

# Company Seven

## Astro-Optics Division

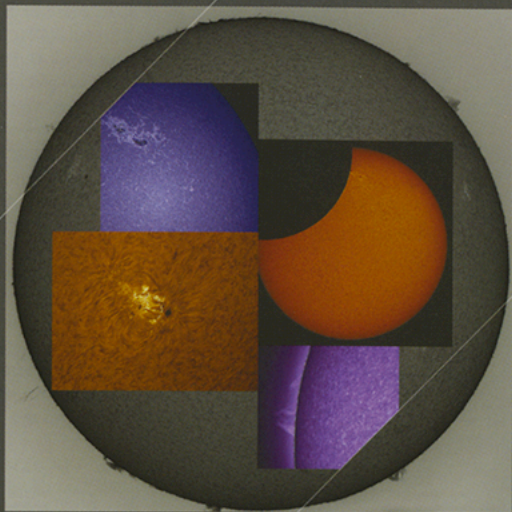


### SOLAR TELESCOPES, SOLAR FILTERS, & ACCESSORIES ILLUSTRATED CATALOG

Showroom: 14300 Cherry Lane Court  
Laurel, Maryland 20707  
301-953-2000  
<http://www.company7.com>

Correspondence: Box 2587  
Montpelier, Maryland 20709-2587  
[info@company7.com](mailto:info@company7.com)

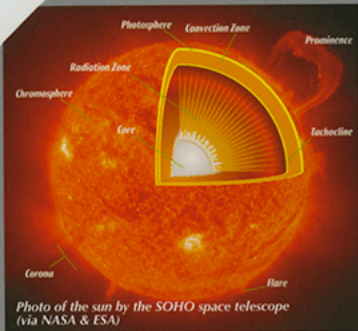
# Company Seven



**LINT** SOLAR SYSTEMS

SOLAR TELESCOPES  
& SOLAR FILTERS  
& ACCESSORIES





**SUN FACTS**

- The Sun is about 93 million miles away from Earth.
- The Sun is about 860,000 miles wide, 110 times wider than Earth.
- Sunspots appear on the Sun's surface as dark spots and are relatively cooler than surrounding areas. Caused by intense magnetic activity, sunspots produce dramatic solar flares and coronal mass ejections.
- The Sun's solar magnetic field changes on an eleven year cycle. Periods of high solar activity (sunspots, flares and solar storms) are known as Solar Maximum.

<http://sohowww.nascom.nasa.gov> is a great resource for information about our closest star.

**GLOSSARY**

**PROMINENCES:** These look like eruptions from the disk (edge) of the Sun. Prominences can be small spiky looking details, or large cloud-like detail with fine feather-like internal features. They are, in fact, ionized hydrogen emissions being projected from the limb. Prominences are anchored to the Sun's surface in the mesosphere, and extend outward into the Sun's troposphere.

**FILAMENTS:** These are string-like features on the surface of the Sun. At high resolution they take on a 3D effect due to the cooler aspect of the filament contrasted against the bright, hotter, Sun. They are actually prominences being viewed against the Sun's surface.

**SPICULES:** A spicule is a dynamic jet of about 500km diameter on the Sun. It moves upwards at about 20 km/s from the photosphere. The chromosphere is entirely composed of spicules. These features can be seen as "fur" around the edge of the disk.

**SOLAR FLARES:** A solar flare is a violent explosion in the Sun's atmosphere. Solar flares take place in the solar corona and chromospheres, heating plasma to tens of millions of Kelvin and accelerating electron, protons, and heavier ions to near the speed of light.

**CHROMOSPHERE:** The chromosphere is a thin layer of the Sun's atmosphere just above the photosphere, roughly 10,000 kilometers deep (approximating to, if a little less than, the diameter of the Earth). The chromosphere is more visually transparent than the photosphere. The name comes from the fact that it has a reddish color, as the visual spectrum of the chromosphere is dominated by the deep red H-alpha spectral line of hydrogen.

**WELCOME**

LUNT Solar Systems is a manufacturing and sales facility located in Tucson, Arizona. We design, fabricate, assemble, and test solar telescopes and solar filters.

Whether you are looking for a dedicated solar telescope or a solar filter for attachment to your own astronomy telescope, we can help.

Solar observing is both fun and educational. Don't miss out on Solar Maximum!

Feel free to contact us with questions or comments and we'll be happy to help.

**WARNING**

There are inherent dangers when looking at the Sun thru any instrument. LUNT Solar Systems has taken your safety very seriously in the design of our systems. With safety being the highest priority we ask that you read and understand the operation of your telescope or filter system prior to use. NEVER attempt to disassemble the system. Do NOT use your system if it is in some way compromised due to mishandling or damage. Please contact the factory with ANY questions or concerns regarding the safe use of your instrument.

Never look at the Sun with your naked eye or with a telescope that is not specifically designed to do so. Permanent and irreversible eye damage may result. Check that all filters are installed correctly and are free of any surface contamination that may compromise performance and/or potentially damage the surface of the optic when exposed to the Sun, i.e., fingerprints. Perform a routine safety check before each viewing session.

Never leave the solar telescope unsupervised while pointed at the Sun. People who are not familiar with the correct operating procedures of the system may inadvertently replace the diagonal or remove the filter itself not being aware of the integrated safety features of each.

The LUNT Solar Filter/Telescopes are NOT interchangeable with competitor products.

Always be aware that you are viewing in direct sunlight. Take necessary precautions to protect yourself from sunburn and heat exposure.

**HYDROGEN ALPHA TELESCOPES**

LS35T Basic..... 4  
 LS35T Deluxe..... 4  
 LS60T Basic..... 6  
 LS60T/PT Visual..... 6  
 LS60T50DS/PT Imaging..... 6  
 LS80T/PT..... 8  
 LS100T..... 10  
 LS152T..... 12

**HYDROGEN ALPHA FILTERS**

LS50F..... 14  
 LS60F..... 14  
 LS100F..... 14

**CALCIUM-K MODULES..... 16**

**CALCIUM-K TELESCOPE..... 16**

**ADAPTERS**

Go to [www.luntsolarsystems.com](http://www.luntsolarsystems.com) for a complete list of adapters.



