

2015 Stellafane Convention

*The 80th Convention of Amateur Telescope Makers on Breezy Hill in Springfield, Vermont
43° 16' 41" North Latitude, 72° 31' 10" West Longitude*

Thursday, August 13 to Sunday, August 16, 2015

"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 a group of Springfield machine tool factory workers 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, our now legendary clubhouse. In 1925 their activities drew the attention of Albert Ingalls, an editor at *Scientific American*. He visited the club, and soon began publishing articles by Porter and others 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 the Second World War. The convention grew rapidly, and today around 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 pink 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, who had endured more than his share of winter cold on polar expeditions early in his career, invented a design that allowed the observer to remain indoors and comfortable on the coldest winter nights. Extensively renovated including new optics in the 1970s, the Porter Turret remains an excellent instrument. Photo is from the 1930s.



EMERGENCIES AND FIRST AID AT CONVENTION:

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 Pink Clubhouse.**
We have trained medical staff on site.

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

THURSDAY, AUGUST 13, 2015

8:30 am - 5 pm	Hartness House Workshop: Innovation in Astronomy Education & Outreach	Hartness House	Separate Registration and Fees for this Workshop
12 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: Innovation in Astronomy Education & Outreach	Hartness House	Dinner (Separate Registration)

FRIDAY, AUGUST 14, 2015

9 am	Registration Gate Opens		
10 am - 6 pm	Shuttle Bus Operates	Bus Stops: Pine Island, Food Tent, Pink Clubhouse	
10 am - 4 pm	Telescope Making Demo	Tent north of Pavilion	Organized by Glenn Jackson ATM
10 am - 10:30 am	Telescope Making Demo: Intro & Rough Grinding	Tent north of Pavilion	Rick Hunter ATM
10:30 am - 11 am	Telescope Making Demo: Fine Grinding	Tent north of Pavilion	Rick Hunter ATM
11 am - 12 noon	Astronomy Activities for Children: Starry Starry Night	McGregor Observatory Library	Ages 5-12; Limited to first 25 KIDS
11 am - 12 noon	The History of New England Astronomy	Flanders Pavilion	Carl Malinkowski NTA
11 am - 11:30 am	Telescope Making Demo: Making Dental Stone Tools	Tent north of Pavilion	Junie Esslinger ATM
11:30 am - noon	Telescope Making Demo: Making Pitch Laps	Tent north of Pavilion	Phil Rounseville ATM
1 pm - 2 pm	These Are Not Your Mother's Sundials	Flanders Pavilion	Sara J. Schechner INT
1 pm - 2 pm	Solar System Walk	Meet at Green Shed near Clubhouse	Allen Tinker NTA
1 pm - 5 pm	Stellafane Rosetta Project (requires advance signup)	Mirror Lab room in the Flanders Pavilion	Paul Fucile TEENS
1 pm - 1:45 pm	Telescope Making Demo: Polishing & Figuring	Tent north of Pavilion	Dave Groski ATM
2 pm - 4 pm	Telescope Making Demo: Testing (bring your own mirror)	Tent north of Pavilion	Dave Kelly ATM
2 pm - 3 pm	Astronomy Activities for Children: You Light Up My Life	McGregor Observatory Library	Ages 5-12; Limited to first 25 KIDS
2 pm - 3 pm	Solar Observing Hour	Observing Fields	Please set up your solar scope and share ALL
2 pm - 3 pm	Deep Sky Imaging with Small Scopes	Flanders Pavilion	Al Takeda INT
3 pm - 4 pm	Observing the Solar System's Minor Moons	Flanders Pavilion	Terry Trees INT
3 pm - 4 pm	Breezy Hill Rocks!	Meet at Pink Clubhouse	Jessica Johnson A Geology Tour TEENS
3 pm - 4 pm	Telescope Making Demo: Dobsonian Basics	Tent north of Pavilion	Ken Slater ATM
4 pm - 5 pm	Sheep, Shadows & Showers: Chasing a Solar Eclipse in the Faroe Islands	McGregor Observatory Library	Kristine Larsen NTA
4 pm - 5 pm	Restoration of a 1916 Warner & Swasey Telescope	Flanders Pavilion	Alan Sliski INT
5 pm - 8 pm	Registration for Optical and Mechanical Telescope Competition	Clubhouse	COMP
5 pm - 8 pm	Hartness-Porter ATM Museum Open	Hartness House	Hosted by Bert Willard, Curator ALL
5 pm - 7 pm	Free Time	Relax or Enjoy Dinner	no on-site talks or demos scheduled ALL
7 pm - 8 pm	Introduction to Stellafane	For Convention first-timers, at the McGregor Library	Kim & Dennis Cassia ALL
7 pm - 8:15 pm	Friday Evening Videos	Flanders Pavilion	Astronomy documentaries for the whole family ALL
8 pm - 9 pm	Deep Sky Imaging with Small Scopes: Demo	near Domed Observatory	Al Takeda INT
8:30 pm -	Friday Evening Informal Talks	Flanders Pavilion	Bruce Beford, MC Short presentations by Convention Attendees MCE

