment of the Oracle Dark Skies Committee (ODSC) in bringing recognition and attention to Oracle State Park's dark sky resource, a day and evening event was held at Oracle State Park with live music, a guest speaker, and stargazing. The International Dark-Sky Association, the Oracle Dark Skies Committee, and the Friends of Oracle State Park had information tables, and two of the Park's donated telescopes were set up:



Photo by Mike Weasner

Live music was performed in the living room by Oracle's own "Drumension": introducing world ambient electronica, or "electronic dreamscapes" to put the visitors in an introspective mood before the evening star party. Following the music, State Representative Frank Pratt introduced the guest speaker to the large crowd:



Photo by Mike Weasner

Arizona Humanities Council guest speaker, Ken Zoll, then gave an excellent presentation on "Ancient Native American Astronomical Practices":



Photo by Mike Weasner

Following the talk, telescopes and binoculars provided by the Park, ODSC and FOSP member Stan Bembenek, and the Saddlebrooke SkyGazers Club were available for viewing. The partly cloudy skies and cold January temperatures did little to dampen the enthusiasm shown by the Park visitors as they were thrilled to view several planets, the Moon, nebulae, galaxies, and Comet Lovejoy. Many just enjoyed being in a dark sky area so they could appreciate seeing the stars as they had never seen them before from their homes in light polluted cities. The last group of visitors reluctantly left the Park after 10 PM.



Photo by Mike Weasner

8.3 Adventures with the Moon

Oracle State Park volunteer Dick Boyer conducted an evening Interpretive Program on 7 March 2015. The Moon, Earth's only natural satellite, with its mystery and intrigue continues to provide interest to Earth's humans. Dick took the Park visitors to the Moon and back through interactive family friendly activities and displays.



Photo by Mike Weasner

Traveling to the "Moon":



Photo by Mike Weasner

Planting the American flag on the "Moon":



Photo by Mike Weasner

The Oracle Dark Skies Committee was on hand to use two of the Park's telescopes to let everyone view the Moon up close and personal. Unfortunately, clouds, with the threat of

rain prevented the telescopes from being set up. At the end of Dick's program, visitors sat around the upper patio fire pit and enjoyed smores under the near-full Moon that briefly appeared in a small hole in the clouds:



Photo by Mike Weasner

8.4 "Dancing with the Stars" Dark Sky Celebration

To honor it being named as the 20th worldwide "International Dark Sky Park", Oracle State Park held an afternoon and evening event on Saturday, 21 March 2015.

In the early afternoon, members of the Tucson Amateur Astronomy Association (TAAA) set up some solar telescopes for viewing of our Sun at the Group Use Area:



Photo by Mike Weasner

Mt Lemmon SkyCenter, MMT Observatory, Cascabel Conservation Association, Arizona Trail Association, Friends of Oracle State Park, International Dark-Sky Association, and the Oracle Dark Skies Committee set up information booths.



Photo by Mike Weasner



Photo by Mike Weasner

There was live music:



Photo by Mike Weasner

Following welcomes by Park Ranger Jennifer Rinio, Park Manager Steve Haas, and new Arizona State Parks Executive Director Sue Black, J. Scott Feierabend, Executive Director, International Dark-Sky Association, presented the "International Dark Sky Park" award to Oracle State Park:



Photo courtesy of Stan Bembenek

County Supervisor Tony Smith read a proclamation enacted by the Pinal County Board of Supervisors:

RESOLUTION No. 030415-OSP

A Resolution of the Pinal County Board of Supervisors in support of the March 21, 2015, celebration at Oracle State Park on its being named the 20th "International Dark Sky Park" in the world

WHEREAS, Oracle State Park, part of the Arizona State Parks system, is located in Pinal County; and

WHEREAS, the International Dark-Sky Association (IDA), headquartered in Tucson, Arizona, just south of Oracle State Park, created an "International Dark Sky Places" Program; and

WHEREAS, the Oracle Dark Skies Committee was formed in April 2014 by local residents to pursue an IDA "International Dark Sky Park" designation for Oracle State Park; and WHEREAS, with the support of management and staff at Oracle State Park and Arizona State Parks; and

WHEREAS, with the community-wide support of local business owners and residents to improve outdoor lighting to reduce "light pollution" from "artificial light at night"; and

WHEREAS, the Oracle Dark Skies Committee submitted its nomination for Oracle State Park to IDA in July 2014; and

WHEREAS, the IDA Board of Directors, after duly considering the nomination, granted "International Dark Sky Park" status to Oracle State Park in October 2014; and