**LSi CAMERA..... 18**

**ACCESSORIES**

LUNT Zoom Eyepiece..... 20  
 Focuser (Crayford 10:1)..... 20  
 Focuser (Mini-Helical)..... 20  
 Starlight Feather Touch Focuser..... 20  
 Solar Wedge..... 21  
 Dovetail Bars..... 21  
 Blocking Filters..... 21  
 Sol Searcher..... 22  
 Adapter T2..... 22  
 LS35TH $\alpha$  Case..... 22

**MERCHANDISE..... 23**

**DEALERS..... Back Cover**

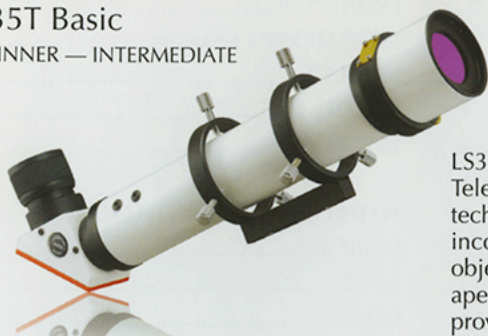
Front Cover Photo Credits: Savio Fong, Eduard Garcia-Ribera, Andreas Muner

# LS35TH $\alpha$

LS35T B400 Basic • LS35T B600 Deluxe

## LS35T Basic

BEGINNER — INTERMEDIATE

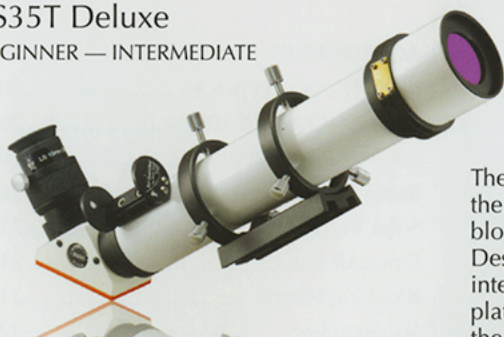


LS35T is a complete and dedicated Solar Telescope. It packs the same advanced technologies of its bigger brothers, incorporating a precision aligned refractor objective with a fully unobstructed 35mm aperture front mounted etalon. Designed to provide the beginner to intermediate user an entry level platform for stunning visual observations of the Sun's most vivid features. Prominences, flares, super granulation, some filaments and active regions will be observed.

The LS35T can be mounted side by side for binocular viewing (additional accessories required).

## LS35T Deluxe

BEGINNER — INTERMEDIATE



The LS35T Deluxe is an upgraded version of the LS35T Basic package. Included is a B600 blocking filter ideal for imaging applications. Designed to provide the beginner to intermediate user an upgraded entry level platform for stunning visual observations of the Sun's most vivid features. Prominences, flares, super granulation, some filaments and active regions will be observed.

The LS35T can be mounted side by side for binocular viewing (additional accessories required).

SPECIFICATIONS	LS35T Basic	LS35T Deluxe
Type	Front Mount Single Etalon	Front Mount Single Etalon
Tuning	External Tilt	External Tilt
Aperture	35mm (unobstructed)	35mm (unobstructed)
Focal Length	400mm	400mm
F Ratio	F/11.4	F/11.4
Bandpass	<0.75 Angstrom	<0.75 Angstrom
Focuser	Helical Eyepiece Focuser	Helical Eyepiece Focuser
Eyepiece	NA	LUNT 10mm
Mounting	Mounting Rings with 1/4-20 tapped base	Rings with dovetail base mount Mounting foot for bino modification
Diagonal	B400 Blocking Filter	B600 Blocking Filter
Sun Finder	NA	Tele Vue Sol-Searcher®
Dovetail	NA	LUNT 4" Vixen Style
Storage	Carton with Fitted Foam	Carton with Fitted Foam
Color	Pearl White; Black Accents	Pearl White; Black Accents
Skill Level	Beginner - Intermediate	Beginner - Intermediate
Weight	2 lbs	2.2 lbs
Note	Purchase a second unit for binocular viewing.	Purchase a second unit for binocular viewing.
Options	<ul style="list-style-type: none"><li>• Tele Vue Sol-Searcher®</li><li>• LUNT Zoom Eyepiece</li><li>• LUNT Dovetail Mount</li></ul>	<ul style="list-style-type: none"><li>• LUNT Zoom Eyepiece</li><li>• Binocular Mount</li><li>• Aluminum hard case</li></ul>

Images 1-5 viewed/  
photographed through  
the LS35T

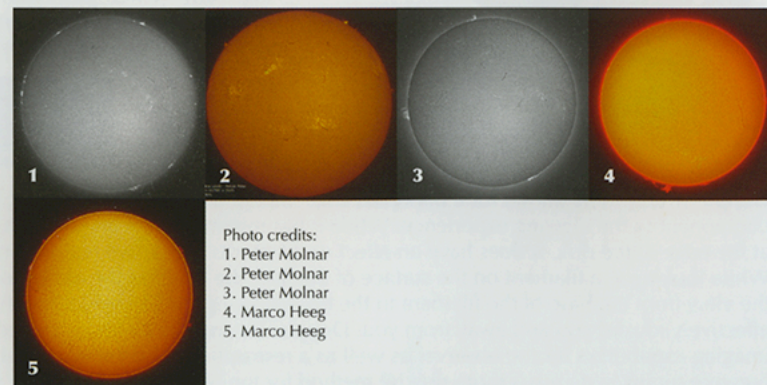


Photo credits:  
1. Peter Molnar  
2. Peter Molnar  
3. Peter Molnar  
4. Marco Heeg  
5. Marco Heeg

# LS60TH $\alpha$

LS60T Basic • LS60T/PT Visual • LS60T50DS/PT Imaging

## LS60T Basic

BEGINNER — INTERMEDIATE



The LS60T is a wonderful beginning H-alpha telescope but versatile enough for advanced observers. The compact scope allows easy set-up and the “grab and go” quality is perfect for outreach or casual observing. The refractor based system features a precision aligned singlet chromatic lens with a 60mm aperture. The internal etalon allows <math><0.7</math> Angstrom views and has a tilt tune adjustment to observe Doppler events.