10 pm	Registration Gate Closes	Entry Gate	
10 pm	Telescope Optical Competition Begins	Fields around Clubhouse	COMP

SATURDAY, AUGUST 15, 2015

7 am	Registration Gate Opens	Entry Gate	
7 am - 12 noon	Swap Tables	Swap Table Area - North of Main Camping Area	MCE
8 am - 9:30 am	Registration for Telescope Mechanical (and Optical if needed) Competition	Clubhouse	COMP
9 am - 5 pm	Shuttle Bus Operates	Bus Stops: Pine Island, Food Tent, Pink Clubhouse	
10 am - 4 pm	Telescope Making Demo	Tent north of Pavilion Organized by Glenn Jackson	ATM
10 am - 11 am	Introduction to Stellafane	For Convention first-timers, at the McGregor Library Kim & Dennis Cassia	ALL
10 am - 1 pm	Telescope Mechanical Competition	Fields around Clubhouse	COMP
10 am -	Telescope Field Walk	Meet at Front of Clubhouse Led by Carl Malikowski and John Vogt	NTA
10 am - 10:30 am	Telescope Making Demo: Intro & Rough Grinding	Tent north of Pavilion Rick Hunter	ATM
10:30 am - 11 am	Telescope Making Demo: Fine Grinding	Tent north of Pavilion Rick Hunter	ATM
11 am - 11:30 am	Telescope Making Demo: Making Dental Stone Tools	Tent north of Pavilion Junie Esslinger	ATM
11 am - 12 noon	Astronomy Activities for Children: Too Much Time On My Hands	McGregor Observatory Library Ages 5-12; Limited to first 25	KIDS
11 am - 12:30 pm	Telescope Making for Teens	Bunkhouse ages 12-16 "Stargazer" Steve Dodson	TEENS
11 am - 12 noon	A Dipper Full of Stars	Flanders Pavilion Richard Sanderson	NTA
11:30 am - 12 noon	Telescope Making Demo: Making Pitch Laps	Tent north of Pavilion Phil Rounseville	ATM
1 pm - 2 pm	Solar System Walk	Meet at Green Shed near Clubhouse Allen Tinker	NTA
1 pm - 1:45 pm	Telescope Making Demo: Polishing & Figuring	Tent north of Pavilion Dave Groski	ATM
1 pm - 2 pm	The Integration of the Maksutov Telescope Design into Amateur Telescope Making	McGregor Observatory Library Richard Sanderson	INT
1 pm - 2 pm	Science with your DSLR Camera	Flanders Pavilion Arne A. Henden	ADV
2 pm - 4 pm	Telescope Making Demo: Testing (bring your own mirror)	Tent north of Pavilion Dave Kelly	ATM
2 pm - 3 pm	Astronomy Activities for Children: I Can See Clearly Now	McGregor Observatory Library Ages 5-12; Limited to first 25	KIDS
2 pm - 3 pm	The Health and Environmental Dangers of Blue Light at Night	Flanders Pavilion Mario Motta	ADV
2 pm - 3 pm	Solar Observing Hour	Observing Fields Please set up your Solar Scope and Share	ALL
3 pm - 4 pm	Telescope Making Demo: Dobsonian Basics	Tent north of Pavilion Ken Slater	ATM
3 pm - 4 pm	Why Asteroid Light Curves?	Flanders Pavilion Dr. Daniel A. Klinglesmith III	ADV
3 pm - 4 pm	Breezy Hill Rocks!	Meet at Pink Clubhouse Jessica Johnson A Geology Tour	TEENS
3 pm - 4 pm	Seeing Red—Observing Carbon Stars	McGregor Observatory Library Glenn Chaple	INT
4 pm - 5 pm	Advanced Observing Programs of the Texas Star Party	Flanders Pavilion Larry Mitchell	ADV
4 pm - 5 pm	An Introduction to Telescopes for All Ages	McGregor Observatory Library Alan French & Glenn Chaple	NTA
6 pm - 7 pm	Free Time	Relax or Enjoy Dinner An hour with nothing scheduled	ALL
7 pm -	Saturday Evening Program & Keynote Talk	Amphitheater (Flanders Pavilion if rain) Keynote, Shadowgram, Raffle & Awards	MCE
10 pm -	Discover and Enjoy the Night Sky	(Held regardless of weather) McGregor Observatory Library Steve Dodson & John Briggs	NTA
10 pm -	Telescope Optical Competition Begins (Only if not held Friday)	Fields around Clubhouse	COMP

