LS60THa

The LS60/Ha is a complete Solar Telescope. The refractor based system has a precision aligned singlet chromatical lens with a 60mm aperture. The front singlet lens reduce half the straylight of an achromat , fully eleminate the possibility for on axis coma, astigmatism, decentering aberrations and provides with the matched collimation lens set a full spherical corrected flat-field Solar-Telescope. The focal length is 500mm providing a ~4.5 mm image thru a 6mm blocking filter. Fine adjustment is achieved with a Crayford style focuser or feather touch focuser with 10:1 reduction standard. An internal etalon with tune adjustment allows for a <0.8 Angstrom bandpass.

LS60THa/B600/C	60mm H-alpha Solar-Telescope, B600 blocking filter and 2'' Crayford focuser	**899.00 $**

Review of the first USA LUNT LS60THA

By Stephen W. Ramsden Tuesday, July 22, 2008

Well, the sought after first Lunt products have arrived. I received an LS60THa today for review from my local telescope dealer-Camera Bug in Atlanta, GA USA.

First things first. I am an avid solar astronomer with about 2 years experience in Ha and decades experience with night time viewing. I own several large telescopes and also a Coronado 90mm SolarMax and a Coronado PST. I have no experience with other brands of Ha filters, just Coronado and now Lunt.

The scope arrived by UPS ground in Atlanta in a single ply cardboard box with Styrofoam peanuts protecting it's contents. Inside the box was a silver attaché style case of sturdy construction wrapped in 2 layers of taped bubble wrap. It was protected very well from jarring and dropping during shipping.

The case was sturdy and had two beefy latches on the front. Inside the case was the LUNT LS60THa..


It appeared to be lost inside the case. This was good though as I noticed that there were several predrilled holes in the case for eyepieces and plenty of room to make your own holes for other items such as a dovetail mount or sol-finder. (Which were not included) There was also room to store it with the double stack 50mm etalon attached if you upgraded later. This is a big plus.


Inside the case where the following items:

1) Lunt 60mm single Ha scope
2) A clamshell mounting ring
3) A Warranty card
4) A key for the case

No eyepiece, no instructions or manual, no screws for the mounting ring, no sun finder, and no alen wrench. There were none of the niceties that you might expect after having plunked down almost $1000 for an optical instrument. LUNT has since began including a lot more accessories. This was the first one shipped that I know of.

The first thing I noticed was the excellent construction. The lens cap screwed on and was made of metal very similar to the Coronado SolarMax 90's. It had a cactus logo on it. The Crayford style focuser was meaty and had an excellent feel. The 1.25" B600 diagonal blocking filter had a 2 inch insertion tube where it went into the focuser.


There was a red plug in the eyepiece holder

Interestingly a look inside the business end showed that the etalon was WAY down in the tube and not accessible by any oily human fingers. The 60mm Clear objective was clean and free from any imperfections.

I inserted an 18mm CEMAX eyepiece into the scope and took it outside. Unfortunately there was a thin high layer of cirrus clouds over Atlanta with occasional breaks so it was not the best day to test any solar scope but I think I got a good feel as I compared it to the same conditions with my PST and my SolarMax 90. I used a Vixen alt/azm mount.

The first impression was a hazy bright image with a very black background. After focusing it for a while and playing with the etalon adjustment, which is located on the top of the scope behind the clamshell, I was able to get a focused, clear image. The tuning dial was black and located in a recess in the black area of the scope. The etalon adjustment has much more range than the PST and there was no sign of a sweet spot. The only prominence seen was on the eastern limb. It was difficult to get any definition. I waited for a break in the clouds and then tried again.

The image was then much sharper and there were a few small prominences visible The disk itself was a solid red no matter how you adjusted the etalon again probably due to the conditions. The below are some unaltered exposures taken with the Canon 40D holding the 18mm CEMAX eyepiece. It was very similar to having the PST etalon tuned all the way to the bright side. The image was very nice in the eyepiece even with the clouds.

Of course you can see for yourself the thin layer of clouds between me and the sun so I cannot give an accurate rating of a cloudless view. I did however compare it to a PST side by side with the same conditions. The feel of the image was superior to an un-stacked PST. . The image was slightly bigger in the LUNT and a little more detailed and sharper.