## LS60T/PT Visual

BEGINNER — INTERMEDIATE



The LS60T/PT features an innovative internal pressure tuner (Doppler True Tuning) giving the user a 3D-like viewing experience with enhanced images and flexibility.

Fully upgradable to doublestack without the need to return the scope to the factory.



## LS60T50DS/PT Imaging

INTERMEDIATE — ADVANCED



With the addition of a secondary front mounted interference filter and the upgraded rear trimming filter, the Imaging Package is a superb visual telescope with the added ability to image the Sun using basic camera equipment. The addition of the 50mm front etalon lowers the band pass to <math><0.5</math> Angstroms which gives more surface detail. Standard is the Pressure Tuning System that provides 3D-like surface detail of the Sun.



### About Doppler Tuning

Doppler True Tuning allows for a bandpass shift “into and away” from the user, adding a 3D like component to the viewing experience. While it has minimal effect on proms due to their being at the edge of the disk, it does have an effect on filaments and active regions on the surface. While looking at a filament on the surface of the Sun, the user has the ability to Doppler shift the view from the base of the filament to the tip, following the filament through its structure effectively toward you and away from you. Doppler Tuning allows for enhanced visual and imaging capabilities for the observer as well as a research tool for the avid hobbyist. The pressure tuning system is a more precise method for tuning in on desired Solar features.

SPECIFICATIONS	LS60T Basic	LS60T/PT Visual	LS60T50DS/PT Visual plus Imaging
Type	Single Interference Etalon	Single Interference Etalon	Dual Interference Etalon
Tuning	Internal Tilt	Internal Pressure Tune (Doppler True Tuning)	Internal Pressure Tune (Doppler True Tuning) + Front Tilt
Aperture	60mm	60mm	60mm scope; 50mm filter
Focal Length	500mm	500mm	500mm
F Ratio	8.3	8.3	8.3
Bandpass	<math><0.7</math> Angstrom	<math><0.7</math> Angstrom @ 656nm	<math><0.5</math> Angstrom @ 656nm
Focuser	Crayford; 10:1 fine adjustment	Crayford; 10:1 fine adjustment	Crayford; 10:1 fine adjustment
Mounting	Clam shell with 1/4-20 tapped base	Clam shell with 1/4-20 tapped base	Clam shell with 1/4-20 tapped base
Diagonal	B600 Blocking Filter (standard)	B600 Blocking Filter (standard)	B1200 Blocking Filter (standard)
Storage	Aluminum finished hard case; fitted foam	Aluminum finished hard case; fitted foam	2 Aluminum finished hard cases; fitted foam
Color	Pearl white; black accents	Pearl white; black and red accents	Pearl white; black and red accents
Skill Level	Beginner - Intermediate	Beginner - Intermediate	Intermediate - Advanced
Weight	6 lbs	8.8 lbs	6.6 lbs (scope) 2.5 lbs (filter)
Options	<ul style="list-style-type: none"> <li>• Tele Vue Sol-Searcher<sup>®</sup></li> <li>• LUNT 6" Dovetail Mount</li> <li>• LUNT Zoom Eyepiece</li> <li>• Starlight Feathertouch Focuser</li> <li>• B1200 Blocking Filter</li> </ul>	<ul style="list-style-type: none"> <li>• Tele Vue Sol-Searcher<sup>®</sup></li> <li>• LUNT 6" Dovetail Mount</li> <li>• LUNT Zoom Eyepiece</li> <li>• Starlight Feathertouch Focuser</li> <li>• B1200 Blocking Filter</li> </ul>	<ul style="list-style-type: none"> <li>• Tele Vue Sol-Searcher<sup>®</sup></li> <li>• LUNT 6" Dovetail Mount</li> <li>• LUNT Zoom Eyepiece</li> <li>• Starlight Feathertouch Focuser</li> </ul>

Images 1-6 viewed/photographed through the LS60T

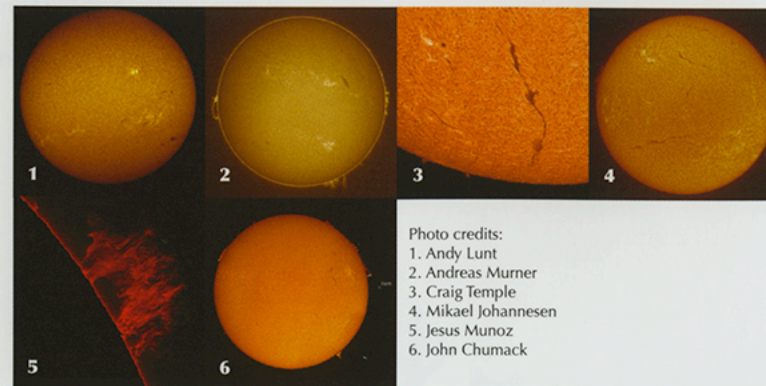


Photo credits:  
1. Andy Lunt  
2. Andreas Murner  
3. Craig Temple  
4. Mikael Johannesen  
5. Jesus Munoz  
6. John Chumack

# LS80TH $\alpha$

LS80T/PT Basic or with optional DSII Internal Doublestack (shown)

## LS80T/PT

INTERMEDIATE — ADVANCED



LS80T/PT (pressure tuned), a complete and dedicated Solar Telescope, has been designed into a precision aligned ED refractor with a fully unobstructed 80mm optical aperture. This package provides a significant step up into the Intermediate category of daytime Solar observing. It maintains the most advanced technology of Doppler True Tuning for fine adjustment of the center wavelength allowing for research of the Sun's disk and surface details at increased image scale. Prominences, flares, super granulation, filaments, and active regions will be observed.