WHEREAS, Oracle State Park is the 20th park in the world and the 1st in the Arizona State Parks system to receive the "International Dark Sky Park" designation; and

WHEREAS, the "International Dark Sky Park" status has proven to increase the number of visitors to designated parks worldwide and enhance the economies of local areas; and

WHEREAS, Oracle State Park has already seen the effects of increased visitors; and WHEREAS, a celebration is being held at Oracle State Park on Saturday, March 21, 2015, to officially present the award and honor the Park's achievement; and

WHEREAS, the Pinal County Board of Supervisors wishes to express its support and appreciation to the Oracle Dark Skies Committee, Oracle State Park, Arizona State Parks, and local businesses and residents in this important accomplishment for Oracle State Park and Pinal County in order to protect Arizona's oldest natural resource, the night sky.

NOW, THEREFORE, BE IT RESOLVED THAT the Board of Supervisors of Pinal County, Arizona, is proud to name Saturday, March 21, 2015, as "Oracle State Park Day and Night" in Pinal County.

PASSED, ADOPTED AND APPROVED by the Pinal County Board of Supervisors this ______ day of ______ day of _______ .2015.

Pinal County Board of Supervisors

Cheryl Charge, Chairwoman

3/4/2015

Date

Sheri Cluff, Clerk of the Board

Mike Weasner and Sue Black then presented Certificates of Appreciation to organizations, businesses, and individuals who supported the IDSP nomination process or donated equipment to Oracle State Park:



Photo courtesy of Stan Bembenek

Visible in the photograph above are the telescopes and mounts donated by Mary Huebner, Explore Scientific, Gilbert Esquerdo, MrStarGuy, and Meade Instruments.

The final highlight of the presentations was the unveiling of a new sign that would be displayed at the Oracle State Park gate:



Photo courtesy of Stan Bembenek

The sign was mounted in April 2015 and proudly shows that Oracle State Park is an IDA "International Dark Sky Park":



Photo by Mike Weasner

Following the presentations, everyone moved to the Kannally Ranch House patio for more live music. As sunset approached, members of the TAAA and the Saddlebrooke SkyGazers Club began setting up telescopes for the evening's star party. The Park's newly donated telescopes were also set up.



Photo by Mike Weasner

The weather cooperated nicely for the star party and Park visitors were thrilled by views of the crescent Moon, Venus, Jupiter, the Zodiacal Light, star clusters, the Winter Milky Way, galaxies, and nebulae. The last visitor left a little after 10pm.

8.5 Storytelling Sky Tour

This dark sky appreciation event was held on 6 June 2015. Park Ranger Jennifer Rinio introduced guest speaker Jim O'Connor, of the Tucson Amateur Astronomy Association, on the upper patio of the Kannally Ranch House:



Photo by Mike Weasner

Jim's core astronomical interest is in how various cultures use the night sky. He discussed how to tell time at night like a cowboy or an Apache for ceremonies. Further, he talked about the constellations and stars through multi-cultural tales. Park visitors were fascinated by his talk and were able to enjoy a gorgeous sunset at the start of the talk:



Photo by Mike Weasner

One of the Oracle State Park telescopes was set up and operated by the Oracle Dark Skies Committee, and after the talk provided Park visitors the opportunity to view the planets Venus, Jupiter, and Saturn.



Photo by Mike Weasner

Mike Weasner of the ODSC demonstrated how to use a smartphone camera to take astrophotographs through a telescope. Visitors were thrilled to be able to photograph Jupiter and its moons using their own smartphones.

The talk and telescope viewing were great demonstrations of the value and importance of having and maintaining dark skies. Oracle State Park was proud to continue showcasing its "International Dark Sky Park" status.

8.6 Guided Night Walk and Lunar Viewing with Binoculars

This event at Oracle State Park, was schedule for 27 June 2015, and was to be conducted by Park Ranger Gary Faulkenberry. However, the event was rained out.

8.7 Bat Night

"Bat Night" began with a 30 minute introduction to the bats of Arizona by Research Ecologist and Regional Manager for Arizona Game and Fish, Joel Diamond, Ph.D.



Photo by Mike Weasner

The talk was followed by a netting event. Attendees walked to a remote area of the Park and were able to see how bats were humanely captured for research:



Photos by Mike Weasner



Photo by Mike Weasner

After everyone got to see the bats they were released into the moonlit sky:

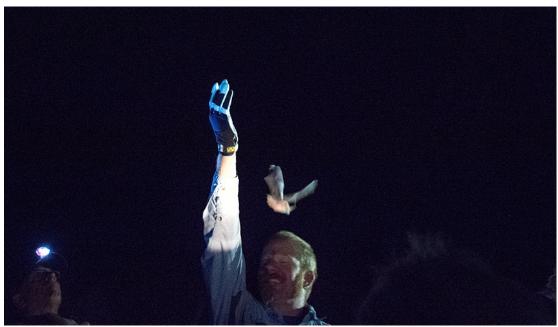


Photo by Mike Weasner

This evening program was an excellent opportunity to learn more about bats and see up close some of the flying mammal species living in our neighborhood.

