2018 Stellafane Convention

The 83rd Convention of Amateur Telescope Makers on Breezy Hill in Springfield, Vermont

43° 16' 41" North Latitude, 72° 31' 10" West Longitude

Thursday, August 9 – Sunday, August 12, 2018

"For it is true that astronomy, from a popular standpoint, is handicapped by the inability of the average workman to own an expensive astronomical telescope. It is also true that if an amateur starts out to build a telescope just for fun, he will find before his labors are over that he has become seriously interested in the wonderful mechanism of our universe. And finally there is understandably the stimulus of being able to unlock the mysteries of the heavens by a tool fashioned by one's own hand."

—Russell W. Porter, Founder of Stellafane, March, 1923

SOME STELLAFANE HISTORY

In 1920, when a decent astronomical telescope was far beyond the average worker's means, Russell W. Porter offered to help some Springfield machine tool factory workers to build their own. Together, they ground, polished, and figured mirrors, completed their telescopes, and began using them, soon becoming thoroughly captivated by amateur astronomy. By 1923 they had formed a club, the Springfield Telescope Makers, and had built Stellafane (originally "Stellar Fane"), our now legendary Clubhouse. By 1925 their activities had drawn the attention of magazine editors including Web Waldron at *Collier's* and Albert Ingalls at *Scientific American*. They visited the club, and soon published articles about telescope making. This generated interest across the country, and the club decided to invite other amateurs to visit. On July 3, 1926, 29 people came to Breezy Hill, and The Stellafane Convention was established. It's been held every year since, except during World War II. The convention grew rapidly, and today nearly a thousand enthusiastic amateurs make the pilgrimage to Springfield.

STELLAFANE EAST

In 1986, faced with the loss of access to a neighboring field that had been the Convention's camping area, the STM, with the support of members who mortgaged their homes, purchased a 40-acre farm across the road from the original Stellafane site. This became known as Stellafane East. In 1998, STM member Harty Beardsley donated another adjacent 45 acres, ensuring that the Convention has room for growth.

THE MCGREGOR OBSERVATORY

The McGregor Observatory at Stellafane East was constructed by the club between 1989 and 1995. It houses a unique instrument—a 13" f/10 Schupmann telescope on a massive computer controlled alt-az mount. For a time it was the largest operating Schupmann in the world. This design, which combines reflective and refractive elements, yields a coma-free and essentially apochromatic image, and is ideal for planetary observation. The Schupmann is operated during Convention. Photo by Dennis di Cicco.

BE SURE TO VISIT THE ORIGINAL STELLAFANE SITE

Since so much of the convention takes place at Stellafane East, it's all too easy to miss the fun of seeing the original Stellafane Clubhouse and the Porter Turret Telescope on Breezy Hill. Catch the shuttlebus near the food tent or the main camping area, or just take the short walk down the road opposite the entry "fruit stand" where you checked in. The original site, including the Clubhouse and the Porter Turret Telescope, was designated a National Historic Landmark in 1989. It remains the location for the Stellafane Convention's optical and mechanical competitions for amateur-built telescopes.

THE STELLAFANE CLUBHOUSE

The Clubhouse was designed by Russell Porter and constructed by the members. The pink color may simply have been that of donated paint, but it has been hallowed by long tradition. Many fascinating memorabilia of the club's earlier days can be seen here. Although it's now a tight fit with today's larger membership roster, the Springfield Telescope Makers still hold some meetings at the Stellafane Clubhouse. Photo is from the 1930s.

THE PORTER TURRET TELESCOPE

The Porter Turret Telescope was constructed in 1930 by the club. Porter had endured more than his share of winter cold on polar expeditions early in his career. Following Hartness's turret refractor design, he devised a way to build a reflecting telescope that also allowed the observer to remain indoors on the coldest winter nights. Extensively renovated in the 1970s and fitted with new optics, the Porter Turret remains an excellent instrument. Photo is from the 1930s.

THE ANDREW SIMONI OBSERVATORY

Now completed on Breezy Hill, this new building houses a restored 1930s spectrohelioscope. **THE SIMONI OBSERVATORY WILL BE FORMALLY DEDICATED AT 4 PM FRIDAY, AUGUST 10.** Light refreshments will be served, followed by tours of the facility, and solar observing if weather permits. An invention of George Hale, the spectrohelioscope produces an image of the sun in any desired visual wavelength. The spectrohelioscope will operate during convention.

Schedule of Events and Presentations

KIDS=ACTIVITY FOR CHILDREN **TEENS**=ACTIVITY FOR TEENS **NTA**=FOR THOSE NEW TO ASTRONOMY **INT**=INTERMEDIATE **ADV**=ADVANCED
ATM=AMATEUR TELESCOPE MAKING **COMP**=TELESCOPE COMPETITION **ALL**=SUITABLE FOR EVERYONE **MCE**=MAJOR CONVENTION EVENT **OBS**=OBSERVING

PLEASE SEE DESCRIPTIONS ON FOLLOWING PAGES FOR MORE INFORMATION

THURSDAY, AUGUST 9, 2018

8:30 am - 5 pm	**Hartness House Workshop: Antique Telescopes, Observatories & Equipment** *Hartness House* Hosted by Tom Spirock **(Separate Registration & Fee for this Workshop)**	
noon- 4 pm	**Large RV Permit Holders must arrive** *Entry Gate* **Please don't arrive before noon!**	
3 pm - 10 pm	**Early Entry Permit Holders can arrive** *Entry Gate* **Please don't arrive before 3!**	
6 pm - 8 pm	**Hartness House Workshop: Antique Telescopes, Observatories & Equipment** *Hartness House* Dinner & Keynote Hosted by Tom Spirock **(Separate Registration & Fee)**	
8:30 pm - midnight	**Observing Olympics** *Observing Fields* Coordinated by Eileen Myers Telescopes & Binoculars	**OBS**
8:30 pm -	**Observing with the Hartness Turret Telescope Observing** *Hartness House* Weather Permitting	**OBS**