The LS80T/PT package is fully upgradable with several options including the new evolutionary Dual Internal Stack Etalon System (DSII). The DSII eliminates the need for an external doublestack etalon reducing the cost and eliminating obstructions. The system is 100% unobstructed. Bandpass is reduced to <0.5 Angstroms providing stunning views. See the Sun's weather in enhanced high definition.

See page 6 for more information on Doppler True Tuning.

SPECIFICATIONS	LS80T/PT Basic	LS80T/PT/DSII (Doublestack Module)
Type	Single Interference Etalon	Dual Interference Etalon
Tuning	Internal Pressure Tune (Doppler True Tuning)	Internal Pressure Tune (Doppler True Tuning)
Aperture	80mm unobstructed	80mm unobstructed
Focal Length	560mm	560mm
F Ratio	F/7	F/7
Bandpass	<0.7 Angstrom	<0.5 Angstrom
Focuser	Crayford with 10:1 reduction	Crayford with 10:1 reduction
Eyepiece	LUNT Zoom	LUNT Zoom
Mounting	Integrated clamshell style with 1/4 -20 tapped base	Integrated clamshell style with 1/4 -20 tapped base
Diagonal	B1200 Blocking Filter	B1200 Blocking Filter
Sun Finder	Tele Vue Sol-Searcher <sup>®</sup>	Tele Vue Sol-Searcher <sup>®</sup>
Dovetail	LUNT 6" Vixen Style	LUNT 6" Vixen Style
Storage	Aluminum Finished Hard Case; Fitted Foam	Aluminum Finished Hard Case; Fitted Foam
Color	Pearl White; Red and Black Accents	Pearl White; Red and Black Accents
Skill Level	Intermediate - Advanced	Intermediate - Advanced
Weight	8.8 lbs	12 lbs
Note	Upgradable. Can be internally doublestacked at time of purchase or anytime thereafter. Doublestacking provides a truly enhanced high definition view of the Sun's surface. No need to return the scope to the factory for doublestacking.	Doublestacking provides a truly enhanced high definition view of the Sun's surface.
Options	<ul style="list-style-type: none"> <li>Starlight Feathertouch Focuser</li> <li>B1800; B3400 Blocking Filters for larger field of view and imaging applications</li> </ul>	<ul style="list-style-type: none"> <li>Starlight Feathertouch Focuser</li> </ul>

Images 1-5 viewed/photographed through the LS80T

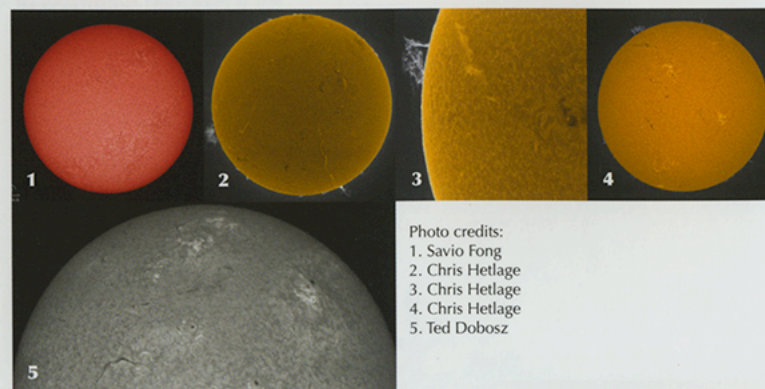


Photo credits:  
 1. Savio Fong  
 2. Chris Hetlage  
 3. Chris Hetlage  
 4. Chris Hetlage  
 5. Ted Dobosz

# LS100TH $\alpha$

LS100T/PT

LS100T/PT

INTERMEDIATE — ADVANCED



The LS100T is a complete and dedicated Solar Telescope. The ED refractor based system has a precision aligned ED doublet lens with a 100mm aperture. The focal length is 800mm providing a ~7.3 mm image thru a 12mm blocking filter. Focusing is achieved with a Precision 2" Starlight Feather Touch focuser with the a 10:1 reduction as standard equipment.

The LS100T utilizes high contrast coatings and the new Doppler True Pressure Tuning technology providing excellent views of the Sun's day to day activity in high contrast, high resolution detail.

See page 6 for more information on Doppler True Tuning.

Additionally the system may also be purchased with the 100mm external, front mounted Doublestack Etalon (LS100FH $\alpha$ ), for a reduced bandpass of <0.5 Angstrom.

SPECIFICATIONS	LS100T/PT Basic	LS100F (Doublestack Front Filter)
Type	Internal Etalon	External Etalon
Tuning	Internal Pressure Tune (Doppler True Tuning)	External Tilt Tuning
Aperture	100mm (unobstructed)	100mm
Focal Length	800mm	
F Ratio	F/7	
Bandpass	<0.65 Angstrom	<0.5 Angstrom
Focuser	2" Feather Touch; 10:1 Reduction	
Mounting	Mounting Rings and Dovetail	
Diagonal	B1200 Blocking Filter	
Sun Finder	Tele Vue Sol-Searcher®	
Dovetail	LUNT 12" Dovetail	
Storage	Aluminum Finished Hard Case; Fitted Foam	Aluminum Finished Hard Case; Fitted Foam
Color	Pearl White; Red and Black Accents	Pearl White; Red and Black Accents
Skill Level	Intermediate - Advanced	Intermediate - Advanced
Weight	12.2 lbs	6 lbs
Note	Upgradable. Doublestacking provides a truly enhanced high definition view of the Sun's surface. No need to return the scope to the factory for doublestacking.	Doublestacking provides a truly enhanced high definition view of the Sun's surface. Lowers band pass <0.5 Angstrom.
Options	• B1800 Blocking Filter for larger field of view and imaging applications	