My initial impressions of the scope are that it is slightly better viewing than the standard PST and not quite as good as a double stacked PST. The retail price also puts it into that range. A standard PST is $599 and a double stacked PST is around $1300 currently. However, the PST comes with an eyepiece and a Malta mount and hardware included at that price. The PST case is much less sturdy and obviously cheaply made. The PST's internal etalon is 25mm while the LUNT's is 35mm.

If I were to have received this Lunt as my first Ha scope, I would have been curious as to why there were no instructions, no eyepiece and no screws to mount it to anything. Of course, I am sure that LUNT wanted their dealers to be able to accessorize the scope as they saw fit to tailor it to their customers.

The photographic quality was also a little better than a single PST and a little less than a double stacked PST. Again, the scope is priced right where it should be so it was satisfactory.

I believe the strong points of this scope are the very tough construction and excellent focuser. The LUNT had a very nice dual speed focuser. This was the standard LUNT focuser, not the feather touch.

I would give this scope overall a thumbs up. It was worth all of the waiting. Hopefully the double stacked 60 and the larger scopes will be even better optically than this one.

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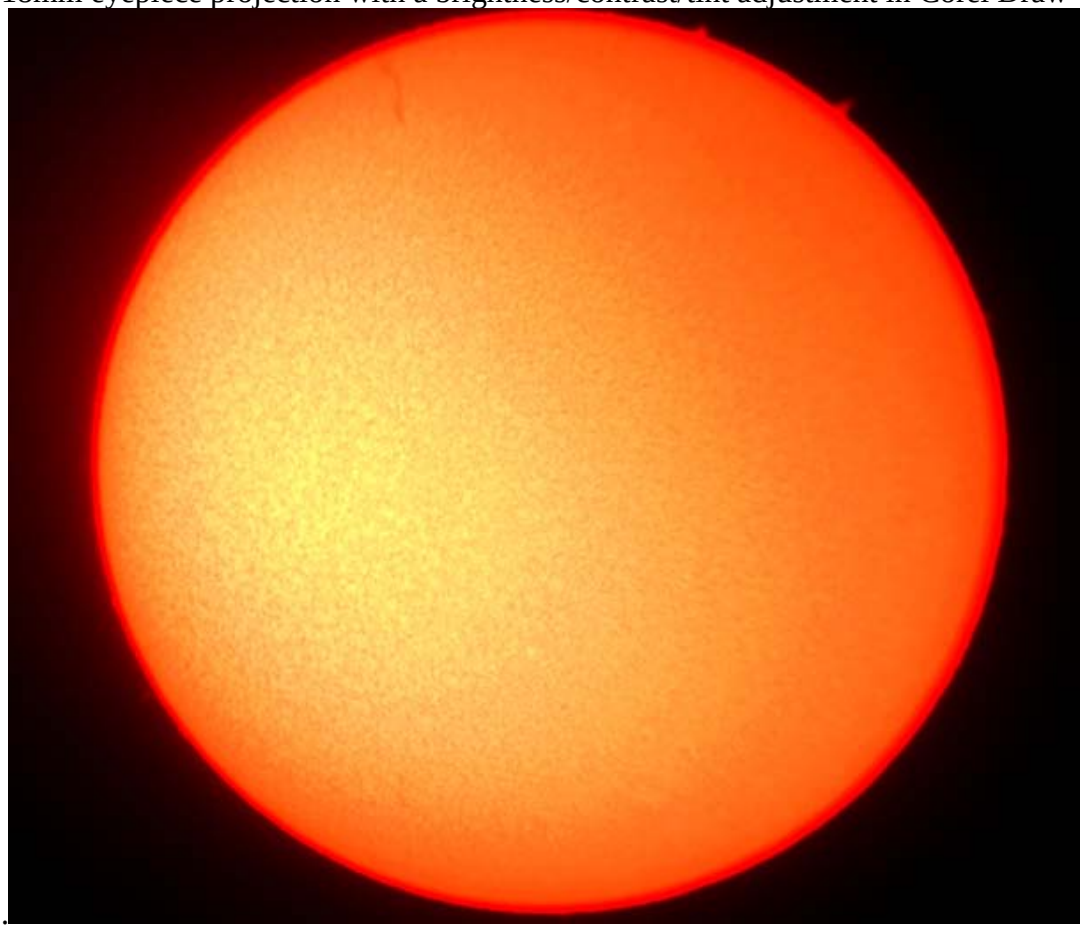
Atlanta, GA

DAY TWO UNDER SUNNY, CLEAR CONDITIONS, FINALLY!!!