The night at Oracle State Park was warm and partly cloudy and made for an exciting and educational experience. Some stars were visible, as seen in this view of the constellation Sagittarius above a tree:



Photo by Mike Weasner

8.8 Dessert in the Desert

The Friends of Oracle State Park (FOSP) held a social and fundraising event at the Kannally Ranch House at Oracle State Park on Friday, 11 September 2015. Funds raised will be used to further the support by FOSP to the Park, including night sky events. One of the raffle drawing prizes given out was a future nighttime visit to Cassiopeia Observatory in Oracle for two people. The lucky winners will learn more about the night sky and dark sky awareness from Mike Weasner, Chairman of the Oracle Dark Skies Committee and local amateur astronomer.

8.9 American Flag Ranch Celebration

Saturday, 26 September 2015, the Oracle Historical Society held a celebration to commemorate one of the last existing Territorial post office buildings in Arizona, located at the historic American Flag Ranch in Oracle. Members of the Oracle Dark Skies Committee had a booth to showcase Oracle State Park's dark skies and distribute brochures supplied by the International Dark-Sky Association and the Park.





Photos by Mike Weasner

8.10 Upcoming Events

Three more dark sky events are planned for the rest of 2015 at Oracle State Park.

A "Star Party with Telescopes and Live Music" event will be held on Saturday, 10 October. The Park, the Tucson Amateur Astronomy Association, and the Saddlebrooke SkyGazers Club will provide telescopes.

On 17 October, Mike Weasner, local amateur astronomer and Chair of the Oracle Dark Skies Committee, will conduct a special workshop on "Beginner Digital Astrophotography".

In late 2015, Adam Block of the Mt Lemmon SkyCenter will present a program on his outstanding astrophotography and many of his astrophotographs will be on exhibit at the Kannally Ranch House for four weeks.

Additional events to be held in 2016 are in the planning stages.

9. Community and Media Relations

9.1 Oracle Dark Skies Committee

The Oracle Dark Skies Committee continues to do local and county-wide dark sky awareness activities to ensure preservation of the dark sky at Oracle State Park and elsewhere. The Committee has begun holding its meetings at Saddlebrooke Ranch to bring in additional members from a nearby community. Some highlights are below.

During this reporting period the Committee attended an "open house" public meeting for the newly proposed "Peralta Regional Park" in Pinal County and has provided comments on a recently released "Draft Master Plan".

The Committee was invited to give a talk to the Oracle Womens Network on 6 February 2015 about how the "International Dark Sky Park" designation for Oracle State Park came about and why it was important to the area. Mike Weasner discussed the idea behind pursuing the designation, the broad community support the effort received, the impacts of Light Pollution, and the economic benefits that are beginning to be seen from the designation. The talk was well received and there was much appreciation given to the Oracle Dark Skies Committee for its significant work to promote the area.

In July 2015, the Committee contacted one of the owners of the new Arizona Zipline Adventures being constructed near Oracle State Park on Mt Lemmon Road to inquire about outdoor lighting plans that might impact the night sky quality at Oracle State Park. The response is typical of businesses in the area and is quoted here:

Hello and nice to hear from you. At this time we are not planning on doing any nighttime ziplining or parking lot lighting at the zipline. We have used minimal outdoor lighting. No more than to be able to lock up the building and walk to the car in the evening without the danger of falling and tripping over something. As it has taken over a year to get our permits and our building permits we will not be adjusting anything on the plans as of now but we will certainly inform you if we plan to add anything. And yes I do strongly believe you will be feeling the impact of visitors grow over the next year due to the zipline and being as well we are going to be marketing nationally as well as internationally we would love to add night time observing into our packages. Someone will be in touch with you in the near future to discuss how we can market this together. Good day! Brandon Luthy

The Committee was one a few local organizations that support eco-tourism in this area to have a booth at the re-opening of the Oracle Historical Society's historic American Flag Ranch on 26 September 2015. (See Section 8.9)