Images 1-6 viewed/photographed through the LS100T

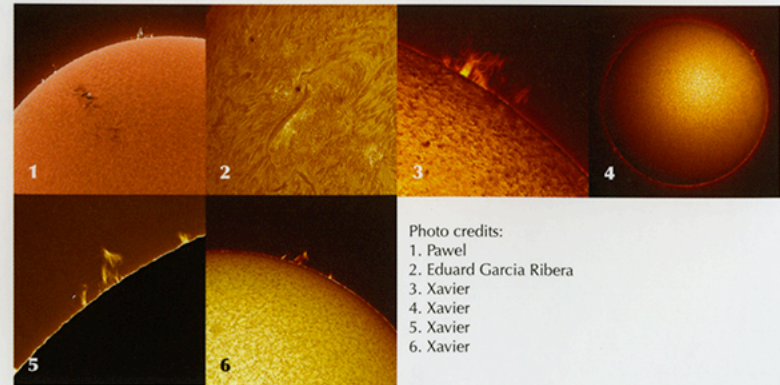


Photo credits:  
 1. Pawel  
 2. Eduard Garcia Ribera  
 3. Xavier  
 4. Xavier  
 5. Xavier  
 6. Xavier

# LS152TH $\alpha$

LS152T/PT

LS152T/PT

INTERMEDIATE — ADVANCED



If it's image scale you're after, the LS152T/PT provides the largest and highest resolution image size of any production manufactured single etalon dedicated scope. The 100% unobstructed system will perform to the highest level at medium to high magnifications. Utilizing advanced hi-contrast coatings and the new Doppler True Pressure Tuning system, the user will be able to experience crisp, sharp, high magnification visual images as well as use the system for high end digital processes.

The system can be configured for many options including:

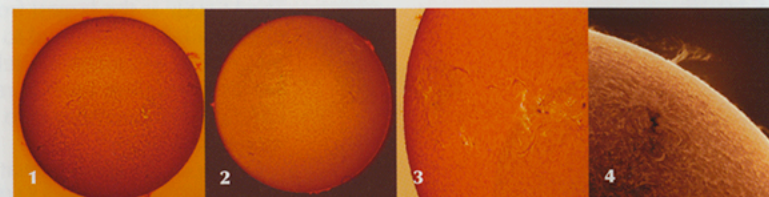
- An interchangeable CaK module allows for research at the 393nm wavelength.
- A White Light Wedge for research of sunspots and granulation.
- As a Base Telescope for nighttime and terrestrial observations.

See page 6 for more information on Doppler True Tuning.

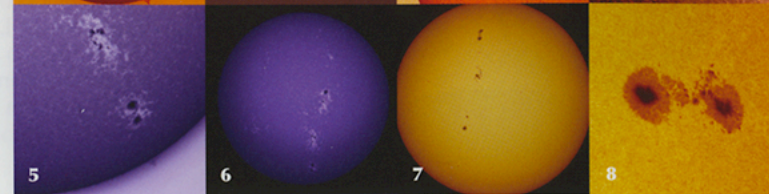


SPECIFICATIONS	LS152T
Type	Internal HD Etalon
Tuning	Internal Pressure Tune (Doppler True Tuning)
Aperture	152mm (unobstructed)
Focal Length	900mm
F Ratio	F/6
Bandpass	<0.65 Angstrom @656nm
Focuser	Starlight Feather Touch
Eyepiece	LUNT Zoom
Mounting	Mounting Rings
Diagonal	B1200 Blocking Filter
Dovetail	LUNT 12" Vixen Style
Storage	Aluminum Finished Hard Case; Fitted Foam
Color	Pearl White; Black and Red Accents
Skill Level	Intermediate - Advanced
Weight	30 lbs
Note	Optional, interchangeable CaK module allows for the research at 393nm through the same platform
Options	<ul style="list-style-type: none"><li>• Tele Vue Sol-Searcher® with 152T adapter</li><li>• B1800; B3400 Blocking Filter for larger field of view and imaging applications</li><li>• CaK Module for the research of multiple wave lengths</li><li>• White Light Wedge</li></ul>

Images 1-4 viewed/photographed through the LS152T



Images 5-6 photographed through the LS152T with the CaK Module



Images 7-8 photographed through the LS152T with the White Light Wedge

Photos courtesy of Larry Alvarez



# Hydrogen Alpha Filters

## LS50F

BEGINNER - ADVANCED



The LS50F unobstructed H $\alpha$  filter is our smallest front-mounted filter that includes an integrally tuned etalon for use on a customer supplied refractor. System includes the B600 blocking filter providing full disk images on telescopes up to 540mm focal length. Larger blocking filters suitable for longer focal length telescopes are also available.

Designed to retrofit your nighttime telescope, the filter is easily removable. An adapter plate will most likely be required for use on a customer supplied scope.

## LS60F

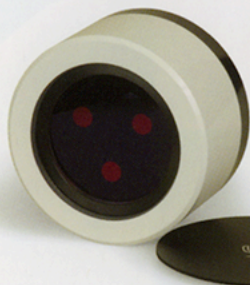
BEGINNER - ADVANCED



The unobstructed LS60F is the perfect doublestack match to the popular LS60T series of solar telescopes. It is also designed to retrofit your nighttime telescope for solar viewing. Having almost 50% more aperture than the LS50F, the LS60F provides a higher level of resolution and contrast when viewing solar prominences and surface details. With the same thread dimensions as the LS50F, the LS60F can utilize the same adapter plates for telescope mounting.

## LS100F

BEGINNER - ADVANCED

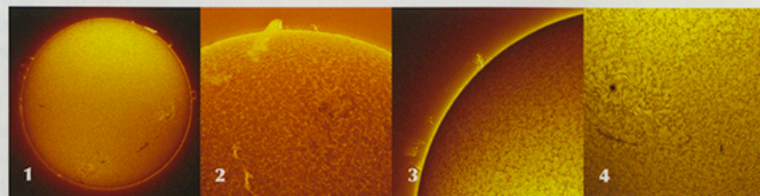


The LS100F is the largest front mounted solar filter available. Designed to retrofit 100mm+ refractor based nighttime telescopes, it boasts the highest level of resolution and contrast when compared to any other front mounted system.

