

Manufacturers Information:

LUNT SOLAR SYSTEMS Calcium Module with B1800 blocking filter

Art. No. LS18CaKMD

Calcium Modul with B1800 blocking filter

Internal narrowband filters allow for a <2.4 Angstrom bandpass. Primarily an imaging system due to the difficulty of many to visually see everything that CaK has to offer. For telescopes up to 100 aperture and 1800mm focal length.

Delivered with order:

- Diagonal with 2" barrel and 1.25" eyepiece holder
- blocking filter B1800 with IR and UV protection

Pre-orders will be shipped in the order they are received.

Prices are subject to change without notice.

Price 1,000.00 \$

REVIEW OF THE LS18CaKMD by Stephen W. Ramsden

Stephen Ramsden is an amateur solar astronomer in Atlanta, GA and also a Navy sub veteran and full time Air Traffic Controller. Stephen is not paid for or authorized by any company to do reviews on any product. This is simply a novice astronomers opinion.



The **LUNT SOLAR SYSTEMS** Calcium K module and B1800 blocking filter was ordered on August 29th, 2008 through Tim Nix at **Camera Bug** in Atlanta, GA-USA. **Camera Bug** is an authorized retailer for LUNT SOLAR SYSTEMS in the Southeast. It arrived via UPS ground on September 11th, 2008 in good condition. The unit was heavily bubble wrapped with clear shipping tape that had a LUNT logo on it. The unit was placed in a standard cardboard box with more LUNT tape applied to the outside. It was wrapped well and arrived with no damage.

This is exactly what the unit looked like when removed from the bubble wrap. It felt firmly assembled and had a heavy duty feel to it. The module end of the unit had a thick rubber cap on it which held in place enough to protect it from damage. The



eyepiece end had a red plastic cup in it which was secured with 2 standard screws which controlled a nicely designed compression ring system. I have a large hand and the picture shows the relative dimensions

I completely disassembled the unit and took a look at it's components. I am no expert but it appeared to be a calcium K module, a B1800 blocking filter and a removable 1 1/4 eyepiece shaft along with caps for both ends. The blocking filter had a couple of pieces of excess glue showing inside of it which did not affect the usability. I removed the excess glue.

All pieces were secured with enough machine threads for a secure and tight fit. It felt very well machined. When the eyepiece holder is removed you can screw a T-adaptor straight onto the blocking filter. This looks very handy. I did not get a chance to try this out with my Canon 40D.





The Calcium Module had highly polished surfaces on each side with zero defects.

I took the Calcium K/B1800 system outside and set up my telescopes the usual way for solar viewing. I used a Celestron CGE/GPS mount, an ADM dual mounting plate with a 4 inch and 2 inch dovetail receiver. I placed my Coronado SolarMax 90 on one side and my Meade 80mm ED triplet refractor on the other. I placed an Orion type II white light filter on the Meade just in order to locate the sun first with a standard diagonal. I used 2-25 lb counterweights and a Celestron 17 power tank to complete the setup. I inserted an Image Source DMK 31AU monochrome camera into the Coronado and a 19mm Orion flat field eyepiece into the Meade.

The sky conditions were partly cloudy with towering cumulus at around 3700 ft AGL. The sky was 40% covered with blue sky between the clouds. I was located in downtown Atlanta in what I would call a very hazy and pollution filled environment. The wind was from the NW at 4-5 knots with gusts to 10 knots. I would say 5 out of 10 on the Ramsden scale of conditions.

I pointed my mount North and used the Solar System alignment feature on the CGE to align on the sun and then replaced the standard diagonal with the LUNT Calcium K/B1800 solar diagonal.

I could not see a thing!!!.....then I removed the white light filter that I had left on and my eyepiece was half filled with a pretty bluish purple light. After focusing the image I was treated to a beautiful disk with what looked like a crackled finish with bright light emerging from underneath it. It was VERY exciting as I had never seen a Calcium K image before in person. The contrast was good and the brightness was excellent. I was able to focus to a crisp clear image and just stared at it for a while. The information on CaK light says that it is hard to see visually. It was easy to see in my telescope. It was not as easy to see as the Halpha is for me but it certainly had lots of details and cool stuff to look at. The image to the right is an unaltered image from a DBK31 Color camera. It is 20 frames stacked in Registax and is pretty close to what I saw in color and contrast. The Orion 19mm Flat Field eyepiece showed a full disk image which took up about 50% of the field of view. The DBK31 could not be set to photograph a full disk with the equipment that I had on hand.