FRIDAY, AUGUST 10, 2018

9 am	**Registration Gate Opens**	
9 am - noon	**Coatings** *West of Clubhouse* Alan Ward Mirror Coating	**ADV, ATM**
10 am - 6 pm	**Shuttle Bus Operates** *Bus Stops: Pine Island, Food Tent, Clubhouse*	
10 am - 4 pm	**TELESCOPE MAKING DEMO** *Tent north of T-shirt sales area* Organized by Read Predmore	**ATM**
10 am - 10:30 am	**Intro & Rough Grinding Glenn Jackson**	**ATM**
10:30 am - 11 am	**Fine Grinding Rick Hunter**	**ATM**
11 am - 11:30 am	**Making Dental Stone Tools Junie Esslinger**	**ATM**
11:30 am - noon	**Making Pitch Laps Steve Dodson**	**ATM**
1 pm - 1:45 pm	**Polishing & Figuring Dick Parker**	**ATM**
2 pm - 4 pm	**Testing (Bring your own mirror) Dave Kelly**	**ATM**
11 am - noon	**Astronomy Activities for Children: Meteorite CSI** *McGregor Obs. Library* Kris Larsen Ages 5-12; Limited to first 25	**KIDS**
noon - 1 pm	**Free Time Everyone** *Relax or Enjoy Lunch* No on-site talks or demos scheduled	**ALL**
1 pm - 2 pm	**Solar System Walk** *Meet at M44 (Green Shed) behind Clubhouse* CCSU Students	**NTA**
1 pm - 5 pm	**Stellafane Teen Robotic Project (Requires Signup)** *Bunkhouse* Paul Fucile	**TEENS**
1 pm - 2 pm	**Homemade 15-foot dome observatory** *Flanders Pavilion* Mark Sproul	**INT, ATM**
1 pm - 2 pm	**Night Vision and Live Video for Amateur Astronomy** *McGregor Observatory Library* Martin Hilario	**INT**
1:30 pm - 5:30 pm	**Coatings** *West of Clubhouse* Alan Ward Mirror Coating	**ADV, ATM**
2 pm - 3 pm	**Imaging Large Planetary Nebulas and Supernova Remnants** *Flanders Pavilion* Al Takeda Talk	**INT**
2 pm - 3 pm	**Solar Observing Hour** *Observing Fields* Please set up your Solar Scope and Share	**OBS**
2 pm - 3 pm	**Astronomy Activities for Children: How Telescopes Work** *McGregor Obs. Library* Kris Larsen Ages 5-12; Limited to first 25	**KIDS**
3 pm - 4 pm	**Coatings** *Flanders Pavilion* Alan Ward Talk	**ADV, ATM**
3 pm - 4 pm	**A Survey of Astronomical History: Why Our Heritage Matters** *McGregor Observatory Library* Kevin Johnson	**NTA**
3:30 pm - 5 pm	**Imaging Large Planetary Nebulas and Supernova Remnants** *near Domed Observatory* Al Takeda Demo/Workshop	**INT**
4 pm - 5 pm	**Introduction to Stellafane** *McGregor Observatory Library* Kim & Dennis Cassia	**ALL**
4 pm -	**Simoni Observatory / Spectrohelioscope Dedication** *Northwest of Clubhouse*	**MCE**
4 pm - 5 pm	**Exoplanet Discoveries: The Role of Amateur Astronomers** *Flanders Pavilion* Dennis Conti, Chair AAVSO Exoplanet Section	**INT**
5 pm - 7 pm	**Free Time: Relax or Enjoy Dinner** No on-site talks or demos scheduled	**ALL**
5 pm - 8 pm	**Hartness-Porter ATM Museum Open** *Hartness House* Hosted by Bert Willard, Curator	**ALL**
5 pm - 8 pm	**Telescope Competition Registration** *Clubhouse* Optical and Mechanical Registration	**COMP**
6 pm - 7:30 pm	**Friday Evening Videos** *Flanders Pavilion* Astronomy documentaries for the whole family	**ALL**

7:30 pm	**Friday Evening Informal Talks** *Flanders Pavilion* Bruce Beford, MC Short presentations by Convention Attendees	**MCE**
8:30 pm - midnight	**Observing Olympics** *Observing Fields* Coordinated by Eileen Myers Telescopes & Binoculars	**OBS**
10 pm -	**Telescope Optical Competition** *Fields around Clubhouse*	**COMP**
10 pm	**Registration Gate Closes**	

