U ntil just a century ago the night sky was an intimate part of every human life, hanging over our ancestor's heads from dusk to dawn in every corner of the planet. Orion, the hunter, stalked the winter skies while Scorpio pursued him six months behind in the summer sky. For our more distant ancestors the night sky was clock, calendar, compass, and even library as they hung stories of their gods, heroes, and villains on the patterns they saw in the stars. However, like a frog in a slowly heated pan, the loss of the night sky, even though recent in the context of human history, has yet occurred gradually enough that for a time we failed to notice its passing. But as the darkness recedes to ever smaller and more distant reservoirs of nature, and the associated cost of it has become increasingly apparent, people are beginning to cry, "enough"!

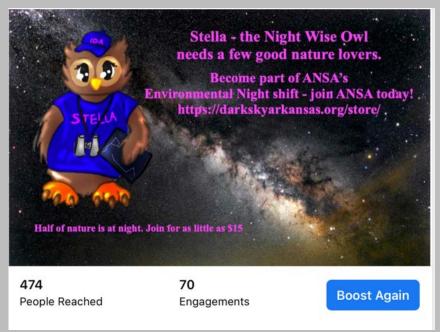
> ARKANSAS NATURAL SKY ASSOCIATION 2020 ANNUAL REPORT

Tim, Ennst.

The year 2020 has been a big year for ANSA. Having the Buffalo National River's designation as an International Dark-Sky Park behind us has allowed us to move on to new projects. Unfortunately, initial work with the State Parks service and a planned Fall Dark-Sky festival were frustrated by the virus.

But other projects have taken their place, as we will report more fully below. With donations and a small grant, we have gotten on public radio in the State's two urban centers. We have created a Facebook Page to augment our Facebook Group, which continues to grow, and we have become a membership organization.

On the Advocacy side, we completed our firstever Municipal Environmental **Response Survey and** were successful in getting it on the front page of the State's only Daily newspaper. We are helping move what we hope will be a trendsetting relighting of the streets of the small town of Gilbert, the only community located inside the Buffalo



National River, our State's only International Dark Sky Park. We are finally moving a lighting ordinance toward possible adoption in the State's largest city. We caused a modification of a street lighting project in another community, are working to improve the State's shielding law, and have worked with the Buffalo River Foundation to incorporating lighting restrictions into its environmental easements.

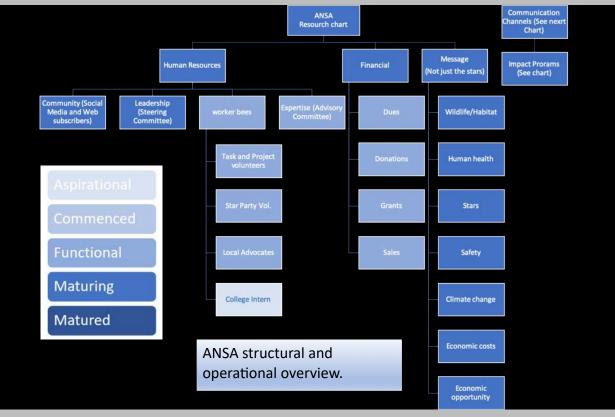
In outreach, we substituted an online multi-night observing course, Observing 101, for participation in star parties canceled by the virus, and greatly improved and grew our Natural Sky Host Map and Library Telescope Program. That our work is having an impact is illustrated by the chamber of commerce in one of the counties through which the Buffalo River runs, dedicating its annual banquet to its Dark-Sky asset.

We look forward to an exciting and productive 2021. James Bruce McMath Chair

ANSA's foundational strategy is as follows:

- 1. Build an organizational structure that grows and knits together vital human resources in the form of:
 - a. Community Support;
 - b. Organizational Leadership;
 - c. Local Activist;
 - d. Partnerships;
 - e. Expertise;
- 2. Develop a financial foundation;
- 3. Develop an effective messaging strategy;
- 4. Build a public presence and communication capacity to project messaging;
- 5. Identify strategies for causing concrete changes in public and private lighting practices.

This has resulted in an operational structure that is graphically displayed below.



OPERATIONAL STRUCTURAL

HUMAN RESOURCES

ur leadership is composed of a solid board (steering committee) composed of six professionals with diverse areas of relevant expertise and a Chair, and a technical advisory committee, composed of lighting experts, biologists, and other technical experts. Finally, we have a growing list of operational positions. The latter include a Treasurer, a webmaster, a host for our Facebook page, a manager of our Natural Skies Map program, a volunteer to Twitter for Stella, and a team that runs our library telescope program. These include, an overall manager of the project, a person who manages scope acquisition and modification and a number of volunteers who help individual libraries with training and maintenance of the scopes.



