The Astronomical League's Dark Sky Advocate Club

Welcome to the Dark Sky Advocate Club! This program is unlike any other. If you have wanted to do something about a topic so important to our hobby — the loss of our dark skies due to light pollution — this is a way you can help.

Here lies a great opportunity for you, as your enter the Dark Sky Advocate program, to make a positive, dramatic impact on your community that will be long lasting and far reaching. Can you imagine any better way you can influence the future?

Introduction

Light pollution and light trespass are two subtle but pervasive problems that degrade our quality of life and destroy our enjoyment of the night skies. Too many amateur astronomers have silently witnessed the unnecessary destruction of the night, first beginning in the cities but now spreading to the remaining rural areas. We must not choose to ignore this problem.

Objectives

To become a Dark Sky Advocate, the candidate must understand the problem of light pollution. The candidate must know its causes and solutions. The candidate must realize how it affects our society in general, and amateur astronomy in particular. These objectives are achieved by the completion of various activities, some are observing related, most are not.

Eligibility

All Astronomical League members, whether they belong to a club or are individuals registered as a Member-at-Large, Patron, or Lifetime, are eligible

to receive the Dark Sky Advocate award once they meet the qualifying requirements.

This award shall not be counted towards the requirements of the Master Observer Award.

Requirements

To qualify for the award, the Dark Sky Advocate candidate must accumulate at least 75 points within both the Personal Enlightenment and Public Enlightenment sections, giving a total of 150 or more points.

Dark Sky Advocate
Activities List

I. Personal Enlightenment and Education

___5 points **1.** Provide a copy of a local outdoor lighting ordinance. In the document, highlight where good lighting is described.

___10 points **2.** Provide three photographs each of good and bad lights in your area. (A total of 6 photographs are required.) Describe why they are good or bad.

___10 points **3.** Provide three photographs illustrating either the problem of glare or the solution of glare abatement (shielding).

4. Compare the views through an eyepiece under various lighting conditions. The degraded telescope views in a light polluted area dramatically affect our hobby in a very negative manner.

> Draw the same deep sky objects using the same telescope and eyepiece under the three lighting conditions described below. Artistic excellence is not required!
>
> Observe and draw at least one deep sky object of these five types: open cluster (preferably either M35 or M11), globular cluster (preferably either M13 or M3), planetary nebula (preferably either M27 or M57), diffuse nebula (preferably either M16 or M42), and galaxy (preferably either M31 or M81/M82). Negative sightings are acceptable. Objects should be 30° or higher in the sky and there should be no moon present.
>
> Be sure to label each of your drawings with the name of the object, the date and time observed along with the observing conditions and the observing location. Include the telescope aperture and the magnification used.

___10 points i. From a light polluted area (such as a parking lot) with

direct light striking the telescope.

Observing Location: _____
Open Cluster Name: _____
Globular Cluster Name: _____
Planetary Nebula Name: _____
Diffuse Nebula Name: _____
Galaxy Name: _____
Be sure to submit your properly labeled drawings, as requested above, of the five objects.

___10 points ii. From a "city" dark area (no direct light striking the immediate area around the telescope).

Observing Location: _____
Open Cluster Name: _____
Globular Cluster Name: _____
Planetary Nebula Name: _____
Diffuse Nebula Name: _____
Galaxy Name: _____
Be sure to submit your properly labeled drawings, as requested above, of the five objects.

___10 points iii. From a dark sky site that has a limiting magnitude dimmer than magnitude 5.0 (no light striking the immediate area around the telescope).

Observing Location: _____
Open Cluster Name: _____
Globular Cluster Name: _____
Planetary Nebula Name: _____
Diffuse Nebula Name: _____
Galaxy Name: _____
Be sure to submit your properly labeled drawings, as requested above, of the five objects.

5. Estimate the limiting magnitude from both a light polluted and a dark sky observing location. Be sure that there is no Moon in the sky and be sure to label your drawings as requested below.

___10 points i. Star Count

Count and draw all the stars of either Orion or Cygnus from both light polluted and dark sky locations.

Light polluted location: _____
Constellation: _____
Date: _____
Time: _____
Seeing conditions: _____
Be sure to include your drawing.

Dark sky location: _____
Constellation: _____
Date: _____
Time: _____
Seeing conditions: _____
Be sure to include your drawing.

___10 points ii. Time and Day Differences

Select either Orion or Cygnus and do star counts at different times of night, days of the week, and times of the year from the same observing location. Draw the stars that you see.

Observing Location:_____
Constellation: _____

Time: _____
Day of the week: _____
Date: _____
Seeing conditions: _____
Be sure to include your drawing of the constellation.

Time: _____
Day of the week: _____

Date: _____
Seeing conditions: _____
Be sure to include your drawing of the constellation.

Time: _____
Day of the week: _____
Date: _____
Seeing conditions: _____
Be sure to include your drawing of the constellation.

Time: _____
Day of the week: _____
Date: _____
Seeing conditions: _____
Be sure to include your drawing of the constellation.

