

## S. C. R. A. P. S.

Society's ChRonological Astronomical Papers



### In this issue:

- [Message from the President](#)
- [Election of Club Officers for 2011](#)
- [Recommended Beginner Astronomy Targets](#)
- [Interview](#)
- [Upcoming Events](#)
- [Minutes from February meeting](#)
- [Calendar - March](#)

### Message from the President

I very much appreciate the trust the SMAS members have placed in me by electing me as President for 2011. I find the job somewhat intimidating and I know it will be hard to fill the shoes of those able members who have served before me. I would very much like to thank our outgoing president Lee Erickson for his unwavering dedication to SMAS for many, many years. I also want to thank all the other officers from 2010 as well as previous years that have made our involvement with SMAS so enjoyable. I for one really appreciate the service to the club that our more experienced members have provided and I very much hope that they will continue to stay active and involved.

We have held one planning meeting and I am pleased to see the excitement and commitment exhibited by the other new officers. We will have a full starparty calendar and a program lineup that hopefully will interest both novice as well as experienced amateur astronomers. It is also an encouraging sign to see that we have signed up 5 new members in the last 2 months. Hopefully we can provide an appropriate educational environment so their interest in astronomy will be nurtured and grow.

We will review the initial plans for 2011 at our March meeting. We want to hear ideas from all the membership on how we can make our meetings and activities more useful and enjoyable. Please attend the March meeting and participate in the discussions.

Best regards,  
**Jim Sanders**

## Election of Club Officers for 2011

[Back to Top](#)



Here are our recently elected officers for 2011:

|   |   |  |   |
|---|---|--|---|
|  |  |  |  |
| President<br>Jim Sanders  | Vice President<br>Vicente Diaz  | Secretary<br>Noah Frere  | Treasurer<br>Brent Holt   |

## Recommended Beginner Astronomy Targets

[Back to Top](#)



### M35: Open Cluster in Gemini

|                           |  |
|---------------------------|--|
| Catalogues                | M35; NGC 2168  |
| Names                     | Open cluster in Gemini   |
| Type                      | Open Cluster   |
| Constellation             | Gemini   |
| Season Visible in Evening | Winter; November - April   |
| Conversation Notes        | Large bright open cluster in Gemini. Several hundred stars - around a hundred visible in a small scope. Compare to the nearby M37 and M38. |

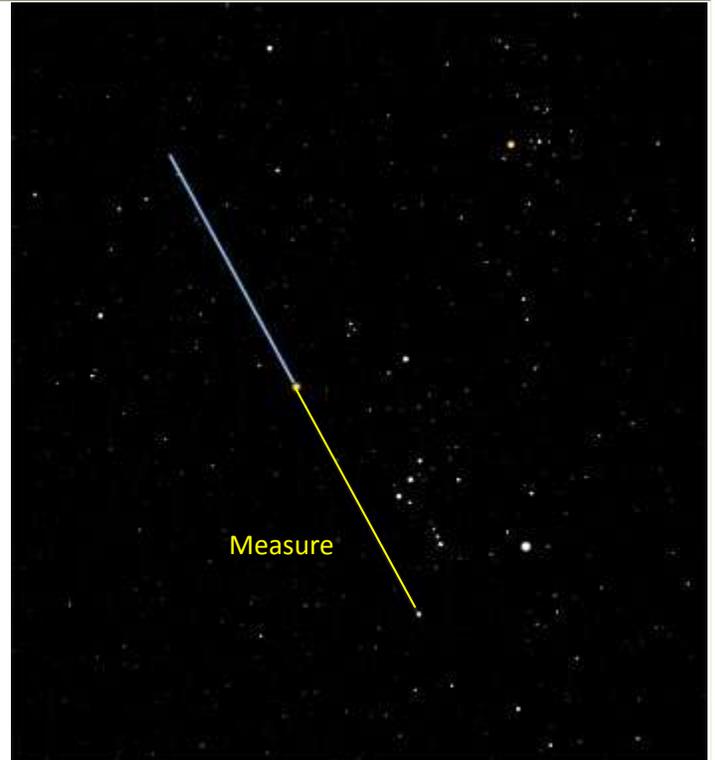
Open clusters are easy to find and observe in small telescopes, pretty, and scientifically important. This is a group of stars all born from a common cloud of gas and dust. Since they came from the same gas cloud they are, astronomically speaking, all about the same age and all about the same distance from us, and they all started with about the same chemical composition. Knowing that they are the same age and at the same distance, the fact that they have different appearances allows us to learn a great deal about stellar evolution - the different appearances can only be a result of the different masses of the different stars.

## Finding M35

Like many of the other winter open clusters, start by finding Orion in the southern sky. Orion is easy to find by looking for his distinctive 3-star belt.