9.2 Circle K Convenience Store

As part of its work in 2014 during development of the Oracle State Park IDSP Nomination Package, the manager of a Circle K Convenience Store in Oracle was contacted regarding lighting at the store. The lighting of concern illuminates the pump area and, while compliant with the Pinal County Outdoor Lighting Code 2.195 under the "grandfathered" clause, it is not compliant to the revised code and not dark sky compliant as there are unshielded lights that extend below the ceiling, as seen in this photo:



Photo by Mike Weasner

The manager was agreeable with replacing the lighting or properly shielding the fixtures, but said he would "have to check with Corporate". Several times in 2014 and 2015 the manager and his replacement were contacted for status updates. The answer was always that it was "in work", but that he had no new information on start or completion dates. In August 2015, the manager admitted his frustration and suggested that the Committee contact the Circle K regional office. Attempts by the Committee to obtain information from Circle K and its parent company have so far been unsuccessful, but the effort continues.

9.3 Jones Outdoor Advertising Billboards

As reported in the original Nomination Package, there is a billboard on Arizona Highway 77, just west of Oracle, that had two extremely bright unshielded lights illuminating signs on both sides of the billboard.



Photo by Mike Weasner

After failed attempts to have the billboard owner shield the lights, in January 2015 the Committee requested that the Arizona Department of Transportation (ADOT) determine whether the billboard lighting met the requirements of the "Arizona Highway Beautification Act". ADOT quickly found that the billboard was in violation and contacted the owner. Within a few days shields had been installed on the lights that dramatically reduced the light spillage onto local residences and businesses and onto the highway, making the billboard advertising much more readable at night. These photos document the significant improvement:



Photo by Mike Weasner





Photos by Mike Weasner

In August 2015, two Committee members discovered that the Jones Outdoor Advertising billboard on highway AZ-79 just north of Oracle Junction now had similar shields installed, whereas previously it had unshielded lights.



Photo courtesy of Chip Parfet

The Oracle Dark Skies Committee has expressed its appreciation to Mr. Dwight Jones, owner, for making these improvements.

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9.4 Media Coverage

Considerable media coverage of the designation of Oracle State Park as an "International Dark Sky Park" occurred in late 2014 and early 2015 after IDA and Arizona State Parks published press releases (on the next several pages).

ORACLE STATE PARK

Arizona's Oracle State Park Named World's Twentieth International Dark Sky Park



TUCSON, Ariz., and ORACLE, Ariz. 12 November 2014 -- Nestled between the bright cities of Phoenix and Tucson, Oracle State Park Center for Environmental Education is a dark sky oasis in the desert. Now the park's impressive night skies will be protected for future generations. The International Dark-Sky Association is honored to name Oracle State Park an International Dark Sky Park. The prestigious designation is the result of exceptional efforts to protect the area's dark skies and raise public awareness about the issue. Designated at the "Silver" tier level, the park is the first in the Arizona State Park system to receive IDA recognition.

"We welcome Arizona's Oracle State Park as the world's newest International Dark Sky Park," said IDA Acting Executive Director Scott Kardel. "The team there has done a commendable job in protecting the park's night sky."

Encompassing 3,948 acres (1,598 hectares) of land, the park is located in the northeastern foothills of the Santa Catalina Mountains in Pinal County, Arizona. It takes its name from the nearby, unincorporated community of Oracle, which was founded by prospectors in the 1870s. At an elevation of 4,500 feet (1,370 meters), the park offers summertime relief from the intense heat of the desert floor below. Park visitors enjoy hiking, wildlife observing, and a variety of nature education programs.

Today's designation owes much to the efforts of the Oracle Dark Skies Committee (ODSC), whose members include Oracle-area residents, members of the Friends of Oracle State Park, and State Park Rangers. Michael Weasner, a retired former U.S. Air Force pilot and aerospace industry manager, chairs the group and spearheaded the effort to obtain the IDA recognition.

"Oracle is proud to have its State Park receive this important designation to help preserve Arizona's natural resources," Weasner said. "The Oracle Dark Skies Committee worked hard to complete the necessary tasks and documentation in record time and is thrilled that Oracle State Park has received the designation."

Relics Of Arizona History

Illinois brothers Neil and Lee Kannally purchased the original 160-acre (65-hectare) ranch in 1903. Neil Kannally left Illinois the year before, settling in the Oracle area to become a ranch hand. He believed Arizona's dry desert air would help with his tuberculosis. In 1905, Lee, their two sisters and a brother joined Neil and settled on the ranch.

Over the following decades, land purchases expanded the ranch to over 50,000 acres (20,000 hectares). The Kannallys built a Spanish colonial-style ranch house in 1932 that remains the focal point of the property. All five of the siblings lived on the ranch for the rest of their lives and occupied the ranch house until the death of the youngest sister Lucile in 1976.