SUNDAY, AUGUST 16, 2015

8 am - 12 noon	Convention Cleanup	Please clean up around your campsite. Please put trash in the dumpsters	ALL
9 am - 12 noon	Hartness-Porter ATM Museum Open	Hartness House Hosted by Bert Willard, Curator	ALL

Event and Presentation Details

ACTIVITIES FOR TEENS & CHILDREN

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

For ages 5-12

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.

Location: McGregor Observatory Library. Each workshop has a different astronomical theme. Due to space limitations, each workshop is limited to 25 children on a first-come basis. Latecomers may be turned away.

- **STARRY STARRY NIGHT Friday 11 am to 12 noon**—A series of activities centered around the constellations.
- **YOU LIGHT UP MY LIFE Friday 2 pm to 3 pm**—Activities focusing on light, including UV beads, spectroscopy, diffraction, and fluorescent rocks..
- **TOO MUCH TIME ON MY HANDS, Saturday 11 am to 12 noon**—Telling time by the sun, moon, and stars, including sundials and sunlocks.
- **I CAN SEE CLEARLY NOW, Saturday 2 pm to 3 pm**—Activities introducing kids to lenses, mirrors and telescopes.

For ages 12-16

- **BREEZY HILL ROCKS! Friday & Saturday 3 pm-4 pm**, Meet at Pink Clubhouse, presented by Jessica Johnson. In this geology tour, Jessica will give a brief, basic background on the overall geology of the area, and then guide the group around Breezy Hill, identifying some of the cool rocks and minerals that can be found.
- **STELLAFANE ROSETTA PROJECT, Friday 1 pm -5 pm**, in the Mirror Lab room in the Flanders Pavilion, presented by Paul Fucile.

Stellafane Teen program participants will learn about the mission and technology behind the European Space Agency spacecraft Rosetta and lander module Philae. Launched in March of 2004 with a primary mission of studying the Comet Churyumov-Gerasimenko (67P), the 11+ year journey to 67P also involved flybys of Mars and two other asteroids. Rosetta began to orbit 67P in August of 2014 and in November successfully launched the Philae Lander to the comet surface.

This will be a hands on class where the group will work together to construct a Rosetta inspired system that will be demonstrated at the Convention. Each participant will have the opportunity to fine tune or modify their take home project during a special dinner hour session.

Attendance will be first-come first-served. If space is not filled through preregistration we will accept others at the convention, first-come first served, until the class is full.

Special note: There will be a lot of specialized instruction so you will need to be on time!

- **TELESCOPE MAKING FOR TEENS, Saturday 11 am - 12:30 pm**, with "Stargazer Steve" Dodson, at the Bunkhouse. Under Steve's guidance, the group will build an 8-inch Dobsonian Newtonian telescope. Teens aged 12-16 who take part in the entire activity (stay the whole 90 minutes) will receive a special raffle ticket. The winner of the telescope will be drawn at the Saturday night program. You must be present to win and must take the telescope home with you (no shipping is available). Limited to the first 12 participants - so arrive early!