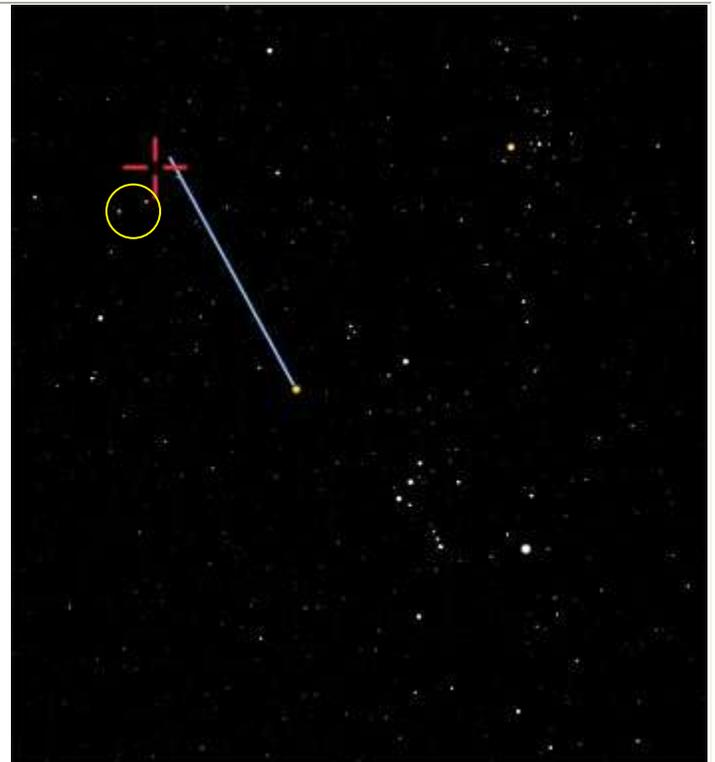
Note the distance between his left foot and his left shoulder - we will use that as a measure.

Mentally extend that line in the same direction, the same distance.



Note that you end up just above and to the right of a pair of dim stars. (These are part of the foot of Castor, one of the Gemini twins.)

Point your telescope to the left of the end of your imaginary line. The distance to the left is about the same as the distance between two stars in Orion's belt.



In your magnifying finder, you will find M35 as a small fuzzy patch of light.

(If you don't have a magnifying finder, hunt around with your telescope, with your lowest-power, widest-field eyepiece.)



This simulation shows the appearance of this cluster in a 100 mm refractor with dark skies, at about 35x magnification. Note the interesting internal structures that the density and location of the stars seem to trace out.



All the above images were generated with [Stellarium](#) and [Starry Night Pro](#).

\*The above article is part of a presentation prepared by Richard McDonald and used with his permission.

[Back to Top](#)



## Interview with SMAS Member

This section is available only to SMAS regular members

## Upcoming Events



**March 11, 2011 – Regular SMAS meeting at PSTCC**

**Back to Top**

### **Tentative program:**

1. Group discussion on club programs and activities for 2011 including Star Party Calendar
2. Brief Night Sky update
3. Michael Littleton: [Equatorial Alignment](#)
4. Lee Erickson: Things to know about Star Parties

## Meeting Minutes

Any corrections to these minutes should be sent to JC Sanders ( [sandersj@chartertn.net](mailto:sandersj@chartertn.net) )

The regular SMAS business meeting was held at PSTCC on Friday, February 11, 2011

The meeting was called to order by President Lee Erikson. Those in attendance were: Erik Iverson, Angela Quick and Miles, Jerry Kornegay, Duane Dunlap, Lee Erikson, Michel Reuter, Jim Sanders, Noah Frere, Brent Holt and Samantha, Michael Littleton, Vicente Diaz, James East, Gary and Ann Bridges, and Michael McCulloch.

Visitors: James Brooks and daughter Meka, Mark Ziolkowski, Ray Weedon, Robert Howard, Mike Masalona (GSMNP)

### Discussion:

Lee passed out several posters he received from one of the Astronomy Education Resource Groups that sends information to our club.

Mike Masalona (Park Ranger for GSMNP) talked about the successful 2010 Star Party in Cades Cove and thanked SMAS for their wonderful support. Part of the reason for the overwhelming attendance is the fact that there was national publicity on the Park Service website. The National Park Service has a National Park Service Night Sky Program and Chad Moore is the Manager. The NPS has developed a Junior Ranger Night Explorer program, encouraging young park visitors to explore the dark side of their national parks. At our meeting, Mike presented a Junior Ranger Night Explorer Patch to Samantha Holt.

The main purpose for Mike's visit was to discuss plans for 2011's Cades Cove event. Due to the heavy demands on Park Resources in October, Mike requested that SMAS consider having the Cades Cove event in late September this year. Also, in all our advertisement for the event, we should recommend that people car-pool to help alleviate the parking problem. Also, in case of rain, the event will be canceled with no alternate date.



