Observing Special Interest Group
Session 10 – May 19, 2021

INTRODUCTION

Hello to all!

It is time for another TAS astronomy Observing Special Interest Group meeting. I hope all is well with you and your family. Are you ready to talk observing once again? Tonight our main topic will be "star parties" that some of our friends have attended. The what? why? and how? of these events. We hope to show you what to expect, why they may be right for you and how to get involved with a star party.

Note there are two basic types of star parties. We have our public outreach events around town that we hope will be restarting soon. Due to Covid 19 these events have been shut down over a year. When we restart there should be one each Saturday night through the first four weeks of the month. The purpose of these star parties is to promote astronomy to the public. In addition we one put on events at schools and libraries in an effort to reach students. Young people are the future of our organization so always take the time to encourage a student.

The second type of star party is one where dozens, or even hundreds of amateur astronomers get together for several days. The goal of course, is to observe to their heart's content under very dark skies. This kind of star party that will be our focus tonight. You will need all your equipment, food and camping stuff. Some star parties provide meals and some do not. Also, some star parties have sleeping accommodations and others do not. So, once you see a star party that fits your schedule you will need to investigate these benefits and all the prices.

To give you a little help, I have attached a list of all the things I have learned that are needed when away from home for several days to do astronomy. We will not have time to go over it tonight, but read it. You might find some items that never occurred to you.

For our first speaker tonight, I would like to introduce our President Doddie Reagan. She is very familiar with the Eldorado Star Party.

Next we have Chaz and Dennis who are just back from the West Texas Star Party.

Best Regards,

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June Observing Objects

I hope you have had fun looking for all the galaxies in Leo that we talked about last month. I had a second look at them a couple of weeks ago, and depending on your scope those can be very easy or quite hard to see. How did it go for you?

June is a great month to look for galaxies and globular clusters. So expand your hunt for galaxies if you want, but now we can add a new group of very exciting objects for your evenings under the stars. I have chosen four very popular and bright globular clusters that should peak your interest. These objects appear as if somebody made a tiny snowball from delicate little diamond chips and left them in the sky for us to see.

M3 is a 6.2 magnitude globular cluster, 18 arcminutes wide. Most all of the composite stars are beyond the reach of a 4" refractor or a 6" SCT but a few at the edge shine through with direct vision. An 8" scope will resolve this one quite well. People with smaller scopes will have to use the technique known as averted vision. (Look at the very edge of the cluster and vòila, dozens of stars magically appear in the corner of your eye. Once you look back at the cluster directly, those stars all disappear.) In my 6" SCT I found the best view came through a 12.5 Takahashi @ 120x. Of course if you have a 10" or larger scope the view is a spectacular burst of hundreds of stars. And that is only a small fraction of the numbers of stars that are really there. M3's total luminosity is equivalent to 300,000 suns and it is located 34,000 light years from Earth. The true diameter of M3 is about 180 light years. It is truly a fine object for late spring viewing.

To find M3 it is a little trickier than most of the objects that we have studied so far. It would be best if you first used binoculars and then try it with your telescope. M3 is found on a line between the brilliant stars Arcturus in Bootes and Cor Caroli in Canes Venatici. M3 is just a little closer to Arcturus

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M5 is a little different in appearance. Although it is brighter at magnitude 5.7, the stars as a whole, are a little dimmer than those of M3. This means you will struggle a little more trying to resolve the face of this fuzzy little ball into stars. At least I found this to be so in my 6" SCT. Once again, people with smaller scopes will have to play the game of averted vision with this object, but people with at least an 8" scope can see many more stars directly and resolve it quite well. I could see very

few stars with direct vision and perhaps only 25 using AV. Also, I found a little less power, 94x, gave the best results. Using higher power started to smear the view.

M5 is not only brighter but is also larger at 24 arcminutes and closer to us at only 24,500 light years. There have been many estimations of the number of stars in this cluster, which vary wildly from 100,000 to 500,000. At this time of year, M5 is well above the horizon as soon as it is dark. However, you may want to wait a bit so it can get higher in the sky to get the best views.

To find M5 is a little easier. Although it is in the constellation Serpens, start in Virgo. Once you have discerned that asterism, pay attention to her top leg and follow it out past the toe. Continue on that line of sight to 110 Virginis, a 4.4 magnitude star that should be visible to the naked eye. M5 sits about 1 1/2half low power fields further along this line. There can be no doubt once you have spotted this brilliant cluster. M5 also is very apparent in binoculars just like M3. Once found this way, M5 is quite easy to locate in the scope.

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M13 is a fantastic object. It is 5.8 magnitude, spans 20 arcminutes which translates to about 180 lys and lies 23,000 lys away. Once again the estimated number of stars in M13 varies greatly from 500,000 to over 1,000,000. Unlike M3 and M5, this globular cluster is a little less dense which makes it easier to resolve. Also, it is closer and has more stars brighter than magnitude 13. All of these factors add up to make M13 show better in small scopes. In short, M13 is a real treat for your viewing pleasure.

In my 6” scope I see about 30 stars with direct vision and close to a total of 50 stars with AV. Star chains shoot out from all sides and many more stars resolve across the face. An 8’ scope will resolve hundreds of stars. A 12” scope at +250x power will show the trained observer an interesting little feature near the center of the cluster called the propeller. There are three dark lanes that arc to a central point just below and east of center that gives the viewer the impression of a little propeller.

Stephan J O’ Meara sees M5 as the better cluster while I find M13 to be the better of the two. What do you think? Check these out and let me know. In the end, even though M22 and M4 are summer objects and will not be covered here, I see those two as the best of the globular clusters. Living in Texas has its advantages, since we are just enough further south to get the better view of these two. Sometimes just a few degrees can make a big difference.

To find M13 is pretty easy. Look at the star Eta Her, which is the western shoulder of the asterism. There will be a slight smudge about three degrees south of the star on a clear night observing from a dark sky site. This is M13. Be sure you track due south from the star. Use Polaris to help you line it up. Do not follow the shape of the keystone. Once again it would be best to first locate this object in binoculars.

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"Since you was" (as Jeff Foxworthy would say) in Hercules, try **M92**. I hadn't gone to this one in a long time and much to my surprise it showed very well. In a lot of ways I found it to be more pleasing than M3 or M5. It has a more coarse appearance and lots of brighter stars at the periphery, which made it a very nice object. It presented almost as many stars as M13. M92 is easily seen at 6.4 magnitude and 14 arcminutes of diameter. In the grand scheme of things, it is not that far away for a globular cluster at 26,000 lys. It has a luminosity of about 150,00 suns and a true diameter of 100 lys.

In the 6", M92 has about 20 direct vision stars at the edge and perhaps twice as many that can be seen across the face. It also has a very small core that will not resolve. Overall, M92 is a very pleasant view. Here is one tidbit of information about this globular. It lies near the celestial pole, so accounting for the Earth's precession, M92 will come within one degree of the pole in about 14,000 years. When it does be sure to give me a call.

Finding M92 can be as tricky as finding M3. But there is a way to make the job a little easier. First locate Iota Her which is the eastern hand and imagine a line between it and Eta Her over at the west shoulder near M13. Next imagine a line due north from Pi Her which is the other shoulder. Where the two lines intersect comes within one degree of M92.

Ophiuchus is covered with bright globular clusters. However, none are as bright as these four and all of them will take a medium to large scope to be seen well.

Good hunting and good luck!

Lloyd Lashbrook, TAS Observing Coordinator