AMATEUR TELESCOPE MAKING

Mirror Making Demonstration

10 am - 4 pm Friday and Saturday (see specific times and topics in schedule on previous pages), tent north of the Flanders Pavilion. 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 either day.**

Dobsonian Basics

3 pm-4 pm Friday and Saturday, tent north of the Flanders Pavilion. Ken Slater, creator of the Stellafane Dobsonian described in 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

The History of New England Astronomy

Friday 11 am - 12 noon, Presented by Carl Malinkowski. Discover how New England, particularly the Connecticut River Valley, had a pivotal role in Astronomy. We will be covering the demographics, people and events that have been instrumental in shaping Astronomy as we know it today. Come join us and re-discover the past that shaped today and our future!

Solar System Walk

Friday and Saturday 1 pm - Meet at Green Shed near Clubhouse, presented by Allen Tinker. 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 at 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 Pink 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 docent Allen Tinker 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 one half of a mile.

Sheep, Shadows & Showers: Chasing a Solar Eclipse in the Faroe Islands

Friday 4 pm - 5 pm, McGregor Observatory Library, Presented by Kristine Larsen. This talk will chronicle Kris Larsen's unexpectedly successful trip to the Faroe Islands in March 2015 to witness a total solar eclipse.

Introduction to Stellafane

Friday 7 pm - 8 pm and Saturday 10 am - 11 am, at the McGregor Library, presented by Kim & Dennis Cassia. Are you familiar with these terms: "The Pink," "Tent Talks," or "The Turret"? If not, whether 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.

Telescope Field Walk

Saturday at 10 am, Meet at Front of Stellafane Clubhouse, led by Carl Malinkowski and John Vogt. During the "Telescope Field Walk" experienced Amateur Telescope Makers will guide small groups through the fields around the Pink 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.

A Dipper Full of Stars

Saturday 11 am - 12 pm, 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.

An Introduction to Telescopes for All Ages

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

Discover and Enjoy the Night Sky

Saturday 10 pm, McGregor Observatory Library, presented by Steve Dodson & John Briggs. Using free Stellarium software, Steve and John will introduce beginners to observing the sky, including identifying the constellations, the Milky Way, and planets. This program will be held regardless of weather, but if weather permits we will work outdoors after a brief, fun introduction in the Library.

INTERMEDIATE LEVEL ASTRONOMY

These are Not Your Mother's Sundials

Friday 1 pm - 2 pm at the Flanders Pavilion, presented by Sara Schechner. Made of silver, gilt brass, ivory, wood, and stone, these exquisite sundials made between 1500 and 1900 will delight and surprise you. Some are pocket-sized and portable. Others are fine sculpture and princely treasure. And all do more than simply find the time. Learn the stories they tell of race, empire, labor, religion, fashion, and politics.

Deep Sky Imaging with Small Telescopes

Talk Friday 2 pm - 3 pm at the Flanders Pavilion, **demo Friday 8 pm - 9 pm** near Domed Observatory. Presented by Al Takeda. Once upon a time the only way to image dim astro objects was to use very large diameter telescope optics, the larger the better. Advances in camera technology have changed that equation. Spectacular images can be acquired using smaller diameter telescopes. In this presentation, Al Takeda will discuss how to use smaller telescopes to image some of those fainter objects. Topics will include the type of telescopes to use, astronomical targets to choose, cameras to use, and mechanical issues using small scopes. Al will demonstrate some of these techniques, in real time on Friday evening only, using his astro-imaging system. The location will be near the Domed Observatory at 8:00 pm on Friday.

Observing the Solar System's Minor Moons

Friday 3 pm - 4 pm at the Flanders Pavilion, presented by Terry Trees. As the sizes of amateur telescopes have increased over time, the observation of solar system moons has progressed from the large, bright moons, such as the Galilean moons of Jupiter, to the medium bright moons, like Titan and Rhea, to dim ones such as the Uranian moons and Triton, and on to challenging moons like Phobos, Deimos, Himalia and Phoebe.

Terry has observed 22 solar system moons: 1 of Earth (of course), 2 of Mars, 5 of Jupiter, 8 of Saturn, 5 of Uranus, and 1 of Neptune. These are visual observations, using just a telescope and an eyepiece. No cameras or image intensifiers were involved.

As you can imagine, observing minor moons is much like observing asteroids. The fun/challenge is not in the details you see; it is in proving that you successfully observed your target, i.e., proving which of the objects in the field of view is that target. Terry's presentation will discuss the methodology of locating and confirming these objects and what you can expect to see.

