Ogden Astronomical Society • Ogden Utah

THE STAR DIAGONAL

THE JOURNAL OF THE OGDEN ASTRONOMICAL SOCIETY

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Meeting Announcement

Our meeting for February will be on the 11th. It will begin at 7:30pm in the Ott Planetarium and WSU.

OAS Minutes – January 2009

The January meeting of the Ogden Astronomical Society was held on January 14th. President Dusting Klein conducted the meeting. The announcements were a Star Party at Farmington Jr. High on 1/28. We also have a Star Party in St. George on 2/12-14. Next month Dustin and Dave will not be at the meeting. Vice President Pam is going to plan and conduct the meeting. Rodger volunteered to take notes for the minutes. For show and tell, Stan Martin had a book with some great drawings in it that he had received from his daughter. We then watched a short movie on Astronomy.

After the meeting a large group of us went to Village Inn.

Star Party Schedule

Proposed Public Parties

April 17	Antelope Island
May 8	Antelope Island
June 12	Antelope Island
August 14	Antelope Island
September 11	Antelope Island
October 2	Antelope Island

Our Private Star Parties are as follows.

Feb 12-14	St. George
Mar 12-14	Curlew
May 12-16	Dead Horse Point
June 3 – 6	Craters or Parowan Gap
July 6-11	Monte Cristo
Aug 3-8	Monte or Uintas
Sept 1-6	Campout TBA
Nov 5-7	Curlew

Green Lasers for Sale

Kay Hargis has Jasper green laser pointers for sale. Kay purchased them at a volume discount. They are $31 each and come with 2 AAA batteries and a plastic case. You can reach Kay at n7kh@juno.com.

Product Review....Plus

By Jim McCormick

This month I planned to do just a product review of the Orion StarShoot Pro V2 CCD camera. I purchased the OSSP deep space imager in August, but didn't get into any ambitious imaging as I first wanted to get my observatory functional before cold weather set in. I am really excited about this camera and what it is capable of in comparison to two other deep space imagers I have used (Meade DSI I and SBIG ST7 xmei). Not having accumulated a lot of my own images, especially guided images, I contacted a couple other SS Pro users for permission to use their images in this review. In the process I learned of one intrepid imager from Calgary, Alberta, Todd Benko, with whom I have had several email exchanges. More about Todd later.

"More bang for the buck," pretty much describes this camera from Orion. It sports a huge Sony SuperHAD ICX413AQ sensor which has a 3032 x 2016 pixel (19.7 x 13.1 mm) array. The array is Bayer masked for color photography and can be binned either 1x1 or 2x2. The 2x2 mode is useful in obtaining black

and white images of faint nebulae. You can really go deep with the SS Pro due to its exposure range of 0.002 seconds to 9.3 hours for each light frame. The Pro is cooled electronically (TEC) and can maintain a temperature 30°C below ambient. The camera comes with Maxim DL Essentials for processing images, obtaining dark, flat and bias images, converting raw images to color, balancing color, etc. For those interested in more details, a pdf version of the user manual can be viewed (or downloaded) at http://content.telescope.com/rsc/img/catalog/product/instruction/29365.pdf

And the "bucks?" Compared to $5000-$8000 high end CCD imagers, the Orion SS Pro costs only $1399. I must point out, however, that this camera does not have a separate sensor for autoguiding and you will want to autoguide if exposures of more than 60 seconds are desired. But autoguiding is not an expensive addition. Orion sells an autoguide cameras, e.g., the Orion StarShoot Autoguider for $279.95. Guiding software is cheaper----free. Probably the best of the freeware is PHD (Push Here Dummy) guiding, the software used by Todd Benko (see below). Of course, you will also need a guidescope mounted on your imaging scope OTA. Orion recommends their ShortTube 80 ($129.95) for guiding. In addition, a dovetail bar and mounting rings will be needed (around $200). So the SS Pro plus guiding hardware will run around $2000. That is 1/4th the cost of an SBIG STL-6303E.

