

# Rappahannock Astronomy Club

## Minutes, May 13, 2009, Meeting

In attendance:

- Barton Billard
- Scott Busby
- Brenda Conway
- Victor Fisher
- Joe Francis
- Tom Harmon
- Dan Lien
- Glenn Holliday
- Michael Masters
- Tim Plunkett
- Javier & Ruby Valverde

President Scott Busby opened the meeting at 7:00 p.m. with introductions around the room. Two visitors returned and one new visitor joined us. Glenn came briefly to deliver the Club Dob and seven other members were present.

## Program

Scott Busby presented his program, "Basic Webcam Astrophotography." Technology for amateurs to do excellent astrophotography has become more and more available. A good way to get started is with a webcam, and the easiest subjects to photograph are the Moon and planets. Webcam photography can be easy, ("kinda") inexpensive, fun, requires minimum skill, and is a great starting point for more advanced astrophotography. The preferred telescope to use is one with a tracking mount, but webcam photography is possible with alt/az telescopes like Dobsonians, especially for the Moon, or the sun with a filter.

Additional needs are a computer (an older model will do), software to run the camera, and software to process images. Software to run the camera normally comes with the webcam; also, image-processing software often supports popular webcams. For processing the images, Scott listed a number of options. For this presentation, he showed how to process images using K3CCDTools, a program that is available for download for a trial period and requires registration at a modest price to continue using. Other choices are Registax (freeware), MaximDL, and CCDSoft. Scott prefers to make final image adjustments with image-processing software built for general photography. Examples are Adobe Photoshop and Corel Paint Shop Pro.

He gave us a step-by-step illustration of creating an image of Saturn. He had taken about 1,000 images of the planet at 5 frames per second for the raw material. Taking video allows the image processing to remove effects of drift of the image and of variations in seeing that cause quality to vary from image to image. Scott said taking more images allows you to be selective in throwing away poorer quality images and combining the good images to get a better result than any single image. The limit with planets like Jupiter and Saturn is their rotation. Features blur if the total time of the sequence is too great. We saw how he located the image sequence with the image processing software, selected the area with Saturn for processing from the display of the first frame, and ran the calculation to compare the frames and rearrange them from best quality to worst. The K3CCDTools software has a "planetary wizard" to simplify the process and to provide some good default choices of the processing options.

After the calculations, the software displays a suggested reference image and graphs of the relative quality of all the images. It allows the user to review and change the choices of reference image and the highest quality images to use for "stacking." A simple way is to decide how many should be stacked to make the final image: for example, Scott used the top 100. The stacking involves aligning the individual images so that the planet is in the same place and orientation. (Alt/az telescope mounts may track to try to keep the object in the same place, but allow the image to rotate. Equatorial mounts could allow some rotation if not accurately polar aligned.) Then the selected images are added together, providing the benefits of time exposure.

By this point, we had seen the image of Saturn improve from a typical single frame, to a selected top quality frame, to a stacked image. The software allows further adjustments such as color balance, contrast, and sharpness. The image can also be adjusted with programs like Photoshop. Scott finished with a nice image showcase including the Moon, Mars, Saturn, and Jupiter.

## Treasurer's Report

Tim presented the reports for March and April. He said he made one change to the March report because it omitted a member who joined last October. As of April 30, the Club has 16 paid members. Tim said the bill from the Astronomical League for continuing the Club membership came in, so it is time for the Club to decide whether to continue membership. Scott moved and Tom seconded continuing Club membership in the Astronomical League. There were no objections.

## Old Business

The Star Party events coming up are Westmoreland backup on May 16 and Caledon Primary on May 23. Mike noted that the Westmoreland primary in April was a success and the backup was not needed.

Galileoscope purchase—The number to order was reviewed. Requests were two each for Mike, Bart, Chris, and Tom, one for Scott, and three for Dan. Because some of the members were ordering an extra for the Club, it was decided not to order any from Club funds. The count came to 14 at \$15 each plus an estimated \$4.42 each for shipping. Tim said he would place the order, and the members requesting telescopes should pay him.

Club mailbox—Tim moved not to continue paying for a Club mailbox. The motion was seconded, and the Club voted in favor.

Universe DVD series—The purchase approved at the last meeting is planned for the end of the month when the full set, including *The Planets*, is available.

Big Meadows Star Gaze—Because of past difficulties in making arrangements with the Park Service, Mike recommended at the last meeting making the Star Parties at Big Meadows Club-Only events, and not try to advertise them to other clubs. He offered a motion to that effect and Tom seconded him. The motion passed.

Plan for RAC attendance at regional star parties—Joe Francis reported results of his survey and presented the list of five star parties that best matched the consensus of the responses:

- 1-day drive
- weekend stay
- willing to camp
- vendors and demos desired
- warm weather preferred
- reasonable cost (around \$100 or less)
- setup near vehicles
- availability of daytime attractions and natural area views.

He suggested the Green Bank event at the end of June would be a good choice for Club consideration if it is not too soon to arrange.

Meeting room alternatives—Scott told us that most of the alternative meeting location choices fell out of contention, leaving the Pizza Hut or Stafford Church location as our choices. A motion was made to try Pizza Hut for the next two meetings. Tom seconded, and the motion passed on a show of hands.

## Next Meeting

The next meeting is scheduled for June 10, 2009, 7:00 p.m., at the Pizza Hut, 1224 Powhatan St., Fredericksburg.

Submitted by Bart Billard, Secretary