Cover Image courtesy of Wikimedi

Includes information on Messier objects and much more.

Steering Committee 2019



James Bruce McMath

Chapter Chair, Little Rock Lawyer of counsel McMath Woods P.A.



April Ambrose

Business Development Executive for Entegrity, a sustainability and energy services consulting firm.

Katherine Auld

Astronomer/Geologist, Northwest Arkansas Community College; Secretary, Sugar Creek Astronomical Society; and NASA/JPL Solar System Ambassador (Bella Vista)



John Chamberlin

Trustee, Arkansas Nature Conservancy; Member, Pollution Control and Ecology Commission: board member, Arkansas STEM Coalition



Ned Skoog

Industrial Engineer with experience in developing lighting plans (Hot Springs)



Allan Staib

Retired business executive and entrepreneur, president of the North Central Arkansas Astronomical Society, coordinator of BNR Star Party Support.

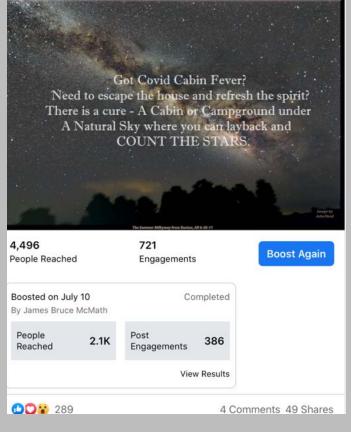


Robert Togni

Retired engineer, amateur astronomer, author of Learning the Constellations

COMMUNITY

ur base community continues to be best represented by our Facebook Group page, which has grown past 2200 members. While impossible to inventory, many of these are ambassadors for ANSA and dark skies. We have just initiated a dues-paying membership that has topped forty. Our mobilize.io community represents a reservoir of people interested in following our work and has grown to one hundred twenty-two. In addition, we have two hundred fifty-five subscribers to our various Mail Poet mailing lists, which includes our Host business contacts, trespass victims, and an event news list among others. We have yet to convert these human resources, however, into meaningful formalized structure for local community scale action.



FINANCIAL

O ur legal structure is that of an Unincorporated Not for Profit Association with 501(c)3 tax status was formalized this year. Our current income sources are donations, dues and sales. The latter primarily of Learning The Constellations by, Robert Togni, of which we have sold nearly three hundred copies. A revised version of it has been adopted as out Library Telescope manual.

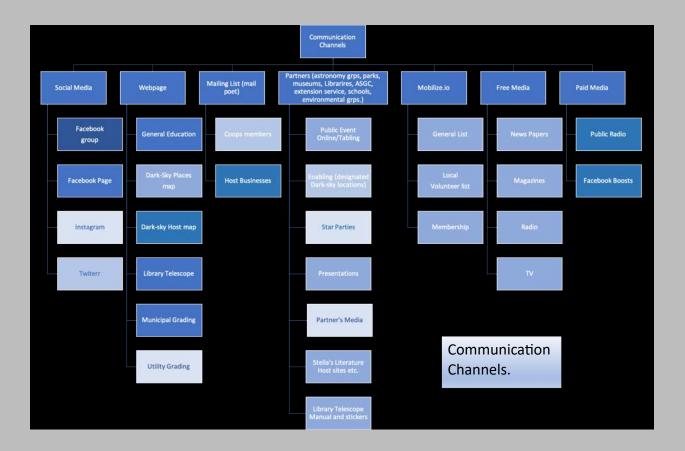
MESSAGING

A NSA has consciously chosen to broaden our messaging's focus to the full spectrum of environmental impacts associated with the unnecessary, excessive, or abusive use of exterior lighting. We have chosen to use "natural" rather than "dark" skies in our name to avoid the psychological barrier inherent in the concept of darkness. Light pollution is not just about dark skies.

We believe that natural skies opens the discussion to the full spectrum of environmental impacts associated with artificial outdoor lighting. Dark skies tends to imply the concern is solely on the issue of observing stars. We hope that Stella the Night Wise Owl will reinforce the wildlife concerns and make natural skies a friendlier seeming place.



NSA depends primarily on free media to get its message out. We have identified six avenues or channels of free communication and experimented with limited paid media as shown below.



SOCIAL MEDIA

O ur Facebook Group Page has proven to be the most effective way to introduce ANSA on an intimate, interactive basis with the broadest possible slice of the public. Inviting the posting of photos has proven to be a particular draw. People come for the photos, but it is hoped they see the educational posts as well and become dark-sky advocates in the process. Our social media platform then feeds our mailing lists and mobilize.io lists, and these in turn our membership.