Today the conditions were 8 out of ten. It was clear and sunny with a 3-5 kt variable wind on the surface. The humidity was **45%**, the temp was **87.9** °F / **31** °C. Visibility **10 miles**. No clouds with just a slight haze associated with downtown Atlanta in the summertime.

I started with the Solarmax 90 and the double stacked PST side by side on my CGE mount in order to get an idea of what was really there today. I saw around a dozen small prominences and 2 larger ones. There were 2 small filaments and one VERY large filament on the NW limb.

The below picture is a single frame from the Coronado SolarMax 90mm taken with the Canon 40D/CEMAX 18mm eyepiece projection with a brightness/contrast/tint adjustment in Corel Draw



Then I got out the LUNT LS60THa. I attached it to the CGE mount with the GPS accessory and custom ADM knobs with a 4 inch ADM dovetail plate with a countersunk trough down the middle. I secured it with 2 1/4-20 screws that came with my PST originally. This plate was then attached to a ADM dual mount that Anthony Davoli made for my PST/Solarmax 90 setup. (I think that Anthony Davoli's work is awesome!) The scope was mounted and balanced and then I realigned to the sun. I also added a Televue Sol-Searcher ($35) onto the mounting ring of the LS60THa. It was easy to install and did not require adjustment. It certainly made the scope feel whole as I did not have to watch the pavement to find the sun. The police came by as usual. They seem to get real nervous when I set up my equipment.

The LUNT LS60THa soundly outperformed the single PST.

The LUNT had a bright detailed view that was easy to look at. There was no apparent sweet spot. I moved the disc all around the eyepiece and it did not waver in detail or brightness.
The below image is a short exposure shot through the double stacked PST that I think illustrates the "sweet spot" that we are all used to dealing with. I believe that the sweet spot is exaggerated with the addition of a second etalon but it is still evident on the single PST.

This phenomenon was not evident through the LUNT LS60THa. The LS60THa was less detailed than the sweet spot on the double stacked PST but it was much more even detail through the entire image.

OK, so then I put the same 18mm CEMAX eyepiece into the LS60THa and the Coronado PST. I refined the views in each and focused and aligned them. I watched for several minutes trying to pick out the differences. Then I added the 2nd etalon to the PST and again compared the images. The results were right in line with yesterdays cloudy skies review.

The LS60THa had a roughly 20% larger image with more detail than the single stacked PST and less detail than the double stacked PST. Here are some single exposures from the Canon 40d/18mm CEMAX eyepiece of each scope:
LUNT LS60THa:

PST single etalon:

Double Stacked PST:

Then I watched it for a while longer and invited someone else who had never heard of an H alpha scope over for their opinion. Michael *****, a local EMT, happened by and I asked for his impressions. Michael was very thorough in his comparison. He looked.....

and looked, and looked, and looked

and then looked some more. He examined all of the setups for at least 15 minutes. Thank you Michael.!!

Michaels summation of the views was the same as mine and as the two other people who looked though all of them. The LUNT LS60THa had a superior view than the single PST but less detail and clarity than the double stacked PST. Michael also raved about how much easier the focuser and the general mechanical feel of the LUNT LS60THa was than the PST. I agree. The LUNT is far better designed and much easier to use than the PST. The tiny PST focuser knob is not very smooth and it does not have any way to do fine adjustments. The LUNT double speed focuser and focuser lock make it much easier to attain and keep a crisp focus. There was no issue today of the disk being unevenly focused as there was yesterday under thin clouds..

Once the LUNT was outfitted with the proper accessories and eyepiece it had a much better feel. My mentor tells me that almost every "real" refractor comes without any of the accessories I mentioned but still, I believe as a consumer that these things should be included, even if it raises the price a little. My friend says that anyone who would buy this scope would not want a "cheapy" eyepiece and sol finder but I disagree. I believe a complete setup even if it is cheap gives the buyer a better feeling upon purchase and will not incur additional expense for the buyer if he/she is a beginner.

I spent some more time with the scopes and decided that I liked the etalon adjustment better on the PST in either configuration. The LUNT etalon adjustment did not seem to make much difference with many turns when compared to the significant change shown by turning the PST etalon adjustment even slightly. I wondered if this had any effect on the apparent absence of a sweet spot with the LUNT.

Thank you for your time in reading this review and I hope you found it interesting.

I may be reached at sramsden@natca.net or you may visit my site www.solarastrophotography.com to see more of my amateur work.

Stephen W. Ramsden
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