Use in single stack format or doublestack the LS100T or another LS100F. When doublestacking to another LS100F, a rotary adapter will be provided to allow the user to rotate the second filter and line up the internal obstructions which are used to thermally stabilize the etalon.

SPECIFICATIONS	LS50F	LS60F	LS100F
Type	Front mount single etalon	Front mount single etalon	Front mount single etalon
Aperture	50mm, unobstructed	60mm, unobstructed	100mm
Wavelength	656.28nm	656.28nm	656.28nm
Bandpass	<0.7 Angstrom	<0.7 Angstrom	<0.7 Angstrom
Tuning	Tilt	Tilt	Tilt
Blocking Filter	B600; standard	B600; standard	B600; standard
Storage	Aluminum Finished Hard Case; Fitted Foam	Aluminum Finished Hard Case; Fitted Foam	Aluminum Finished Hard Case; Fitted Foam
Color	Pearl White; Black Accents	Red; Black Accents	Pearl White; Black Accents
Skill Level	Beginner - Advanced	Beginner - Advanced	Beginner - Advanced
Weight	2.6 lbs	3 lbs	6.8 lbs
Required	Adapter Plate to attach to customer telescope; in stock for common scopes. Can also be custom made. See <a href="http://www.luntsolarsystems.com">www.luntsolarsystems.com</a>	Adapter Plate to attach to customer telescope; in stock for common scopes. Can also be custom made. See <a href="http://www.luntsolarsystems.com">www.luntsolarsystems.com</a>	Adapter Plate to attach to customer telescope; in stock for common scopes. Can also be custom made. See <a href="http://www.luntsolarsystems.com">www.luntsolarsystems.com</a>
Note	No Adapter Plate is needed to add a LS50FH $\alpha$ DS module to a LS50FH $\alpha$ or LS60TH $\alpha$ . The addition of a second etalon (doublestacking) reduces the bandpass to <0.5 Angstroms for higher resolution viewing and/or imaging.	No Adapter Plate is needed to add a LS60FH $\alpha$ DS module to a LS60FH $\alpha$ or LS60TH $\alpha$ . The addition of a second etalon (doublestacking) reduces the bandpass to <0.5 Angstroms for higher resolution viewing and/or imaging.	No Adapter Plate is needed to add a LS100FH $\alpha$ DS module to a LS100TH $\alpha$ . An adapter is available to doublestack a LS100F to another LS100F (please specify). The addition of a second etalon (doublestacking) reduces the bandpass to <0.5 Angstroms for higher resolution viewing and/or imaging.
Options	<ul style="list-style-type: none"> <li>B1200; B1800; B3400</li> <li>Tele Vue Sol Searcher<sup>®</sup></li> <li>LUNT Zoom Eyepiece</li> </ul>	<ul style="list-style-type: none"> <li>B1200; B1800; B3400</li> <li>Tele Vue Sol Searcher<sup>®</sup></li> <li>LUNT Zoom Eyepiece</li> </ul>	<ul style="list-style-type: none"> <li>B1200; B1800; B3400</li> <li>Tele Vue Sol Searcher<sup>®</sup></li> <li>LUNT Zoom Eyepiece</li> </ul>

Images 1-4 viewed/photographed through the LS50F



Images 5-6 viewed/photographed through the LS100F

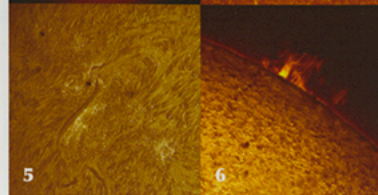


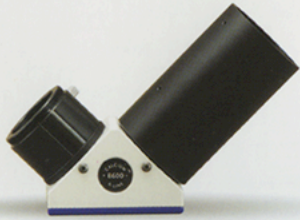
Photo credits:  
 1. A. Clitherow  
 2. A. Clitherow  
 3. A. Clitherow  
 4. A. Clitherow  
 5. Eduard Garcia Ribera  
 6. Xavier

# CaK Modules & Telescope

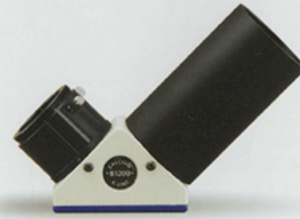
## CaK Modules

INTERMEDIATE - ADVANCED

B600



B1200



## LS60T/CaK

INTERMEDIATE - ADVANCED



**CaK Modules** are available in standard sizes to match the focal length of the user's telescope. It is a rear-mounted diagonal that replaces the standard diagonal. No additional front mounted (ERF) filtering is required for telescopes up to 100mm aperture. CaK modules are available as a diagonal or straight through, depending on the user's requirements.

Our **CaK Optical Tube Assembly** is a small lightweight, portable telescope accessory. It is ideally suited for observation of the Sun with a LUNT CaK Module. The 60mm OTA can also be used for observing nighttime viewing and as a spotting scope for terrestrial use. An additional star diagonal is needed for non-solar use (not supplied).

Calcium K (CaK) Telescopes and Filters are used to study the wavelength of 393.4nm. This emission line is one of two that are produced by Calcium just at the edge of the visible spectrum in a layer that is slightly lower and cooler than the layer viewed in Hydrogen-alpha. The emission line displays areas of Super Granulation Cells that are brightest and strongest in areas of high magnetic fields such as sunspot activity and active regions. Having the ability to study the Calcium K and the Hydrogen-alpha line provides important insights into the structure, strength, and depth of these active regions.

The Calcium K line is centered at 393.4nm. This wavelength is considered to be slightly outside the visible spectrum on the UV side. While most people can visually see the violet color of the wavelength, many cannot resolve the contrast due to yellowing of the cornea. People who have had cataract surgery are often able to see considerable detail. It is for these reasons that the CaK line is typically studied via the use of cameras which are able to provide stunning details.