This year we added a Facebook organization page which allows us to "boost" certain posts that we share with our group page. Posts on our Facebook page noticeably impact our website traffic. Posts concerning our Natural Sky Places Host Map are particularly effective, and boosting post for our Observing 101 classes more than pays for the cost.

Instagram remains aspirational, but we have just begun to use Twitter @Dark_SkyAR.

WEBPAGE

O ur webpage continues to grow in content and polish. It is hard to gauge the true value of our web presence, but it gives us the means of projecting more complex messaging and to demonstrate an institutional presence, which in turn implies public support for our issue. In addition to addressing numerous topics under the learn tab, the website has become

		Ψ.
Users	New Users	Sessions
2,844	2,844	3,727
Number of Sessions per User	Pageviews	Pages / Session
1.31	6,358	1.71
Avg. Session Duration	Bounce Rate	
00:01:28	70.54%	
m		

an important tool in several of our outreach programs, as discussed further below. These include the Stella's Natural Sky Map and the companion Stella's Host Facilities Map, which now lists sixty three cabins each of which in theory is an advocate for responsible lighting. Recently we added a library telescope section to the webpage as well.

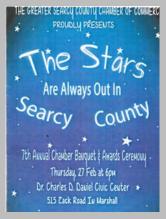
PUBLIC RADIO

A rkansas is served by two public radio operations, one each in the State's two urban centers. To introduce our issue and ANSA to a larger audience, we raised funds to support a series of sponsorship ads with each of the stations. In addition to exposure, we think this will help raise ANSA's profile and credibility as a serious environmental advocate in the State. This year we added a Facebook organization page which allows us to "boost" certain posts that we share with our group page. Posts on our Facebook page noticeably impact our website traffic. Posts concerning our Natural Sky Places Host Map are particularly effective, and boosting post for our Observing 101 classes more than pays for the cost.

Instagram remains aspirational, but we have just begun to use Twitter @Dark_SkyAR.

Astronomy groups, planetariums, libraries and parks

P artners provide the potential to leverage outreach through other organizations to their unique audiences. Principle opportunities here are astronomy clubs, our host map subscribers, and libraries. We have also developed relationships with the Arkansas Space Grant Consortium, the Searcy County Chamber of Commerce, and the Buffalo River Foundation, among others. Once the virus is behind us, we have good prospects to resume work with the State Parks.



WEBPAGE

e have not focused much on free media during the last year. As already noted, we were successful in gaining attention for our Municipal Environmental Response Survey. In addition, we have an arraignment with AY magazine to post its monthly review of sky events on our Facebook group page. In January, we expect an article on our Natural Sky Host Map program to be published in AY.



Congratulations! You are staying in a "Stella, the Night Wise Owl" approved accommodation offering onsite or nearby access to the universe via a nearly naturally dark night sky. If it is a clear night, step outside, your eyes will beam you up — no Scotty required.

Stella's expert suggestions:

Plan for comfort - I like toperchon a limb, but peopledobet ter on theground, proneor reclined, sitting is next best.

- Adapt your vision Turn all lights, inside and out, off. Unless redor amber, avoid using a flashlight. It takes up to 20 minutes to fully dark adapt your night vision to see likeme.
- Dwnload a planet arium appon your smart-phoneor tablet. Select the night mode (red). Find and traceout all the constellations you can.
- Access a sky watcher website to find out what's up tonight.
- Ø Next time consider bringing a constellation guide and maybe binoculars.
- Record your experience in the guest book and/or social media and please, mention me, Stella. On, almost forgot, let me hear from you on my Facebook Page- (see over).

photo by Tim Einst

ith the virus presentation opportunities fell off in 2020, though a few zoom based opportunities did emerge. We look forward to picking up the pace in 2021 as the new year progresses.