Most of the ranch land was sold to the Magma Copper Company in 1952, leaving an area of about 4,000 acres (1,600 hectares) that Lucile Kannally willed to Defenders of Wildlife, a nonprofit dedicated to preserving animals and plants native to North America. In 1985, the Defenders transferred the house and ranch land to the State of Arizona with the goal of founding a new state park. For several years while closed to the public, the park offered environmental education trail programs for visiting school groups. In 2001, after a lengthy process, Oracle State Park was named a state park and opened to the public with the dual mission of serving as a wildlife refuge and environmental education center.

"The International Dark Sky Park 'Silver' designation fits extremely well with the mission and goals of Oracle State Park as a Center for Environmental Education," said Steve Haas, Park Manager.

In The Shadow Of The Big City

The park is only about 20 miles (32 km) from Tucson, a city of nearly one million people. Despite its proximity to the city, the park is fortunate that the Santa Catalina Mountains screen out much of the glow of the city's lights. This puts an authentic dark-sky experience within an hour's drive for hundreds of thousands of people in southern Arizona. Protection of Oracle State Park's dark skies is enhanced by park policies and restrictive outdoor lighting ordinances in Pinal and Pima Counties, and in Tucson itself.

The park has attracted increasing interest from casual stargazers and the area amateur astronomy community. In support of its application for IDA recognition submitted by ODSC, the group held a number of events at the park to bring visitors together with telescopes to experience firsthand the wonders of the night sky. One such event, held in late June, attracted more than 350 visitors, some of whom traveled from as far away as Phoenix.

"The Kannally Ranch House patios offer a spectacular venue with scenic views for special events at the park, day and night," said Park Ranger Jennifer Rinio. "When it's a summer evening, and especially if live music accompanies the activity, locals bring their own picnic feast and arrive early to grab the patio tables."



A Bright Future For Dark Sky Parks In Arizona

Arizona State Parks plans to give high priority to dark skies at its 30 state parks and natural areas, applying lessons learned in the Oracle application toward the goal of achieving many more IDA designations in Arizona. IDA's application process for International Dark Sky Park certification includes elements such as adoption of park policies that control the amount and type of outdoor lighting allowed on the property. To simplify the application process for other Arizona state parks, Oracle's

lighting plan is being adapted for use throughout the state park system.

"Arizona State Parks' conservation efforts are an important part of the agency's mission. We are excited to have Oracle State Park designated as a dark sky park and hope to see many more parks added," Arizona State Parks Director Bryan Martyn said.

Arizona's state and national park dark sky conservation programs add economic, ecological and educational value to both rural and urban communities alike, drawing higher levels of park visitation. Data from other IDA International Dark Sky Parks suggest that neighboring communities gain tangible economic benefits from the added tourist visibility. The partnership between IDA and Arizona State Parks is expected to help improve the long-term financial prospects of many rural State Parks properties.

Finally, strong support for dark-skies conservation presents an important opportunity to advance education and public outreach in Arizona according to Dr. Bob Casavant, the Arizona State Parks Manager of Natural Resources, Science, and Research. "Prudent and committed community partnerships continue to assist Arizona State Parks and other resource management agencies in advancing conservation of Arizona's truly world-renowned night skies, and related successful STEM (science, technology, engineering, math) programs across the state," Casavant said.

Image Captions

Top of Page: The summer Milky Way Rises over Oracle State Park. High resolution version for news media.

Above, Left: Star trails above the Kannally Ranch House at Oracle State Park. High resolution version for

news media.

(Credit for both photos: Michael Weasner)

About the IDA Dark Sky Places Program

IDA established the International Dark Sky Places conservation program in 2001 to recognize excellent stewardship of the night sky. Designations are based on stringent outdoor lighting standards and innovative community outreach. Since the program began, eight Communities, 20 Parks and nine Reserves have received International Dark Sky designations. For more information about the International Dark Sky Places Program, visit http://www.darksky.org/international-dark-sky-places/about-ids-places.

About IDA

The International Dark Sky Association, a 501(c)(3) non-profit organization based in Tucson, Arizona, advocates for the protection of the nighttime environment and dark night skies by educating policymakers and the public about night sky conservation and promoting environmentally responsible outdoor lighting. More information about IDA and its mission may be found at http://www.darksky.org.