The final comparison between the StarShoot Pro and more expensive cameras is in their images. Below are a couple of images taken with my SS Pro and two taken by other SS Pro owners. As to my images, to date I have taken only one guided image, but several unguided images. Last Fall I bought an Orion StarShoot Solitaire Autoguider (not the same as the Orion StarShoot Autoguide). This unit costs about $100 more than the OSSA, but is a stand-alone guider; it does have to be connected to a laptop. Personally, I do not recommend the Solitaire. It is difficult to calibrate and has not had good reviews. I haven't given up on it yet, but have decided to use my DSI camera with PHD guiding, which works fine. By the time I started to experiment with the DSI, the weather turned from bad to awful. As soon as conditions improve, I will start to work on my guiding technique. My images include the Helix Nebula and The Wild Duck Cluster. The Helix is a single (does not consist of stacked raw images) color 60-second image. The Wild Duck was also a single color frame, but a two minute exposure. As example of what can be done in the hands of an experienced user, I offer the Rosette Nebula by Will Day of O'Fallon, Missouri and the Alnitak region of Orion (the Flame Nebula and the Horse Head) by Todd Benko of Calgary, Alberta. Both images are used by permission.

Many additional examples showing the quality of images taken with the SS Pro can be found on the web at http://calastro.web/apps/photos/photoid=66863912 (Todd Benko's image site) and http://picasaweb.google.com/will.day.stl/StarshootProV2 (Will Day's photo site.

Orion StarShoot Pro users have a Yahoo Groups site through which I made contact with Todd Benko. The SS Pro users group has a monthly imaging contest and Todd was the winner of the December event. Each month, a different subject is chosen. Mr. Benko's image of "The Flaming Star Nebula" got the most votes from fellow imagers. To see this image, go to the site listed above. You will find it in his "Nebulas" album. Keep in mind, the image was made from a combination of 15, 20-minute subs. Total imaging time alone totals five hours and does not include the taking of darks and flats. The exposure of dark frames has to match the exposure time of the light frame, although five or so averaged darks are sufficient. This adds at least another hours and forty minutes at the telescope. Darks must be taken at a temperature close to that existing when light frames are taken.

To me, what is most remarkable about Todd's images, is the conditions under which most of them were taken. I noticed he listed Didsbury, Alberta as his imaging location for most of his images. I guessed he must have an observatory there, but I was wrong. Todd

actually lives in Calgary and travels about twelve miles north to Didsbury to a friends house to get away from Calgary's light pollution. His image of The Flaming Star was taken at 30 below zero!

I asked him how he can possibly keep his equipment from freezing. Todd explained that the only thing he is concerned about is his laptop. He told me he keeps it warm in his car until he gets to the remote site. Once there, he transfers it to his friends garage while other equipment is be set up. The equipment includes a 190mm Mak-Newtonian reflector mounted of an Equinox EQ6Pro mount for imaging, a Skywatcher Equinox 80mm refractor for guiding and an Orion StarShoot Pro for autoguiding. The imaging camera, of course, is an Orion StarSoot Pro V2. To save setup time, all electronics are connected to a USB hub connected to the mount. This in turn connects to the laptop via a single cable. According to Todd, once the laptop is fired up, it stays warm enough to get him through a session. It is then transferred to his warmed-up car for the return trip home. Care must be taken to get the laptop back to room temperature before turning it back on. He did lament that he gets a bit nervous when he sees frost on his laptop and that his laptop display starts having issue from 30 to 40 below, but so far, he has no damage to his gear. I wouldn't have thought it possible.

So here I am, a cold weather wimp in my warm room (inside temp 55 when outside temp is 10) worrying about keeping my laptop and LCD hand controller warm. It's an embarrassment. My hat's off to Mr. Benko. We all should have such dedication to our hobby. Being curious, the night before writing this article, I checked the temperature for Didsbury. It was -17.