Restoration of a 1916 Warner & Swasey Telescope

Friday 4 pm - 5 pm at the Flanders Pavilion, presented by Alan Sliski. This talk will cover a few aspects of the telescope's restoration, and the history around the telescopes made by Warner and Swasey. The idea of first designing then making instruments with standard, interchangeable parts was relatively new and pioneered by machine tool builders in the Connecticut River Valley. This telescope is a wonderful example of Industrial Art from the Turn of the Last Century that inspired what we call Steampunk today.

The Integration of Maksutov Telescope Design into Amateur Telescope Making

Saturday 1 pm - 2 pm, at the McGregor Observatory Library, presented by Richard Sanderson. This talk investigates the fascinating life of Dmitri Maksutov and the development of the telescope that made his name a household word among serious stargazers all over the world. It then focuses on how this optical design was embraced by advanced amateur telescope makers in the United States during the 1950s, primarily at Stellafane, raising the bar to a new level of telescope quality and sophistication among amateurs. The talk also provides a quaint look back in time at the pre-Dobsonian days, which are rapidly fading from memory.

Seeing Red: Observing Carbon Stars

Saturday 3 pm - 4 pm, at the McGregor Observatory Library, presented by Glenn Chapple. Glenn will discuss the nature of carbon stars, a history of their study, and conclude with tips on locating and observing them. He will also provide information on the Astronomical League's Carbon Star observing program.

ADVANCED LEVEL ASTRONOMY

Science with your DSLR Camera

Saturday 1 pm - 2 pm, in the Flanders Pavilion, presented by Arne Henden. It doesn't take expensive equipment to acquire precision measurements of stellar brightness - your DSLR (or in some cases, your Point-and-Shoot camera) along with a tripod (or eyepiece adapter), are all that is needed. Inexpensive software can extract the brightness information from your images. Observing stars that change in brightness ("variable stars") is a simple way to contribute to science, and fun at the same time! You get to follow transient objects like novae, or measure slowly pulsating objects like Mira variables. This talk will show a couple of cameras, how to set them up, and how to make and report observations to the American Association of Variable Star Observers (AAVSO).

The Health and Environmental Dangers of Blue Light at Night

Saturday 2 pm - 3 pm, in the Flanders Pavilion, presented by Mario Motta. Glare is a significant problem on roadways for drivers, and gets progressively worse as the human eye ages. The effect of glare at age 60 is 3 times the effect at age 20. The human eye is a marvel of engineering, but has several design flaws. The human lens has no intrinsic blood supply, but continues to grow by layers throughout life. The lens derives its oxygen and nourishment by diffusion from the surrounding fluid of the eye. Eventually diffusion on its own is not sufficient due to growth of the lens and the center of the lens degenerates, forming focal calcifications and eventually cataracts. The solution is not more lighting, but rather avoidance of poor lighting designs, by taking into account human physiology. With the advent of new very efficient LED lights, many localities are switching their town lights to LED lighting. The problem is that these new "white" LEDs are really very blue, leading to increased scatter and worse glare effects. Mario will present data on the human and environmental effects of blue LED lighting and possible solutions, such as blue filtered LED lighting

Why Asteroid Light Curves?

Saturday 3 pm - 4 pm, in the Flanders Pavilion, presented by Dr. Daniel A. Klingensmith III. With the hardware and software tools available today it is relatively easy for most anyone with a 10-14 inch computer-controlled telescope and a digital camera to monitor the brightness variations of an asteroid as it rotates on its polar axis. Rotation periods range from a little more than 2 hours up to hundreds of hours. The shape of the light curve and amplitude will vary from season to season. From these variations it is possible to estimate the 3-D shape of the asteroid. This will allow asteroid mission planners to determine how to approach and maintain orbit around an asteroid.

The Advanced Observing Programs of the Texas Star Party

Saturday 4 pm - 5 pm, in the Flanders Pavilion, presented by Larry Mitchell. This talk will include some of the best and most unusual objects that have been included during the 16 years of the program's existence. The goal is to get people to visually observe objects they may have never heard of, or thought they could not see—and to successfully make their observations with modest sized telescopes. Most people are better telescope technicians than they think they are and clean optics and patience will reward those who try the lists. Larry has had a lot of fun with the Advanced Observing Program, and he is looking forward to presenting some of the objects and the science that makes each a unique and special object.