6. Demonstrate knowledge of the non-astronomical aspects of the issue.

___10 points i. Economic.
Find your electric rate as expressed in cents per kilowatt-hour. Then compute your local annual electrical cost of operating unshielded dusk-to-dawn lights. Be aware that the rate charged may vary during the year. Repeat the calculations using low wattage, shielded lights. Submit your calculations.

___5 points ii. Nature and wildlife.
Submit magazine or newspaper articles that discuss environmental issues and lighting, or submit ads for wildlife friendly fixtures.

___5 points iii. Medical.
Submit magazine or newspaper articles that discuss health issues and lighting.

___5 points iv. Crime.
In your area, when does more crime occur: from 7:00 a.m. to 7:00 p.m. or from 7:00 p.m. to 7:00 a.m.?

Ask your local law enforcement authorities for a break-down on the times of day when crime occurs. Report those statistics. Please include the name of your local police or sheriff department.

Law enforcement Agency: _____
Crime Statistics, 7 a.m. - 7 p.m.: _____
Crime Statistics, 7 p.m. - 7 a.m.: _____

____Total Points out of a maximum of 100. Remember, there must be a total of at least 75 points from this section.

II. Public Enlightenment and Raising Awareness

___20 points **1.** Develop a presentation describing the lighting problem in your area. Include local examples, good and bad. Submit either the presentation itself or its outline. What is your target audience?

___5 points **2.** Prepare and submit a handout for the public that describes the problem and gives solutions.

___10 points **3.** Draft and submit a sample (or actual) letter to government officials that describes the need for better outdoor lighting.

___10 points **4.** Draft and submit a sample (or actual) letter to your local media that discusses the issue. This includes letters-to-the-editor and op-ed pieces to your local newspaper.

___20 points **5.** Give at least three Dark Sky presentations that reach a combined total of fifty or more people.

1a. First Event name: _____
1b. Date: _____
1c. No. people attending: _____

2a. Second Event name: _____
2b. Date: _____
2c. No. people attending: _____

3a. Third Event name: _____
3b. Date: _____
3c. No. people attending: _____

Total number of people attending (needs to be 50 or more):
_____

6. Contact efforts to affect change

___10 points i. Draft and submit a minimum of three sample (or actual) letters to different businesses commending them for their good lighting.

___10 points ii. Draft and submit a minimum of three sample (or actual) letters to different concerns, either private or public, requesting that they upgrade to shielded outdoor lighting.

___5 points **7.** Dillon's Rule. Please answer the following questions:

i. Is your state a Dillon's Rule state or a Home Rule state?
_____

ii. What is enabling legislation?
_____
_____
_____
_____

iii. Who would you contact to introduce enabling legislation?
_____
_____

___10 points **8.** Outdoor lighting ordinance.

What key components should it contain? Refer to the IDA's "Simple Guidelines for Lighting Regulations."
_____
_____
_____
_____
_____
_____

____Total Points out of a maximum of 100. Remember, there must be a total of 75 points or more from this section.

Completion

____Total of both sections: I. Personal Enlightenment and Education and II. Public Enlightenment and Raising Awareness.

Total your points. Once you reach at least 75 points from each section for a combined total of 150 points or more, you may submit all your completed project materials to the program administrator.

Please include your name as you wish it to read on your certificate of completion. Also include the name of your club and indicate if you are an MAL, Patron, or Lifetime member. Make sure all the appropriate designations, labels, dates, times, observing conditions, and all the required information is included. Please indicate where the certificate and pin should be sent after the submitted material is approved.

Submitted materials will not be returned. You may wish to send photocopies instead of the original documents.

Program Administrator:

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Resources

1. Various IDA handouts: provide a suggested list of pertinent IDA material. http://www.darksky.org
   - #26: Economic issues in wasted and inefficient outdoor lighting
   - #51: Lighting and Crime
   - #182: Artificial Lighting and Wildlife — A Moth to a Flame
   - #187: Lighting and Wildlife: 101 Introduction
   - Simple Guidelines for Lighting Regulations
2. “Earth at Night” posters; City light overlay on *Google Earth*

3. Books on why the dark hours are important:
The Ecological Consequences of Artificial Night Lighting
4. Urban observing book:
"City Astronomy," Scagell, Robin, Sky Publishing, 1994.
5. Astronomical League Urban Club:
http://www.astroleague.org/al/obsclubs/urban/urban.html
6. Explanation of Dillon's Rule
"Dillon's Rule and the Birth of Home Rule," by Diane Lang,
Assistant Information Services Director
Reprinted from The Municipal Reporter, December, 1991
7. IDA slide sets.
8. IDA postcard template to Planning and Zoning Commissioners.
9. SELENE (Sensible and Efficient Lighting to Enhance the Nighttime Environment): http://www.selene-ny.org/
How Glare Reduces Safety
10. General overview article: Owen, David, "The Dark Side," *The New Yorker*, August 20, 2007.