It screwed in securely only one way and could not be assembled incorrectly.



I had to remove the eyepiece holder from the blocking filter and duct tape the camera to the blocking filter in order to get it focused correctly. This was expected as my scope has a 600mm focal length and the B1800 is for use in scopes up to 1800mm focal length (and no more than 100mm aperture). It was no more than 1/4 inch from focus without this modification but I just could not get it there with the supplied eyepiece holder. I



am sure that there are Barlows or shorter tubes out there that will solve this issue. Perhaps the B1200 would have been more appropriate for this scope. Anyway, visually it focused perfectly with no alteration.



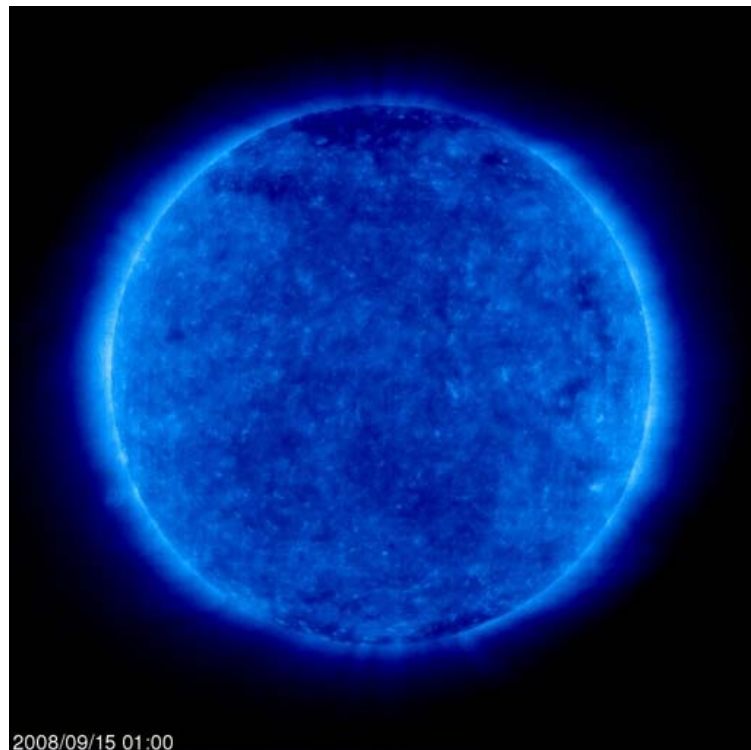
I set up the Ramsden mobile observatory and had at a few runs with the DMK and the DBK camera. The camera picked up a lot more detail on the CaK disk but I am afraid that today was just a feature free day in CaK. Below are a few shots from the DBK color camera after tweaking in Registax and Photoshop CS2. These pictures were processed with slightly different color balances, sharpness and RGB levels in order to show the range of adjustments possible. The images show pretty much what was in the eyepiece except that the edge of the disk was a little blurry in the eyepiece. The surface features were easily recognizable in both the eyepiece and the camera.



The below image is from the \$1 Billion SOHO observatory's CaK "module" at about the same time. I like mine better and it was only \$1000.

What a bargain!! Thanks Andy and Rikki!!

Below are Halpha images from the same time showing corresponding features in hydrogen light. The first one is a composite of disk and a separate flare image.



The below one is a single pass for surface detail. I did not see any corresponding features in the two views but I believe there will be with more extreme solar activity.



I would say in closing that I am very satisfied with the LUNT Calcium Module. It was sturdy and well protected. It fit nicely into my predrilled holes in the Meade refractor case and was easy to use. It should be a great addition to my high school solar outreach program .

Way to go LUNT!! This one's a winner!

Any questions should be directed to ramsden@mindspring.com

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