PRESENTATIONS



Sky of the Month: Stargazing in December 2020 - AY Magazine

View Insights

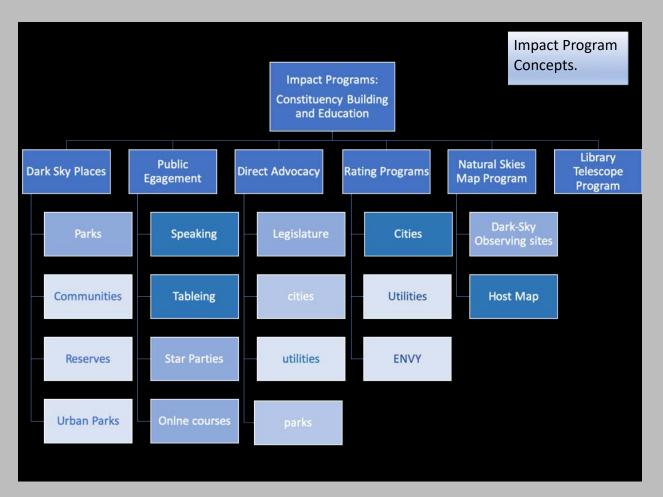
1.5K Post Reach >

BEHAVIORAL IMPACT PROGRAMS

s noted in the introduction, our advocacy is growing, including promoting legislative reform, city ordinances, and lighting policy. Of particular interest is our joint effort with the small town of Gilbert. The smallest incorporated community in the state and located inside the Buffalo National River Park, we have been working with Gilbert for several years now to obtain environmentally responsible lighting for its streets. We were able to recruit a national lighting consulting firm that has agreed, for the sum of one dollar, to assist Gilbert in municipalizing its lights as the utility serving the



town did not offer appropriate fixtures. The utility, however, has been unwilling to allow the community to purchase and replace the existing fixtures. So, we recruited the area's State Senator. She has obtained a grant to cover the cost of new lighting and is now attempting to work a solution with the utility. Eventually, we will succeed in relighting Gilbert. It is hoped this will provide a model for other communities, especially along the Buffalo River.



RATING FOR RESPONSIBLE LIGHTING PRACTICES

The concept here is using the State's Freedom of Information Act to survey and then rate the state's twenty-five largest cities in respect of their response to energy-related environmental challenges, to include outdoor lighting and the state's public utilities in regards to their outdoor lighting practices. We completed the Arkansas Municipal Environmental Survey this last year and were successful in getting prominent coverage in the State's daily newspaper. We hope to do the Utility program this coming year and alternate these reports year to year to encouraging these institutions to take note of the environmental concerns we face and pursue responsible policies and practices in regards to energy and lighting.

State's cities seen as lacking in lighting standards

Group examines pollution policies by Bill Bowden | June 1, 2020 at 7:20 a.m.

Follow

https://www.arkansasonline.com/news/2020/jun/01/cities-seen-as-lacking-in-lighting-stan/

LIBRARY TELESCOPE PROJECT

S everal Astronomy groups have pioneered the library telescope concept here in Arkansas, but the geographical reach has been confined to Central Arkansas and part of the northwest corner of the state. With a funding source available, ANSA has taken this concept out into the state, starting with the counties through which the Buffalo National River runs. While the virus has interrupted the program, we have nonetheless modified and placed seventeen scopes in six rural libraries along with several handheld Unihedron sky meters.

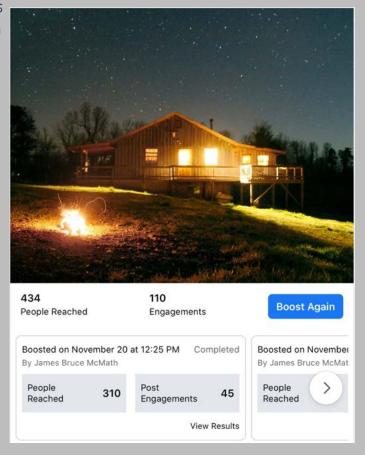
Each scope comes with a special library edition of our Guide to Learning the Constellations, which also incorporates the scope's manual. Each scope has decals linking the user to ANSA's website for the library telescope project.

STELLA'S NATURAL SKY PLACES MAPS

C tella, the Dark-Wise Owl, is emerging as a recognizable mascot for ANSA and Dark-Skies. Her

Natural Sky Places Map program is gaining a following. We have created a map of dark sky places in the state where people can view a near-natural night-time sky. Along with this, we have created a separate but related map of accommodations (cabins and lodges) and campgrounds located in areas of the state where there are nearly naturally dark skies.

To be listed on Stella's hospitality map, a business must demonstrate that it abides by Responsible Lighting Practices and place ANSA's literature in their accommodations. We have begun a program to encourage our subscribers to promote their dark-sky assets more aggressively.



The Arkansas Natural Sky Association is making progress across several fronts, growing in credibility and talent. Completing the Buffalo River Dark-Sky Park designation has been a big boost to ANSA's profile and institutional standing. We are encouraged by early success in some of our projects. Growing out our volunteer resources will be a principal focus in the coming year. There is growing evidence that our efforts a paying off.

Each scope comes with a special library edition of our Guide to Learning the Constellations, which also incorporates the scope's manual. Each scope has decals linking the user to ANSA's website for the library telescope project.