SATURDAY, AUGUST 11, 2018

7 am	**Registration Gate Opens**	
7 am - noon	**Swap Tables** *Swap Table Area - North of Main Camping Area*	**MCE**
8 am - 9:30 am	**Telescope Competition Registration** *Clubhouse* Mechanical (and Optical if needed) Registration	**COMP**
9 am - noon	**Coatings** *West of Clubhouse* Alan Ward Mirror Coating	**ADV, ATM**
9 am - 5 pm	**Shuttle Bus Operates** *Bus Stops* Bus Stops: Pine Island, Food Tent, Clubhouse	
10 am - 4 pm	**TELESCOPE MAKING DEMO** *Tent north of T-shirt sales area* Organized by Read Predmore	**ATM**
10 am - 10:30 am	**Intro & Rough Grinding** Glenn Jackson	**ATM**
10:30 am - 11 am	**Fine Grinding** Rick Hunter	**ATM**
11 am - 11:30 am	**Making Dental Stone Tools** Junie Esslinger	**ATM**
11:30 am - noon	**Making Pitch Laps** Steve Dodson	**ATM**
1 pm - 1:45 pm	**Polishing & Figuring** Dick Parker	**ATM**
2 pm - 4 pm	**Dobsonian Basics** Ken Slater	**ATM**
10 am - 11 am	**A Dipper Full of Stars** *Flanders Pavilion* Richard Sanderson	**NTA**
10 am - 11:30 am	**Telescope Field Walk** *Meet at Front of Clubhouse* Led by David McGaw	**NTA**
10 am - 11 am	**Introduction to Stellafane** *McGregor Observatory Library* Kim & Dennis Cassia	**ALL**
10 am - 1 pm	**Telescope Mechanical Competition** *Fields around Clubhouse*	**COMP**
11 am - noon	**Astronomy Activities for Children: Comets!** *McGregor Observatory Library* Kris Larsen Ages 5-12; Limited to first 25	**KIDS**
11 am - noon	**Binoculars** *Flanders Pavilion* Phil Harrington	**NTA, INT**
noon- 1 pm	**Free Time** *Relax or Enjoy Lunch* No on-site talks or demos scheduled	**ALL**
1 pm - 2 pm	**Solar System Walk** *Meet at M44 (Green Shed) behind Clubhouse* CCSU Students	**NTA, KIDS**
1 pm - 2 pm	**Astronomy Activities for Children: Saturns and Stuff** *McGregor Observatory Library* Kris Larsen Ages 5-12; Limited to first 25	**KIDS**
1 pm - 2 pm	**American Medical Association On Street Lighting** *Flanders Pavilion* Mario Motta	**INT**
1:30 - 5:30	**Coatings** *West of Clubhouse* Alan Ward Mirror Coating	**ADV, ATM**
2 pm - 3 pm	**Maria Mitchell's Astronomical Legacy** *McGregor Observatory Library* Kris Larsen	**NTA**
2 pm - 3 pm	**Unfinished Business : The Stellafane Spectrohelioscope** *Flanders Pavilion* Matt Considine	**ADV**
2 pm - 3 pm	**Solar Observing Hour** *Observing Fields* Please set up your Solar Scope and Share	**OBS**
3 pm - 4 pm	**History of Amateur Telescope Making before Russell Porter** *Flanders Pavilion* Bart Fried	**ADV**
3 pm - 4 pm	**Variable Stars and their stories** *McGregor Observatory Library* Stella Kafka, Director of the AAVSO	**INT**
4 pm - 5 pm	**Introduction to Telescopes** *McGregor Observatory Library* Glenn Chaple & Alan French	**NTA**
4 pm - 5:30 pm	**Advanced Observing** *Flanders Pavilion* Larry Mitchell	**ADV**
6 pm - 7 pm	**Free Time** *Relax or Enjoy Dinner* No on-site talks or demos scheduled	**ALL**
7 pm -	**Saturday Evening Program & Keynote Talk** *Amphitheater (Flanders Pavilion if rain)* Keynote, Shadowgram, Raffle & Awards	**MCE**
8:30 pm - midnight	**Observing Olympics** *Observing Fields* Coordinated by Eileen Myers Telescopes & Binoculars	**OBS**
10 pm -	**Discover and Enjoy the Night Sky** *(Held regardless of weather)* McGregor Observatory Library Steve Dodson	**NTA**
10 pm	**Telescope Competition Optical Begins (only if not held Friday)** *Fields around Clubhouse*	**COMP**

SUNDAY, AUGUST 12, 2018

8 am - noon	**Convention Cleanup** *Please clean up around your campsite* Please put trash in the dumpsters	**ALL**
9 am - noon	**Hartness-Porter ATM Museum Open** *Hartness House* Hosted by Bert Willard, Curator	**ALL**
10:30 am - 11:30 am	**Observing Olympics** *Hillside below McGregor* Coordinated by Eileen Myers Last awarding of pins	

Event and Presentation Details

FOR CHILDREN

These activities are specifically designed for children, but please note that there are many other activities and talks in the sections below that young people will also find rewarding.

Meteorite CSI

Friday 11 am - noon, McGregor Observatory Library. Ages 5-12; Limited to first 25.

How Telescopes Work

Friday 2 pm - 3 pm, McGregor Observatory Library. Ages 5-12; Limited to first 25

Comets!

Saturday 11 am - noon, McGregor Obs. Library; Ages 5-12; Limited to first 25

Saturns and Stuff

Saturday 1 pm - 2 pm, McGregor Observatory Library, Ages 5-12; Limited to first 25

There will be four 1-hour astronomy workshops for children; each session has a different activity. These astronomy workshops have been held at the Stellafane convention since 1995. Led by Dr. Kristine Larsen, Professor of Astronomy at Central Connecticut State University and a member of the Springfield Telescope Makers, each of the four 1-hour workshops includes several activities geared for children ages 5 - 12.Younger children are welcome but will need help from a parent. Due to space limitations, each workshop is limited to 25 children on a first-come basis. Latecomers may be turned away. Each workshop has a different astronomical activity as listed above.

FOR TEENS

This workshop project is specifically designed for Teens, but please note that there are many other activities and talks in the sections below that young people will also find rewarding

Stellafane Teen Robotic Project

Friday 1 pm - 5 pm, Bunkhouse, Presented by Paul Fucile. (Teens 12-17). This year's Teen Program participants will learn about the science and technology behind NASA's newest Red Planet mission, the Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) spacecraft. Launched on May 5 and now on a 300-million-mile (483-million-kilometer) trip to study the never before examined interior of Mars, this 794 pound (360 kg) spacecraft is due for an Elysium Planitia touch down on November 26, 2018. This will be a demonstration of some of NASA's newest geological sensing capabilities.

This will be a hands-on class working in teams to construct an InSight-inspired technology that will be demonstrated at the Convention. Attendance will be first-come first-served. If you are 100% sure your Teen will attend the convention and will want to attend this event, then you'll need to get them on the list. Please email us directly at robots@stellafane.org. You will receive a manual reply to let you know your status. When space is filled, we will add the next two names to a waiting list. If space is not filled through preregistration we will accept others on a first-come first-served basis at the event, until the class is full.

Note: There will be a lot of specialized instruction so you will need to be on time! Since we will be working with tools and other mechanisms, only closed toe shoes will be allowed.

AMATEUR TELESCOPE MAKING

Mirror Making Demonstrations

Friday and Saturday 10 am– 4 pm (see specific times and topics in schedule on previous pages), tent north of the T-shirt sales area. This is a HANDS-ON mirror making demonstration. Gain first-hand experience working on mirrors at every stage of grinding, polishing and testing. Experienced ATMs will help explain each step of the process and answer any questions you may have. The 24" mirror we have been working on for several years will be available for grinding- please sign the log book when you work on it. **Bring your own mirror for testing between 2 and 4 pm Friday.**

Dobsonian Basics

Saturday 2 pm - 4 pm, tent north of the T-shirt sales area. Ken Slater, creator of the Stellafane Dobsonian described on the STM website, takes you through the basics of constructing a simple and inexpensive astronomical telescope that performs well and can be made with common hand tools.