Media Inquiries

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Managing and conserving Arizona's natural, cultural and recreational resources for the benefit of the people,
both in our Parks and through our Partners. FOR MORE INFORMATION CONTACT: Ellen Bilbrey at (602)
542-1996 or (602) 228-8518 or Monica Enriquez at (602) 542-6997. Contact by Email:
pio(at)azstateparks.gov

Oracle State Park Gains International Dark Sky Status

(Phoenix, Arizona - November 12, 2014) - Between the cities of Phoenix and Tucson, Oracle State Park is a 4,000-acre dark sky oasis in the desert. Now the park's impressive night skies will be protected for future generations. The International Dark-Sky Association (IDA) has named Oracle State Park an International Dark Sky Park. Designated at the "Silver" quality level, the park is the first in the Arizona State Park system to receive the IDA recognition. Other communities in Arizona have also been designated including Flagstaff and Sedona.

Today the wonder of the night sky is threatened by the use of artificial light. The IDA works to raise public awareness of the value of the night sky and to garner allies in the efforts to protect the natural night sky. The IDA defines International Dark Sky park sites as "a park or other public land possessing exceptional starry skies and natural nocturnal habitat where light pollution is mitigated and natural darkness is valuable as an important educational, cultural, scenic, and natural resources."

Light pollution comes from lighting that is aimed horizontally or upward, is unshielded, brighter than it needs to be, and/or shines beyond where and when it is needed. Light pollution not only impacts the science of astronomy (an important business in Arizona), but can cause documented negative impacts on wildlife, the environment and human health. Light pollution wastes over \$2 billion a year in unnecessary energy costs in the United States.

The IDA designates the quality of night skies in three tiers. Gold represents the highest award representing the darkest skies, followed by the Silver and Bronze designations. The Silver designation means there are three Point light sources and glary lights do not dominate nighttime scene. In addition, brighter sky phenomena can be regularly viewed, with fainter ones sometimes visible, and the Milky Way is visible in summer and winter.

Park Manager Steve Haas said, "The International Dark Sky Park Silver designation fits extremely well with the mission and goals of Oracle State Park as a Center for Environmental Education."

This coveted designation owes much to the efforts of the Oracle Dark Skies Committee (ODSC), whose members include Oracle-area residents, members of the Friends of Oracle State Park, and State Park Rangers. Michael Weasner, a retired former U.S. Air Force pilot and aerospace industry manager, chairs the group and spearheaded the effort to obtain the IDA recognition.

"Oracle is proud to have its State Park receive this important designation to help preserve Arizona's natural resources. The Oracle Dark Skies Committee worked hard to complete the necessary tasks and documentation in record time and is thrilled that Oracle State Park has received the designation," said Weasner.

The Arizona State Parks department plans to give high priority to dark skies at its 30 State Parks and Natural Areas, and applying lessons learned in the Oracle application toward the goal of many more IDA designations in Arizona.

Executive Director Bryan Martyn said, "Arizona State Parks' conservation efforts are an important part of the agency's mission. We are excited to have Oracle State Park designated as a dark sky park and hope to see many more parks added."

IDA established the International Dark Sky Places conservation program in 2001 to recognize excellent stewardship of the night sky. Designations are based on stringent outdoor lighting standards and innovative community outreach. Since the program began, eight Communities, 20 Parks and nine Reserves have received International Dark Sky designations. For more information about the International Dark Sky Places Program, visit http://www.darksky.org/international-dark-sky-places/about-ids-places.

The International Dark Sky Association, a 501(c)(3) non-profit organization based in Tucson, Arizona, advocates for the protection of the nighttime environment and dark night skies by educating policymakers and the public about night sky conservation and promoting environmentally responsible outdoor lighting. More information about IDA and its mission may be found at http://www.darksky.org. For more information about Oracle State Park call (520) 896-2425 or visit AZStateParks.com/parks/ORAC.

For information about all 28 Arizona State Parks, the Trails and Off-Highway Vehicle Programs and State Historic Preservation Office call (602) 542-4174 or visit AZStateParks.com. Campsite or cave tour reservations can be made online at AZStateParks.com or by calling the Reservation Call Center at (520) 586-2283. Open 7 days a week, from 8 a.m. to 5 p.m. MST. Follow AZStateParks on Twitter and Facebook.

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Find out more about Oracle State Park

link to this page: http://azstateparks.com/press/2014/PR 11-12-14.html

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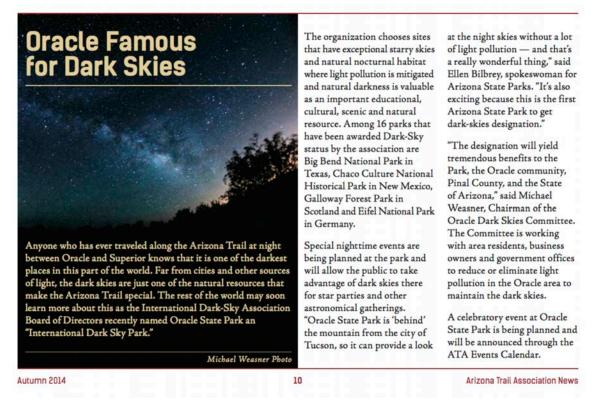
Mike Weasner, Chair, Oracle Dark Skies Committee, and Steve Haas, Manager Oracle State Park, were interviewed by Tucson TV station KOLD on the accomplishment and its importance to the surrounding area.