SPECIFICATIONS	CaK Modules	LS60T/CaK (Telescope)
Type	CaK Module	Refractor based system
Wavelength	393.4nm	393.4nm
Bandpass	<2.4 Angstroms	<2.4 Angstroms
Tuning	N/A	N/A
Aperture	Customer OTA	60mm
Focal Length	N/A	500mm
F Ratio	N/A	F/8.3
Focuser	N/A	Crayford with 10:1 fine adjustment
Blocking Filter	B600, B1200, B1800	B600 standard
Mounting	N/A	Integrated clamshell style with 1/4-20 tapped base
Storage	N/A	Aluminum Finished Hard Case; Fitted Foam
Color	Pearl White; Blue and Black Accents	Pearl White; Black Accents
Skill Level	Intermediate - Advanced	Intermediate - Advanced
Weight	2 lbs	5 lbs
Note	Configuration is diagonal or straight through	
Options	<ul style="list-style-type: none"> <li>• LS6CaKMD (up to 600mm FL)</li> <li>• LS12CaKMD (up to 1200mm FL)</li> <li>• LS18CaKMD (up to 1800mm FL)</li> <li>• LS34CaKMD (straight through only)</li> <li>• 60mm OTA</li> <li>• Tele Vue Sol Searcher®</li> <li>• LUNT Zoom Eyepiece</li> <li>• T2 to 2" Eyepiece Adapter</li> </ul>	<ul style="list-style-type: none"> <li>• B1200 for larger viewing and imaging applications</li> <li>• Tele Vue Sol Searcher®</li> <li>• LUNT Zoom Eyepiece</li> <li>• Starlight FeatherTouch Focuser</li> <li>• LUNT 6" Dovetail Mount</li> </ul>

Images 1-4 viewed/photographed through a CaK Module

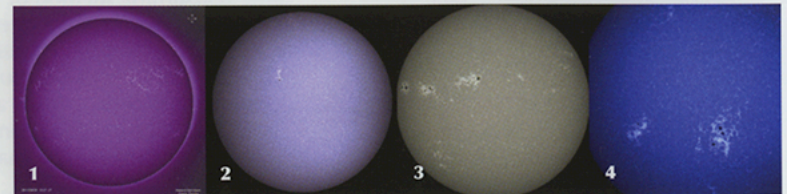


Photo credits:  
 1. Howard Eskildsen  
 2. David Leong  
 3. Andreas Murner  
 4. Larry Alvarez

# LSi Camera

LSi

INTERMEDIATE - ADVANCED

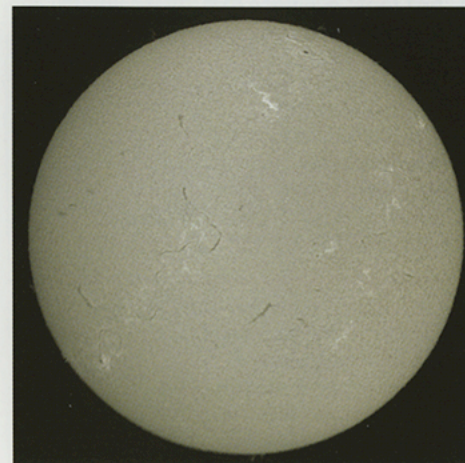
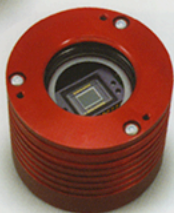


The LUNT LSi is an advanced low noise camera that beautifully compliments the LUNT line of telescopes.

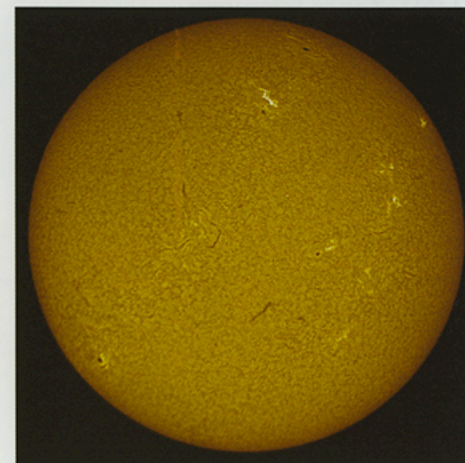
High-speed 8 bit video cameras have always been considered the only way to image the Sun. They take thousands of images, generating a huge amount of data and processing for a single image of the Sun's surface and then again for the prominences.

With the large dynamic range of the LSi, this time consuming method of solar imaging is a thing of the past. Take one incredibly short exposure with the LSi camera. The image is downloaded to your computer in less than a second. Processing takes a few seconds more and your image is complete allowing you the freedom to take image after image.

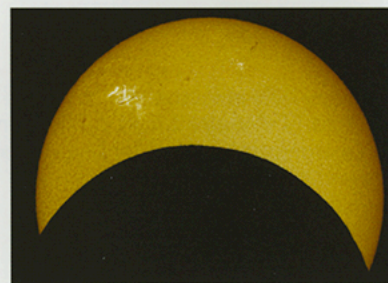
The processing process is incredibly simple. A quick 'Normal' contrast stretch to brighten the image slightly or a 'Power Law' contrast stretch to bring out more of the surface brightness, and the image is almost complete.



Raw Image taken with the LUNT LSi Camera



Enhanced image processed with the LUNT LSi Software



Eclipse image taken by Andy Lunt through the LSi Camera, Easter Island, National Geographic event 2010

Surface detail is very obvious in the monochromatic image on the screen, but switch on the 'False Color' and the surface detail becomes much more prominent and comes to life.

Use a simple 'Unsharp Mask' to pull out the surface detail and your image is complete. All these steps can be carried out in less than 30 seconds.

See samples above. These images were taken with the LSi Camera on a LS60T Solar Scope. They were processed with LUNT LSi Software.