FOR THOSE NEW TO ASTRONOMY

Solar System Walk

Friday and Saturday 1 pm - 2 pm. Meet at M44 (Green Shed) behind Clubhouse. conducted by Central Connecticut State University Students. To illustrate the vast size of outer space, the Springfield Telescope Makers have constructed a scale model of the solar system, based on the Sun being 12 inches in diameter. At that scale, the Earth would be approximately 1/10 of an inch in diameter and 107 feet from the Sun. Jupiter would be 1.2 inches in diameter and approximately 560 feet from the Sun.

The Solar System Walk begins behind the Clubhouse and proceeds down the road going towards the Stellafane camping area. At the appropriate distance from the scale model of the Sun, there are stations with the appropriate planet, built to scale, and a short description of each planet. The Solar System walk can be taken on your own at any time during the convention. However, a guided walk is available at the times mentioned above, when a docent will provide additional information about the "Solar System Walk" and each particular planet. The walk takes approximately ¾ of an hour, if you walk all the way to the planet Neptune, with a total distance of 3,232 feet or a little over ½ of a mile.

A Survey of Astronomical History: Why Our Heritage Matters

Friday 3 pm - 4 pm. McGregor Observatory Library, Presented by Kevin Johnson. A core role of the Society for the History of Astronomy, founded at Wadham College, Oxford in 2002, was to record astronomy history at the local level. The aim was to collate details of astronomers, their equipment and their sites within Great Britain and Ireland. The archive is an online resource that is ordered on a geographical basis – counties. The talk will outline and explain the work of the survey and provide specific case studies of fresh findings and highlight why they are important and what we can learn from these discoveries.

Introduction to Stellafane

Friday 4 pm - 5 pm. and Saturday 10 am - 11 am. McGregor Observatory Library. Presented by Kim & Dennis Cassia. Are you familiar with these terms: "The Pink", "Tent Talks" or "The Turret"? If not, if this is your first time attending the Stellafane convention, or if you are returning and want to learn more about who the Springfield Telescope Makers are, as well as what is going on during the convention, then this presentation is for you.

Topics include, but are not limited to: A short history of Stellafane, a description of our site, including the buildings and landmarks, descriptions of the scheduled talks and activities, services available at Stellafane, local services off site, etc., in addition to answering any questions you may have about the convention.

A Dipper Full of Stars

Saturday 10 am - 11 am, Flanders Pavilion. Presented by Richard Sanderson. Using stunning images of constellations, planets, and celestial objects, Richard Sanderson will lead an interpretive tour of the summer nighttime sky. He will describe how the sky appears to move throughout the night and from season to season, and explain the significance of the North Star. He will speculate about life on other worlds and show many of the prominent summer constellations. The presentation is aimed at beginners of all ages.

Telescope Field Walk

Saturday 10 am - 11:30 am, Meet at Front of Clubhouse. Led by David McGaw. During the "Telescope Field Walk" experienced Amateur Telescope Makers will guide small groups through the fields around the Clubhouse, where the telescopes that will be participating in the mechanical competition will be set up. They will describe the various types of optical designs and mounting configurations that will be on display, point out the subtle details that go into award winning telescopes and be available to answer your questions.

Binoculars

Saturday 11 am - noon, Flanders Pavilion. Presented by Phil Harrington. Binoculars are NOT just for beginners, as this talk will stress. After various binocular-related terms are defined, Phil will offer consumer tips to help the audience select astronomically worthy binoculars from a vast ocean of models currently available.

Maria Mitchell's Astronomical Legacy

Saturday 2 pm - 3 pm, McGregor Observatory Library. Presented by Kris Larsen.Maria Mitchell (1818-1889) was the first American women astronomer. As an observer, educator, and popularizer of astronomy, she played a pivotal role in shaping 19th century astronomy – and beyond. This talk celebrates the 200th anniversary of her birth and her lasting legacy.

Introduction to Telescopes

Saturday 4 pm - 5 pm, McGregor Observatory Library. Presented by Glenn Chaple and Alan French. Adults and youngsters often become interested in astronomy and acquiring a telescope for exploring the heavens. With the confusing array of telescopes on the market, buying your first telescope or a telescope for a child can be intimidating. In this program Alan French and Glenn Chaple will cover telescope basics (types, mounts, and eyepieces), telescopes suitable for children, and introduce you to observing and finding sights in the night sky with small backyard telescopes.

Discover and Enjoy the Night Sky

Saturday beginning at 10 pm (Held regardless of weather), McGregor Observatory Library. Presented by Steve Dodson. Using free Stellarium software, Steve will introduce beginners to observing the sky, including identifying the constellations, the Milky Way, and planets. Weather permitting we shall work outdoors after a brief, fun introduction in the Library.

INTERMEDIATE LEVEL ASTRONOMY

Homemade 15-foot dome observatory

Friday 1 pm - 2 pm, Flanders Pavilion. Presented by Mark Sproul. Observatory Domes are expensive. You can easily build one out of materials from your local home improvement store. It takes time and dedication. Depending on the size, it can take lots of time, but the results are worth it. Mark will show the steps involved to making your own dome.

Night Vision and Live Video for Amateur Astronomy

Friday 1 pm - 2 pm, McGregor Observatory Library. Presented by Martin Hilario. Martin Hilario of the Albuquerque Astronomical Society will survey some extraordinary developments in electronically enhanced imaging as applied to amateur astronomy.

Imaging Large Planetary Nebulas and Supernova Remnants

Talk Friday 2 pm - 3 pm, at the Flanders Pavilion, and **demonstration/workshop Friday 3:30 pm - 5 pm** near the domed observatory on the observing field, presented by Al Takeda.

When we look at the Sun and Moon we see that their angular size is about a half a degree. They are the largest angular sized astronomical objects that we normally experience. However, did you know that there are other deep sky objects that subtend angles greater than 3 degrees?

In this talk, Al will discuss how to image those fairly elusive but very large planetary nebulas and supernova remnants. Topics will include using different catalogs to find these objects, the type of cameras and optics to use, and helpful filters. He will also briefly talk about how to post process those captured images.

After his talk, Al will demonstrate some of these techniques next to the Domed Observatory.