Screen images credit KOLD News 13.

The Arizona Trail Association highlighted Oracle State Park as an "International Dark Sky Park" in its Autumn 2014 newsletter:



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Korean delegation, International Dark Skies Association pay visit to Oracle State Park





Yeong Yang County, South Korea, Governor Kwon Yeong Taek is welcomed by Arizona State Parks Director Bryan Martyn. John Hernandez | Miner



In a small cultural exchange, Governor Kwon Yeong Taek tries Jim Walsh's hat on. John Hernandez | Miner

San Manuel Miner

A high level delegation from Yeongyang County, South Korea led by County Governor Kwon Yeong Taek visited Oracle State Park along with members of the International Dark-Skies Association (IDA) last weekend. John Barentine, IDA Program Manager arranged the visit through Oracle State Park which has been designated as an International Dark-Sky Park. IDA had visited the Governor in Korea and spoken with him about creating a Dark Sky Park in Yeongyang and had mentioned the Oracle Dark-Sky Park to him. When he heard that the Korean delegation would be in the area, he thought a visit to Oracle State Park would be beneficial in helping Governor Taek decide about a park in Yeongyang.

The delegation was greeted at the park by the Executive Director of Arizona State Parks Bryan Martyn, President of the Friends of Oracle State Park Jim Walsh, Michael Weasner of the Oracle Dark Skies Committee and Arizona State Park Rangers. Director Martyn spoke to the delegation

through translator Won-Kil Jeong welcoming them. The delegation got excited when Bryan told them that he had been stationed in South Korea with the military and flew

http://www.copperarea.com/pages/korean-delegation-international-dark-skies-association-pay-visit-to-oracle-state-park/

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the Apache helicopter. Bryan had been stationed at Camp Page in Chun Chon, South Korea.

The delegation was then given a tour of the Kannally Ranch house by Oracle State Park Ranger Jennifer Rinio. Jennifer told them about the history of the Kannally paintings, the ranch and the surrounding area. Following the tour, Governor Paek said that the delegation really appreciated what the park has done for them. Governor Paek then presented Director Martyn with a handmade fan which will remain at the Oracle State Park and be displayed in the Kannally Ranch House.

Director Martyn then presented Governor Paek with a "challenge coin" which is a military tradition. It is usually given in recognition of a special achievement. He wished the Korean delegation success in getting their Dark-Sky Park and bid them safe travel.

"You are our people," Martyn said. "You are our friend."

The Governor and Director then embraced while those in attendance applauded.

A light supper provided by the Friends of Oracle State Park and catered by David Raneri and the Patio Café was served. The meal included local jojoba fed beef sliders provided by local rancher Gregg Vinson's Jojoba Beef Company.

Following the meal, Jim Walsh, President of the Friends of Oracle State Park spoke. Ranger Steve Haas then made a few remarks and then introduced Michael Weasner. Michael spoke to the delegation about how the Oracle Dark-Sky Park was started and able to get its accreditation. He talked about the economic benefits a Dark-Sky Park can bring to an area.

"We both have beautiful skies," Governor Paek said in closing. "We hope that both parks can work together and maybe become world famous parks."

http://www.copperarea.com/pages/korean-delegation-international-dark-skies-association-pay-visit-to-oracle-state-park/

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John Hernandez (197 Posts)

John Hernandez lives in Oracle. He is retired and enjoys writing and traveling. He is active in the Oracle Historical Society. He covers numerous public events, researches historical features and writes business/artist profiles.



http://www.copperarea.com/pages/korean-delegation-international-dark-skies-association-pay-visit-to-oracle-state-park/

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Oracle State Park celebrates Dark Sky designation, new director

By Nina Crowder (http://www.copperarea.com/pages/author/ncrowder/) | Posted March 24th, 2015















(/pages/wpcontent/uploads/nuzbot_Tue-Mar-24-201512.jpg)

San Manuel Miner

With a brand new designation and a new director at the helm, Oracle State Park has begun its transformation.