FRIDAY EVENING INFORMAL TALKS

8:30 pm Friday evening in the Flanders Pavilion. Bruce Beford of the Springfield Telescope Makers will conduct the informal talks. 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 35-mm slide projector, overhead projector, VCR, and a digital projector will be available for your use. Note that if you plan to use the digital projector, you must bring your own laptop.

SATURDAY SWAP TABLES

7 am to noon Saturday. 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**)

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 and from designated STM members roaming the site. We appreciate the generosity of our donors, and your support by purchasing raffle tickets. Thank you all very much!

OTHER PROGRAMS SUITABLE FOR EVERYONE

Solar Observing

2-3 pm Friday and Saturday, 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, 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 7 to 8:15 pm in the Flanders Pavilion. Short astronomy documentaries for the whole family.

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: How Stellafane Created Amateur Astronomy in America, by John Bortle
- Presentation of Telescope Competition Awards
- Stellafane Keynote Talk: New Horizons Mission to Pluto and Beyond by Alan Stern, Principal Investigator. Dr. Stern will talk about the New Horizons mission, what we have learned in the few weeks since it passed by Pluto, and what is next for the fastest spacecraft ever launched.

SUNDAY MORNING CLEANUP

8 am - 12 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 Pink 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 Pink 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 Pink 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 Pink 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 Pink 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 our 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 conventioners 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 T-shirt table. 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 new 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. Scutney 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 at the Bunkhouse.

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.

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 Pink 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

New in 2013 and continuing this year, 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 pink 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.

Optical Competition

Registration for the optical competition will take place on Friday from 5 pm to 8 pm in the Pink 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 Pink 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 Pink 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.

2015 Optical Judging Chairman: Rick Hunter

Mechanical Competition

Registration for the mechanical competition will be between 8 am and 9:30 am Saturday morning in the Pink 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 accept-

ed 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).

2015 Mechanical Judging Chairman: Chris Houghton

Last Year's Competition Winners

OPTICAL

Robert Horton, Foster, RI, 4¼-inch f/6.6 Newton-GEM
First Place Optical (small)

Steven Benson, Walpole, NH, 82mm f/15 Refractor
First Place Optical (advanced)

Mark Daley, New Ipswich, NH, 6-inch f/9.66 Newton Fork (First Scope)
Second Place Small Optical

Tom Nolasco & Jim Taylor, Huntington Valley, PA, 10-inch f/8.62 Newton GEM
Third Place Optical (small) (Tie)

Joseph Dechene, Nashua, NH, 6-inch f/6 Newton GEM
Third Place Optical (small) (Tie)

MECHANICAL

Joseph Dechene, Nashua, NH, 6-inch f/6 Newton GEM
First Place Mechanical

Paul Courtemanche, Groton, MA, 250-mm f/5 Binocular (First Scope)
Second Place Mechanical

Mark Daley, New Ipswich, NH, 6-inch f/9.66 Newton Fork (First Scope)
Third Place Mechanical

Melvin E. Dawson, Riverview, FL, 10-inch f/5.65 Newton Fork (First 'Scope)
Honorable Mention Mechanical

CRAFTSMANSHIP

Joseph Dechene, Nashua, NH, 6-inch f/6 Newton GEM
First Place Craftsmanship

Mark Daley, New Ipswich, NH, 6-inch f/9.66 Newton Fork (First Scope)
Second Place Craftsmanship

Paul Courtemanche, Groton, MA, 250-mm f/5 Binocular, (First Scope)
Third Place Craftsmanship

Steven Benson, Walpole, NH, 6-inch f/5 Dob, Honorable Mention Craftsmanship

SPECIAL AWARD

Steve Dodson, Sudbury, Ontario, Canada, Adjustable Mirror Test Dob
First Place Special Award

Alan Rifkin, South Hadley, MA, Portable Observatory Enclosure with Refractor
Honorable Mention Special Award

JUNIORS

Amiee & Claire Chang, Madison, CT,
6-inch f/8.5 Dob (First 'Scope), First Place Optical (Junior)

Amiee & Claire Chang, Madison, CT,
6-inch f/8.5 Dob (First 'scope), First Place Mechanical (Junior)