Exoplanet Discoveries: The Role of Amateur Astronomers

Friday 4 pm - 5 pm, Flanders Pavilion. Presented by Dennis Conti, Chair AAVSO Exoplanet Section. The launch of the TESS exoplanet space telescope is the next step in our quest for remote worlds that are capable of supporting life. Although TESS promises to discover many more exoplanets than Kepler, especially those of near-Earth size, it can't accomplish its science objective without ground-based observations. This talk will discuss how amateur astronomers conduct exoplanet observations and, in particular, how they can materially contribute to the TESS mission.

American Medical Association On Street Lighting

Saturday 1 pm - 2 pm, Flanders Pavilion. Presented by Mario Motta. The American Medical Association (AMA) has adopted an official policy statement about street lighting: use low blue LEDs. Mario is the principle author of this policy statement. Mario will relate his personal ongoing issues with members of the Illuminating Engineering Society (IES), the organization which makes the streetlight standards for the U.S. He will include examples of harsh LED street lighting, and will discuss the damage it creates in the environment as well as its adverse effects on human health. Mario will provide details on preferred LED street lighting, explain the differences in color temperatures, and show examples of cities that are following the AMA recommendations.

Variable Stars and their stories

Saturday 3 pm - 4 pm, McGregor Observatory Library. Presented by Stella Kafka, Director of the AAVSO. Variable stars have always been the most intriguing (and fun) targets for observers, professional and amateur alike. Stellar variability, both intrinsic and extrinsic, provides unique insights into critical stages of stellar evolution, helps determine distances to nearby galaxies, and adds to our understanding of explosion physics and chemical enrichment of the Milky Way.

Dr. Kafka will introduce some of the most common aspects of stellar variability and their significance in astrophysics, discuss their common light curve identifiers, and present work by AAVSO observers that has led to cutting-edge scientific discoveries throughout the years. Finally, she will discuss how you can participate in variable star observations from your back yard, contributing to the AAVSO International Database and to cutting-edge science.

ADVANCED LEVEL ASTRONOMY

Mirror Coating

Alan Ward's portable coating machine is west of the clubhouse and will be coating attendees' mirrors on a first-come, first-served basis.

Friday 9 am - noon

Friday 1:30 pm - 5:30 pm

Saturday 9 am - noon

Saturday 1:30 pm - 5:30 pm

Coatings

Friday 3 pm - 4 pm, Flanders Pavilion. Presented by Alan Ward. The optical surfaces of all modern quality astronomical instruments are either coated and/or oiled-spaced with extremely thin layers of metallic/dielectric or liquid materials to improve optical performance. This presentation will describe the mechanics of depositing these materials and the theory of thin-film interference, and give an overview of what every telescope user should know about the many available optical coatings/oilings for lens/mirrors and how to care for them.

~~Un~~Finished Business : The Stellafane Spectrohelioscope

Saturday 2 pm - 3 pm, Flanders Pavilion. Presented by Matt Considine. Picking up from where Matt's 2013 presentation finished, this talk will detail the construction of the observatory housing the Stellafane Spectrohelioscope, the reproduction of missing components, the initial setup to get 'first light', and potential improvements going forward.

History of Amateur Telescope Making before Russell Porter

Saturday 3 pm - 4 pm, Flanders Pavilion. Presented by Bart Fried. Many of the Stellafane attendees are active and successful amateur telescope makers. And many have even won awards at Stellafane's famous amateur telescope making competition. But is Stellafane truly the birthplace of Amateur Telescope Making? In fact, our storied ATM's are really the same as the proverbial 'dwarfs astride the shoulders of giants. [They] master their wisdom and move beyond it.' But just who were these 'giants' with broad shoulders that the world's ATM's owe a debt of gratitude? Not only Russell Porter, they were the amateur telescope makers that have been at the forefront of telescope making and optical development from the very beginning of the telescope. Their willingness to share results and methods eventually opened up the door to allow any person of modest means and ability to make his or her own telescope - and unlock the Universe! This presentation will illuminate those early ATM's and examine the line of succession from the earliest experimenters - some well-known and some almost totally forgotten - through the telescope making movement of pre-WWII America.

Advanced Observing

Saturday 4 pm - 5:30 pm, Flanders Pavilion. Presented by Larry Mitchell. Larry Mitchell's talk will cover this year's "Observing Olympics" program: "Visual Observing - More Hidden Gems of Stellafane - 2018". Larry will discuss in some detail what these objects are, why they are there, and what they are doing. His emphasis will be on visual observing and what these magnificent objects really look like through a telescope, rather than from a camera image.

OTHER PROGRAMS SUITABLE FOR EVERYONE

Solar Observing

Friday and Saturday 2-3 pm, in the observing fields near the Pink Clubhouse and the McGregor Observatory. All attendees with solar filters or projection set-ups are encouraged to share the sun with other attendees. The McGregor will be set up for solar observing as well.

The Porter/Hartness Museum of Amateur Telescope Making

Open Friday from 5 pm to 8 pm and Sunday from 9 am to noon. The Porter/Hartness Museum of Amateur Telescope Making is located in the underground rooms at the Hartness House Inn in Springfield. Admission is free. Follow the signs in town to the Hartness House at 30 Orchard Street. Many of the items on display are by or about Russell W. Porter,

continued...

including the Springfield and Garden telescopes. His artwork traces his arctic exploration years to his work on the 200" Palomar telescope, culminating in his famous cutaway drawings. Other items of interest include early telescopes and mirror making parts. The Hartness turret telescope, with its 10" Brashear objective, may also be inspected.

Friday Evening Videos

Friday at 6 to 7:30 pm in the Flanders Pavilion. Short astronomy documentaries for the whole family.

STELLAFANE OBSERVING OLYMPICS

Thursday and Friday evenings from 8:30 to midnight, and Saturday following the Keynote program until midnight, in the Observing Fields below the McGregor Observatory, Coordinated by Eileen Myers. Larry Mitchell has curated a list of 20 deep-sky objects visible through 4" and larger telescopes with good seeing, and Phil Harrington has curated a list of 20 deep-sky objects visible with binoculars. You can pick up copies of the lists at the Clubhouse, the McGregor Observatory, and the Flanders Pavilion. Those who find 15 of the objects with binoculars or telescope will be awarded a special pin. For more information see or website at ***stellafane.org/convention/2018/2018-observing.***

THE STELLAFANE RAFFLE

The famous Stellafane Raffle offers spectacular donated prizes to lucky winners, typically including thousands of dollars worth of optical gear and many desirable astronomy and telescope-making books. Your odds of winning are really good. The money raised goes to support next year's convention and to make capital improvements to the convention site. Tickets are available next to the T-shirt table (across from the food tent) and from designated STM members roaming the site. We appreciate the generousity of our donors, and your support by purchasing raffle tickets. Thank you all very much!