On Saturday, new Arizona State Parks Director Sue Black, members of the International Dark Sky Association, park rangers and staunch supporters gathered at the Oracle State Park to celebrate these changes.

Visitors were able to learn from educational booths from the International Dark Sky Association, Oracle Dark Skies Committee,

Arizona Trail Association, Lower San Pedro Watershed Alliance, Cascabel Conservation Association, Friends of Oracle State Park and Catalina Sky Survey.

During the day people were able to look through telescopes set up to see the sun and the spots around the sun. Everyone was eager to share their knowledge and equipment with visitors. Oracle Patio Café catered the event and local bands provided entertainment.

Black, who just recently took the helm from Bryan Martin, spoke about her goals for the local park.

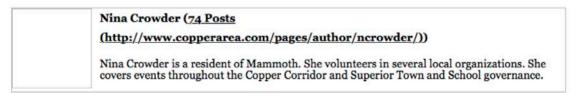
"I am a huge field advocate," she said. "I really care about what happens on the properties and I hope I make you proud." Black is the first director to report directly to the Governor, which she sees as a huge opportunity.

IDA Executive Director Scott Feierabend presented the Oracle State Park with a plaque designating Oracle State Park as a Dark Sky Park. There are only 20 of these designations worldwide and this is a great honor for Oracle State Park.

"It is all about the effort the park takes to do the right thing with lighting to try to show the world the resource it has and to obtain the support of the community which results in this award today," Feierabend said.

There were many awards given to community members and businesses from the Oracle State Park for their participation and cooperation with the Oracle State Park including Cascabel Conservation District, Oracle Historical Society, Cherry Valley Ranch Bed and Breakfast, Copper Corridor Economic Development, Friends of Oracle State Park, Hair Country, Keith Krueger IDA member, Lower San Pedro Watershed Alliance, Arizona Trail Association, Multi Mear Telescope, Nature Conservancy, Oracle Elementary School District, Pinal County Board of Supervisors, Supervisor Pete Rios, Ernest and Maria Gonzales, Mary Hubner, Oceanside Telescope, Mead Instruments and Jones Outdoor Advertising. The Oracle State Park appreciates everyone who contributes to the Park and volunteers their time and efforts.

Everyone enjoyed the presentations, awards and afterwards the Two O'Clock band played music at the Kannally house and telescopes were set up for viewing after sundown. It was a terrific event and well attended.



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9.5 Pinal County Dark Skies Coalition

In mid-2015, an effort was begun to form a "Pinal County Dark Skies Coalition" of county residents, business owners, educators, and elected officials. While the process has just begun, there is interest in the County for such a group that would be active in promoting dark sky awareness in Pinal County.

10. Miscellaneous Materials

10.1 IDA Dark Sky Defender Award 2014

The Oracle Dark Skies Committee received the IDA Dark Sky Defender award for 2014:



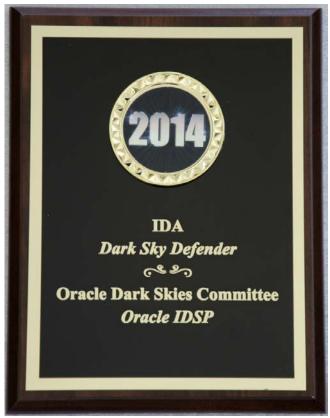


Photo by Mike Weasner

The Award was presented to the Committee by Dr. John Barentine, IDA, at its February 2015 meeting and again in public at the 21 March 2015 celebration event at Oracle State Park.



Photo courtesy of Anna Lands



10.2 Oracle State Park Telescope Training

Mike Weasner conducted training the evening of 30 April 2015 on the use of the four telescopes that were donated to Oracle State Park in recognition of it being named as an "International Dark Sky Park". Trainees were Park rangers and ODSC members.



Photos courtesy of MaryHelen Vasquez

10.3 Visit to Mt Lemmon SkyCenter

On 21 May 2015, the Oracle Dark Skies Committee had a very special visit to Mt Lemmon Observatory and the SkyCenter as the guests of Steve Larson from the Catalina Sky Survey in recognition of the Committee's work to preserve the dark night sky in southern Arizona.





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10.4 Friends of Oracle State Park

The Friends of Oracle State Park is a membership group that has provided ongoing support, both financial and volunteers to both Oracle State Park and the Oracle Dark Skies Committee. The dedication of this group to dark sky activities is notable and much appreciated.

11. Document Revisions

0.1	3 September 2015	Initial Committee review draft
0.2	8 September 2015	Initial review edits
0.3	10 September 2015	1st Arizona State Parks review draft
0.4	27 September 2015	Final review draft
1.0	30 September 2015	Final