## TECHNICAL INFORMATION

**Connectivity:** USB2.0

**Software:** LUNT LSi Software (Windows 32/64 bit)

**Shortest Exposure:** 1/1000th second

**Download Time:** 0.6 seconds (in full resolution)

**CCD Type:** Sony ICX285AL ExView interline imager

**CCD Size:** Active area 8.95mm x 6.7mm

**CCD Pixels:** 1392 x 1040 pixel array. Each pixel is 6.45 x 6.45µm (or 12.9 x 12.9µm in binned 2x2 mode).

**Well Depth:** Full resolution mode 25,000e. Binned 2x2 mode approximately 40,000e.

**Mean Visual QE:** 67% at peak (540nm)

**Useful Spectral Response:** 360nm - 1000nm

**Readout Noise:** ~4e /RMS typical

**Back Focal Distance:** The CCD is approximately 17.5mm from the barrel front.

**Camera Size:** 75mm diameter x 75mm long

# Accessories

## LUNT Zoom Eyepiece LS7-21ZE



A 'first look' eyepiece that allows you to quickly view the sun, zooming in and out of interesting detail.

- Focal length: 7.2mm - 21.5mm
- Barrel size: 1.25"
- Diameter: 47mm
- Height: 82mm
- Eye relief: 15mm
- Lenses/Groups: 7 Lenses/4 Groups
- Field of view: 7.2 53° - 21.5mm 40°

## Crayford Focuser; 10:1 Reduction CRAY



- Black anodized heavy-duty aluminum
- 80mm (~3 inches) travel
- Ball bearing guides
- Hardened steel friction plate
- 10:1 precision reduction
- Brass compression ring with 3 securing thumb screws for diagonal

## LUNT 1.25" Mini Focuser LS/MINI/1.25



Non-rotating helical focuser that provides a T2 (male) to T2 (female) thread connection. the T2 thread design is ideal for fine camera and eyepiece focus.

- 10mm precision travel
- Brass compression ring for eyepiece protection
- Locking collar

## Starlight 2" Feather Touch Focuser with 1.5" Travel SLF1.5



- Focuser travel: 1.5 inch
- Minimum focus height: 35.56mm
- Focuser height with adapter plate: 40.64mm
- Focus repeatability: 0.01mm
- Backlash: 0.0mm
- Fine focus reduction: 1.778mm per step
- Lifting capability: 2.5kg = 5.5 lbs
- Used with the LS60TH $\alpha$  or LS100TH $\alpha$

## LUNT Solar Wedge LS2HW

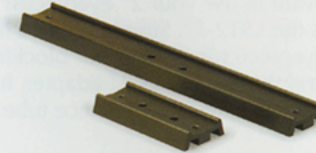


Use for professional Solar-Photography and White Light Solar Observation. Polarizing Filters are optional. For photo-visual use we recommend one pc ND 3.0 (included).

### Includes...

- 2" LUNT White Light Solar Wedge
- 2" ND3 pre-installed filter
- Metal carrying case
- Die cut foam with room for accessories

## LUNT Dovetails



Connect your scope to its mount with confidence. Connecting screws (2) are US 1/4-20 inch and they do not look out of the rail making the bar a perfect match for Vixen-like mounts. Constructed of black anodized aluminum with stainless steel.

- LS100PS:** 100mm length (3.94")
- LS150PS:** 150mm length (5.91")
- LS300PS:** 300mm length (11.81")

## H $\alpha$ Blocking Filters



Required on all LUNT Solar Telescopes. The Blocking Filter houses filters necessary for safety and performance.

- B600d1:** 1.25" B600 Blocking Filter in Diagonal with T2 connection
- B600d2:** 2" B600 Blocking Filter in Diagonal with T2 and 2" connection
- B600s1:** 1.25" B600 Blocking Filter in Extension Tube with T2 and 2" connection
- B600s2:** 2" B600 Blocking Filter in Extension Tube with T2 and 2" connection
- B1200d1:** 1.25" B1200 Blocking Filter in Diagonal with T2 connection
- B1200d2:** 2" B1200 Blocking Filter in Diagonal with T2 and 2" connection
- B1200s1:** 1.25" B1200 Blocking Filter in Extension Tube with T2 and 2" connection
- B1200s2:** 2" B1200 Blocking Filter in Extension Tube with T2 and 2" connection
- B1800d1:** 1.25" B1800 Blocking Filter in Diagonal with T2 connection
- B1800d2:** 2" B1800 Blocking Filter in Diagonal with T2 and 2" connection
- B1800s1:** 1.25" B1800 Blocking Filter in Extension Tube with T2 and 2" connection
- B1800s2:** 2" B1800 Blocking Filter in Extension Tube with T2 and 2" connection

## Tele Vue Sol Searcher® SOL



Provides a quick and easy way to line up the Sun with your telescope. You don't look through the Sol Searcher®, you look at it. Simply move your scope until the Sun's image is centered on the screen and the Sun will be in the eyepiece's view.

## Adapter T2 LST2-2"



Want to use your 2" eyepieces? All you need is the LST2-2". Simply remove the 1.25" eyepiece tube from your blocking filter and thread on this 2" adapter. It takes T2 threading to a 2" eyepiece tube.

## LS35THα Case 006-011



Protect your investment. Aluminum reinforced hard case with die cut foam for the LS35T Telescope.

## A. LUNT Solar Systems Baseball Cap

Cover up while solar observing, and don't forget the sun screen. One size fits all.

LS/CAP

## B. LUNT Solar Systems Polo Shirt

Light gray with the LUNT logo. Unisex sizing: M, L, XL & XXL

LS/SHIRT

## C. LUNT Solar Systems Tank Top

For the ladies. Dark gray with the LUNT logo.

Women's sizes M, L

LS/TANKTOP

## D. LUNT Solar Systems Hat

Keep your head covered and prevent sunburn while observing.

UV protectant material with small pocket and clip to prevent being blown off in the wind. Cool ventilated design.

Neck flap to keep your neck protected while looking through the eyepiece.

One size fits all.

LS/HAT