SIMONI OBSERVATORY DEDICATION

Friday 4 pm , Northwest of Clubhouse. Our new Simoni Observatory, which houses the historic Cook Spectrohelioscope, will be dedicated to the memory of Andrew Simoni. We will have a brief ceremony, some light refreshments, and tours. If the sun is shining, we will be observing the sun through the restored Spectrohelioscope.

FRIDAY EVENING INFORMAL TALKS

Fri 7:30 pm, Flanders Pavilion. Bruce Beford, MC. Short presentations by Convention Attendees. If you wish to contribute a short talk during this session, please register online. Talks are limited to 10 minutes and 20 slides. The time limit will be strictly enforced! A digital projector will be available for your use.

SATURDAY SWAP TABLES

Saturday 7 am to noon. The Swap Tables (located at the northeast edge of the main camping/parking area) are provided to give amateurs an opportunity to trade, buy or sell their surplus astronomical and telescope related items. (Important: see Swap Table Policy, Page 7.

SATURDAY KEYNOTE PROGRAM

7 pm Saturday, in the hillside amphitheater. (In case of inclement weather, the program will be held inside the Flanders Pavilion). John Gallagher, of the Springfield Telescope Makers, will be master of ceremonies.

- **Greetings, announcements, children's raffle and raffle drawing**
- **Stellafane Shadowgram: Remembering Stephen Hawking: The Venn Diagram of Two Lives in the Multiverse, by Kristine Larsen, PhD**
- **Presentation of Telescope Competition Awards**
- **Stellafane Keynote Talk by Samuel Hale & Todd Mason, Mount Wilson Institute & Mason Productions**

SUNDAY MORNING CLEANUP

8 am - noon Sunday, please clean up around your campsite and parking area. All trash should be deposited in one of the large dumpsters by the Food Tent or Exit Lane. Please make sure there are no obstacles to grass mowing in the fields–any rocks, stakes, or other hazards should be returned to the woods or taken to the dumpsters. If you would like to take down rebar and string, we would appreciate that. Pile rebar and string on the side of the road, where it will be easy for us to find and pick up. Thanks!

Advice, Guidelines, and Policies

To ensure your enjoyment and safety at The Stellafane Convention, please read this section carefully.

Emergencies and First Aid

In case of emergency please contact Security (by the gate) or any STM member. If you have a family service radio, you may contact convention staff via channel 7 (please avoid non-emergency use of this channel at convention). **First aid kits are located in the Bunkhouse, the McGregor Observatory, and the Clubhouse.** We have trained medical staff on site.

Where to Set Up your Telescope

We strongly recommend that you set up your telescope in the fields around the Clubhouse or in the field to the south of the McGregor Observatory. Your telescope does not have to be entered in the competition, and **all telescopes are welcome, commercial or homemade**. You may not set up your telescope in a designated parking area. The darkest conditions are available near the Clubhouse, as far south as possible. Please consult the site map as well as the signs posted throughout the convention site for the designated parking locations. Note: You can drive up to the Clubhouse area in daylight hours to drop off and pick up your telescope but there is no extended parking as space is extremely limited. Please move your car to a designated parking area at Stellafane East as soon as possible.

Lighting Policy

Stellafane does not allow open white lights on clear nights, except for one half hour after the Friday and Saturday evening talks end. Vehicular travel after this time is strongly discouraged and is done only at the risk of the operator. Red filter paper for flashlights is available at the Clubhouse and at the Bunkhouse. We thank you for your cooperation.

Laser Pointer Policy

Lasers pointers can be a helpful tools for astronomers, but can be dangerous if not properly used. Direct viewing of a laser-pointer beam, even briefly and at a distance of a kilometer or two, has the potential to cause temporary blindness – the same effect you get right after a flash photo is taken – or afterimages. These effects last anywhere from seconds to minutes. Glare, which is a reduction or loss of central vision, lasts only as long as exposure to the beam. All these effects could be disastrous if they struck a person operating machinery, driving a car, or flying a plane.

To help use your laser tools safely, the Springfield Telescope Makers, Inc. has adopted these recommendations as policy. These are based on the suggestions from the Laser Institute of America and published in May 2005 by *Sky and Telescope.*

- **Laser pointers are designed to illuminate inanimate objects. Never shine a laser pointer toward any person, aircraft, or other vehicle.**
- **Never look directly into a beam of a laser pointer of any type.**
- **Do not allow children to use a laser pointer unsupervised. Laser pointers are not toys.**
- **If your telescope is equipped with a laser pointer that has a "constant on" setting, do not leave the instrument unattended with the laser switched on.**
- **Do not aim a laser pointer towards mirrors or other shiny surfaces. The reflected beam may inadvertently strike someone in the eye.**
- **Do not aim a laser pointer skyward if you hear or see an aircraft of any kind flying overhead.**
- **Laser pointers shall not be used in the Clubhouse observing fields.**
- **Additional laser use restrictions may be put into place by the Springfield Telescope Makers, Inc. as situations arise.**
- **The convention staff, at its sole discretion, may terminate or prohibit use of lasers by any person on Springfield Telescope Makers, Inc. property.**

Swap Table Policy

For the sake of historical continuity, to preserve the uniqueness of the Stellafane convention and to encourage conventioneers to build their own instruments, the Springfield Telescope Makers, Inc. do not allow commercial sales, of any kind, at the Stellafane convention. All swap table sales must comply, in concept, with the above objective but are also specifically subject to the following criteria:

- **Only surplus astronomical, telescope and telescope making related items may be sold.**
- **Each person will be allowed 16 square feet of table or ground space.**
- **Items which have the appearance of being specifically purchased or manufactured for sale at the Swap Tables may not be sold.**
- **All sales must take place within the designated Swap Table area only between 7 am and 12 noon, the Saturday of the Stellafane convention.**

The Springfield Telescope Makers, Inc. may choose to grant a limited exception to the above policies to astronomy related organizations for their fundraising. Any request for an exemption must be made, in writing, at least one month prior to the convention. If granted, the President of the Springfield Telescope Makers, Inc. will notify the requesting organization in writing.