Mike and Brent perusing a poster



Mike Masalona talks about the Cades Cove Event

Program: "The Night Sky" by Duane Dunlap

Duane shared some photos he has taken with his SBIG ST-2000XM CCD camera including a nice shot of M35 where he also captured several galaxies including NGC 6207. Duane covered the Winter Constellations now prominently in view now and pointed out various objects of interest:

Camelopardalis: Pearl Nebula (NGC 1501) and Kemble's Cascade

Gemini: M35, Eskimo Nebula (NGC 2392) and double star Castor

Orion: M42 including the Trapezium

Monoceros: Rosette Nebula and star cluster (NGC 2337-39)

Canis Major: M41, double star Sirius A&B, and Thor's Helmet (NGC 2359)

Auriga: M36, M37, and M38

Cancer: Beehive Cluster (M44)



Duane Dunlap during presentation



Duane's image of M35

Program: "Optical Performance of Telescopes – Optical Aberrations" by Michael Littleton

Michael's introduction listed some of the factors affecting a star image:

1. Gas and dust in the atmosphere
2. Atmosphere conditions such as turbulence
3. Optical quality of the telescope
4. Diffraction effects due to telescope optics and construction

Michael went into details on the following topics:

1. Diffraction: Since light is a waveform, interference bands appear as rings around the star
2. Chromatic Aberrations: Different wavelengths (colors) of light do not focus at the same point. Common when less expensive glass is used for the lenses

3. Spherical Aberrations: Spherical aberration occurs due to the increased refraction of light rays when they strike a lens or a reflection of light rays when they strike a mirror near its edge. Thus the light is focused at different positions with the correct image at the center. Corrector plates are used on Schmidt-Cassegrain scope to prevent Spherical aberrations.
4. Coma: Coma is an inherent property of telescopes using parabolic mirrors. Light from a point source (such as a star) in the center of the field is perfectly focused at the focal point of the mirror. However, when the light source is off-center (off-axis), the different parts of the mirror do not reflect the light to the same point. This results in a point of light that is not in the center of the field looking wedge-shaped. The further off-axis, the worse this effect is. Schemes to reduce spherical aberration without introducing coma include Schmidt, Maksutov, ACF and Ritchey-Chrétien optical systems. Correction lenses for Newtonian reflectors have been designed which reduce coma in telescopes below  $f/6$

New business:

Treasurer's report:

|                          |                  |
|--------------------------|------------------|
| Balance as of 5/31/10    | \$1007.95        |
| Expenses                 | 906.21           |
| Income (dues, donations) | <u>844.00</u>    |
| New balance              | <b>\$ 945.74</b> |

Elections:

The nominations committee for 2011 was made up of Jim Sanders, Michael McCulloch, and Lee Erikson. During the January meeting the committee had submitted the following nominations for the 2011 term:

|               |              |
|---------------|--------------|
| President:    | Jim Sanders  |
| V. President: | Vicente Diaz |
| Secretary:    | Lee Erikson  |
| Treasurer:    | Brent Holt   |

At the January meeting during floor nominations, Noah Frere was nominated for Secretary.

Prior to voting, Lee Erikson withdrew his name from nomination for Secretary.

A voice vote was taken and the elected officers for 2011 are:

|               |              |
|---------------|--------------|
| President:    | Jim Sanders  |
| V. President: | Vicente Diaz |
| Secretary:    | Noah Frere   |
| Treasurer:    | Brent Holt   |

The meeting concluded at 9:30 PM.

Submitted by J. C. Sanders  
February 11, 2011



**Back to Top**

## March 2011

| SUNDAY   | MONDAY | TUESDAY   | WEDNESDAY   | THURSDAY   | FRIDAY  | SATURDAY  |
|--|--------|---|---|--|---|---|
|  |        | 1   | 2   | 3  | <b>4 UT K</b><br><br><b>New Moon</b><br><b>20:46 UTC</b> | 5   |
| 6 Jupiter is 7 degrees south of the Moon at midnight       | 7      | 8   | 9<br>ISS flyover<br>Maximum alt @<br>19:51:55 Alt 76°<br>Az 225° (SW) | 10   | <b>11 SMAS Meeting</b><br><b>PSTCC 7:30 PM</b><br><br>Moon 1.7 degrees south of M45 at midnight   | 12 <b>TAO</b>   |
| 13 Daylight saving time begins at 2 a.m.                   | 14     | 15<br>Mercury will lie two degrees to Jupiter's right in the western sky in early evening | 16<br><b>Saturn rise 21:07</b><br><b>Culmination: 03:03</b>           | 17   | 18 <b>UT K</b>  | 19<br><br><b>Full Moon</b><br><b>18:10 UTC</b> |
| 20 The Vernal Equinox occurs at 23:21 UTC                  | 21     | 22<br><b>Algol minimum for 2 hrs centered at 02:49 EDT</b>                                | 23  | 24<br><b>Algol minimum for 2 hrs centered at 23:38 EDT</b> | 25  | 26 <b>TAO</b>   |
| 27<br><b>Algol minimum for 2 hrs centered at 20:27 EDT</b> | 28     | 29  | 30  | 31   |   | April 3rd, Saturn in opposition, closest to Earth reaching 43".7 arcsec and Ring tilt = +8°.6                                     |

UTK – roof of Neilson Physics Building on the Hill At UT on 1<sup>st</sup> and 3<sup>rd</sup> Fridays  
<http://www.phys.utk.edu/trdc/telescope.html>

TAO – Tamke-Allen Observatory  
 Public Stargaze  
 Watts Bar Lake, Roane County  
 1<sup>st</sup> and 3<sup>rd</sup> Saturdays  
<http://www.roanestate.edu/obs/>