Any member of the Springfield Telescope Makers, Inc. has the authority to determine whether a party is in compliance with the established regulations. Any person who is found to be in violation of the stated policies will be required to comply. Failing compliance, the offending party will be asked to leave the convention and may be escorted from the premises by convention security.

The Springfield Telescope Makers, Inc. encourages those with questions regarding this policy to contact the Club via the Stellafane web page (www.stellafane.org). During the convention, any questions regarding this policy, the appropriateness of items being displayed, or any information being disseminated, should be directed to a member of the Springfield Telescope Makers, Inc.

Food Service

The main food service tent is located just to the south of the Bunkhouse. Note: This food service tent is open all night if you need a snack and/or coffee during your observing session.

Food service will be available for Thursday dinner and for Friday breakfast if you are using our Early Entry Permit option.

Shuttle Bus

The Shuttle Bus makes two stops in Stellafane East, one by the Food Tent and one by the main Camping Area (See Stellafane East Site Map). It makes one stop on Breezy Hill near the Clubhouse.

Family Service Radios

The convention staff uses family service radio channel 7 to facilitate communications during the convention. **Please avoid use of channel 7 when you are at the convention site, except in emergencies.**

2 Meter Repeater: W1STM

There is usually a 2 meter Ham Radio repeater, call sign W1STM, operating at 14,527 MHz on site.

Cell Phone Service

Be advised that cell phone service is "spotty" in hilly southern Vermont. Good coverage is generally available near interstates and town centers, but gets less reliable as you move off into the countryside. At Stellafane, you might have to move about the site to get a connection, but most carriers do have a useable signal at least in some (higher) areas of our site. If you can see Mt. Ascutney to the north, you will likely have service.

Campfires Not Allowed

Open campfires are not permitted. If you are camping and/or cooking on the Stellafane site, you must use approved cooking equipment such as a portable grill or camp stove. Do not cut any trees. Also, always be careful about disposal of cigarette butts.

Golf Carts and ATVs

No personal golf carts or ATVs will be allowed at convention. Only golf carts and ATVs being used for official convention purposes will be allowed.

Generators and Recharging

Use of generators is discouraged at Convention. Properly muffled RV generators and quiet portable generators of 1,000 watts or less may be used between the hours of 9 am to 6 pm in the camping areas only. Generators may never be used in the observing fields, after dark, or at other locations at Stellafane. The generator must not create a hazard. Any complaint of unsafe operation or excessive noise will immediately cause the generator to be banned from operation.

There are outlets along the walls of both the McGregor observatory and the Flanders Pavilion that may be used for recharging batteries and portable devices. However, the Springfield Telescope Makers accept no responsibility for unattended property.

Pet Policy

The Springfield Telescope Makers, Inc. welcomes you to bring your pets to the Stellafane convention, provided the following rules are followed:

- **Pets must be confined, leashed or otherwise under the physical control of a person at all times. Leashes may not exceed 6 feet in length. Pets that are tethered at the campsite cannot be left unattended for more than 30 minutes. Pets may not be tied to trees, bushes, tables or shelter facilities, even when the owners are present.**
- **Pets must be well-behaved at all times. Pets must be confined in the owner's camping unit during quiet hours (11 pm - 8 am).**
- **Pet owners are required to pick up after their pets and properly dispose of all pet droppings in trash receptacles.**
- **Any pet that is noisy, dangerous, intimidating or destructive will not be allowed to remain at the Convention.**

Failure to comply with the above rules will result in you and your pet being asked to leave the convention; you may be escorted from the premises by convention security. The Springfield Telescope Makers, Inc. thanks you in advance for helping to make the Stellafane convention more enjoyable for everyone. Enjoy the convention!

Stellafane Endowment Fund

The Endowment Fund is intended to ensure that the birthplace of amateur telescope making is preserved for future generations by providing adequate funding to cover the basic costs of maintaining the Stellafane Clubhouse, the Porter and McGregor observatories, and other existing and future buildings and properties owned by the Springfield Telescope Makers, Inc. If you are interested in supporting the endowment fund you may do so by mail or online with our Donation Form at stellafane.org/help/donate-form.html. Thanks!

Lost and Found

The lost and found is located at the t-shirt table across from the food tent.

Stellafane Website

We Want Your Photos and Videos!

The Stellafane website **(http://Stellafane.org)** offers extensive how-to information and links on telescope making, and detailed Stellafane history. You'll also find accounts and photos from past conventions there, and of course we will post many photos from this convention in the weeks following the event, as well as the list of competition winners.

Your submissions are very welcome—please send your photos (or links to those you've uploaded to sharing sites) to webmaster@stellafane.org. Videos are welcomed as well, but please don't send them directly; use a sharing service like YouTube or Vimeo and send us a link.

+ EMERGENCIES AND FIRST AID +

IN CASE OF EMERGENCY PLEASE CONTACT SECURITY (BY THE GATE) OR ANY STM MEMBER. If you have a family service radio, you may contact convention staff via channel 7 (please avoid non-emergency use of this channel at convention). **First aid kits are located in the Bunkhouse, the McGregor Observatory, and the Stellafane Clubhouse.** We have trained medical staff on site.

The Telescope Competition

The Heart and Soul of Stellafane

If you have built a telescope or a special gadget, or restored a historical instrument, we strongly encourage you to enter it in the competition!

Note: You can drive up to the Clubhouse area during daylight hours Friday or Saturday to drop off and pick up your telescope, but there is no extended parking as space is extremely limited. Please move your car to a designated parking area at Stellafane East as soon as possible.

Telescopes may be entered in either competition or both competitions if you wish.

First Homemade Telescope Certificate

In order to further encourage and recognize telescope building, we are offering a certificate of recognition for first time telescope makers. You do not have to enter the competition if you do not want to, but you must bring your first homemade telescope to Breezy Hill and display it. Please register ahead of time online and check in at the Clubhouse. You will be awarded a certificate recognizing your efforts in building and displaying your first homemade telescope at Stellafane, and your name will be shown on the screen at the Saturday night program.

Master Class

In order to encourage first-time entrants to enter their scopes without feeling that they must be ready to compete with previous first-place winners and optical professionals who enter their amateur work, we have established a separate competition class for entrants with a track record of high achievement. Rules are available at the registration table.

Optical Competition

2018 Optical Judging Chairman: Rick Hunter

Registration for the optical competition will take place on Friday from 5 pm to 8 pm in the Clubhouse. Keep in mind that if you have registered your instrument online, you must still check in at the Clubhouse Friday from 5 pm to 8 pm or your telescope will not be judged! Set up your scope on Breezy Hill before you check in and inform the judges of the location of your scope. If the position of your scope changes it is your responsibility to report its new location to the judges in the Clubhouse. Failure to do so will result in your scope not being judged!

All telescopes in the competition **must be fitted with an eyepiece with a focal length, in millimeters, approximately equal to the focal ratio of the instrument**. Your instrument must be properly collimated before judging begins at 10 pm. Also, **be prepared to point your scope at the star Altair** when the judges arrive. Please note that the judges may inspect your telescope more than once. Therefore, you should remain on the field with your instrument until the preliminary results are announced via loudspeaker. Note that judging can last until 2 or 3 am!

If the weather permits the completion of the judging on Friday night, the optical judging will be closed for the duration of the convention and optical awards will be presented during the Saturday evening program. If the optical judging cannot be completed Friday night, it will be continued on Saturday night, weather permitting. Additional optical entries may be accepted on Saturday, at the discretion of the judges. To inquire about this possibility, please ask a judging representative in the Clubhouse from 5 pm to 8 pm on Friday or from 8 am to 9:30 am on Saturday.

In the event that the competition will have to be continued Saturday, some telescopes that were judged on Friday might need to be judged again. Please inquire with the judges if your scope will need to be available again on Saturday. If the optical judging cannot be completed by the end of Saturday night, a partial field of optical excellence awards may be given, at the discretion of the judges.

Please note that it is the intention of the Stellafane judging committee to have the optical competition completed Friday night, weather permitting. Therefore, to ensure that your instrument is judged you must be registered for the Friday night judging.

Clarification on "small" vs. "large" Newtonians: The small category includes any mirror of 12.5 inches optical diameter or less; the "large" category is for mirrors that are greater than 12.5 inches in diameter.

Mechanical Competition

2018 Mechanical Judging Chairman: Chris Houghton

Registration for the mechanical competition will be between 8 am and 9:30 am Saturday morning in the Clubhouse. Keep in mind that if you have registered your instrument online, you must still check in at the Clubhouse Saturday morning or your telescope will not be judged. The telescope judging for mechanical excellence will begin at 10 am so please register your telescope as early as possible.

Only telescopes that are operative both mechanically and optically will be accepted in the mechanical competition. The judges will visit the telescopes in several small groups. You must attend your telescope until the end of the competition is announced via the loudspeaker. Be prepared to describe any special construction techniques and components to the judges. Awards for mechanical design, craftsmanship, special gadgets, restoration of historical instruments and junior telescopes, made by persons less than 16 years of age, will be awarded at the Saturday evening talks.

Mechanical design vs. craftsmanship: the mechanical award is for the design of the instrument, how unique it is compared with prior art, and its effectiveness in providing a useful instrument, while the craftsmanship award is for execution (how well the design was translated into a workable and functional instrument).

LAST YEAR'S COMPETITION WINNERS

OPTICAL

Michael Hill, Marlboro, MA, 4¼-in f/10 Newt-AltAz, 1st Place Small Optical

James D. Lowenthal, Northampton, MA, 6-in f/8 Newt-GEM, 2nd Place Small Optical

Larry Shaper, Thetford Center, VT, 10¾-in f/6.5 Newt-Dob, 3rd Place Small Optical

MECHANICAL/CRAFTSMANSHIP

Ed Jones, Cincinnati, OH, Schiefspiegler-AltAz, 1st Place Mech Design (Tie with his other entry) 3rd Place Craftsmanship (Tie with Michael Hill)

Ed Jones, Cincinnati, OH, Jones Medial telescope, 1st Place Mech Design (Tie with his other entry)

Larry Shaper, Thetford Center, VT, 10¾-in f/6.5 Newt-Dob, 2nd Place Mechanical Design

Russel Jolly, Rowe, MA, 10-in f/5.6 Newt-Dob, 3rd Place Mechanical Design; 2nd Place Craftsmanship

Michael Hill, Marlboro, MA, 4¼-in f/10 Newt-AltAz, 3rd Place Craftsmanship (Tie with Ed Jones)

Joe Lemay, Falmouth, MA, 4¼-in f/4 Newt-Dob Carry-On Scope, Honorable Mention Mechanical Design

MASTER CLASS

Alan Ward, Sudbury, ON, Canada, 6-in f/10 Refractor-AltAz, 1st Place Compound Optical

Steve Benson, Walpole, NH, 6-in f/10 Refractor, 2nd Place Compound Optical

Robert P. Horton, Foster, RI, 6-in f/6.5 Newt-GEM, 1st Place, Small Optical

David Kelly, Easthampton, MA, 12½-in f/4.5 Newt-Dob; 2nd Place Small Optical; 1st Place, Mechanical Design; 1st Place, Craftsmanship

Pierre Lemay, Blainville, Canada, 8-in f/5 Newt on Ball Mount, 2nd Place Mechanical Design

SPECIAL AWARDS

John Paladini, Hopac, NY, Eyepiece, 1st Place Innovative Component Award

Ed Jones, Cincinnati, OH, Jones Medial telescope, 2nd Place Innovative Component Award

Tom Kiehl, Canton, OH, 10-in f/5 Newt-GEM, 1st Place Antique Restoration Award

Chris Stewart, South Africa, 'Stewart Mount', 1st Place Special Award; Truss Coupling, Honorable Mention Innovative Component Award; 'Infinity Finder,' Honorable Mention Innovative Component Award.

Alan Ward, Sudbury, ON, Canada, 6-in f/10 Refractor-AltAz, 2nd Place Special Award

Pierre Lemay, Blainville, Canada, 8-in f/5 Newt on Ball Mount, 3rd place innovative component award

James M. Synge, Lexington, MA, Transiting Exoplanet Detector, 3rd Place Special Award