THE Eyepiece

May 2005
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Monthly Publication of the Neville Public Museum Astronomical Society

What's up:

NPMAS Club Loaner Telescopes

NPMAS members may use, free of charge, for a one month, one of the two club telescopes available. For more details, please contact Gerry Kocken, *Properties Chair*, at 920-336-8594.

Astronomy at McAuliffe Elementary School

by Wayne E. Kuhn

My daughter Ashley's 3rd grade teacher at Christa McAuliffe Elementary School in Bellevue asked me if I would be willing to do a talk to her class as well as four other 3rd grade classes. We eventually picked April 5th for the event and decided to do some solar observing at 1:00 PM and then do the talk at 2:30 PM. Since five classes is over a hundred kids I sent an email out to NPMAS members for help.

My plea was answered by Katrina DeWitt and Dan Ankeney. All three of us set up our scopes equipped with solar filters and gave the kids and teachers three different views of the sun. We were also able to give them a visual tour of available telescope types because I had my SCT, Katrina had a Dobsonian, and Dan had his refractor. The boys and girls really enjoyed the telescopes (or the time out of class?) and things went very smoothly. Even the talk I gave on "The Dynamic Sun" went well.

Every year Christa McAuliffe Elementary School has "Family Space Night". This night is devoted to entertaining kids and parents with science related activities and displays. Since my son Tyler started kindergarten there I have been asked to participate by setting up one or more telescopes to show off the delights of the night sky. This year's event took place on April 14th, a week after daylight savings. I was worried that by the time it got dark (after 8:00 PM, the end time of the program) that most people would be gone. Fortunately that wasn't the case.

I set up my 10" SCT at around 5:30 PM and armed it with a solar filter. As parents and kids started to trickle in I gave them a view of the sun through the telescope and also a pair of eclipse shades. Eclipse shades are especially useful for the youngest kids because they have a hard time using a telescope (their eyes are too close together and their nose gets in the way). NPMAS members Tom Cashman and Gerry Kocken also showed up to help out. As the sun started to set all three of us turned our attention to the crescent Moon.

People came out of the school in small batches and business at the three scopes was steady. Eventually both Saturn and Jupiter became targets and the "oohs" and "aahs" abounded. Saturn was especially impressive to many of the "first time" observers who were astonished how clear and crisp it looked, "just like a picture!" When the principal came out (the last man in the building) we treated him to a view of all three objects, and then packed up. It was a great time!

Thanks to my friends Katrina, Dan, Tom and Gerry, both events were a big success.

Meetings, Events & Star Parties

May 1
Last Quarter Moon

May 3
DPAS General Meeting

May 4
Aquarid Meteors Peak

May 6-7
Parmentier Observing Weekend

May 8
New Moon

May 11
NPMAS Monthly Meeting

May 13
NEWSTAR Public Observing, Mosquito Hill Nature Center

May 16
First Quarter Moon

May 18
NEWSTAR Monthly Meeting

May 23
Full Moon

May 24
Moon Occults Antares

May 28
DPAS – Festival of Nature Star Party, Collins Learning Center 7pm

May 30
Last Quarter Moon

May 31
European Space Agency (ESA) 30th birthday

Looking Ahead:

June 2-5
Wisconsin Observer's Weekend – Hartman Creek State Park

Those of who have been around the club for a while will recognize this classic column, while those who are new to the NPMAS over the last couple of years are in for a treat. Dan Sheber's "Scopic View" column has been around since the beginning of the newsletter many years ago, but he has had quite a lengthy vacation from it. It is time to bring back this old favorite! - *editor*

A SCOPIC VIEW
FROM GALAXIES TO GLOBULARS

by Dan Sheber


Image courtesy Anthony J. Kroes

For this month's Scopic View, I'd like to first focus on M51 (the Whirlpool galaxy). Right now, M51 is at a prime position in the evening sky to see optimum detail in its awesome spiral structure. To hunt down this lovely beast, I suggest starting with a low magnification before closing in on it with higher power. M51 is fairly easy to find, but may be quite a bit dimmer than you are expecting if this is your first time looking for it. Those Hubble Space Telescope pictures can be deceiving!

First you need to find the "Big Dipper", and then go to the end star of the handle (away from the dipper part). This star should be your starting source for star hopping with your finder or Telrad. Move downwards (south) about one finderscope field-of-view until you see a triangular formation of stars that are about 6th magnitude. In your finder, you should be able to see a faint blur at the southern portion of the triangle, but just outside of it. That blur will be M51 and its companion, also known as NGC 5194 & 5195. Now you're ready for the 'scopic view!

Depending on your scope, an increase in power might help. A little more power should create more contrast and allow you to see the spiral arms better, but try to stay within 20x times the inch diameter of your primary optics to maintain good sharpness as well. That is, if you have an 8" scope, do not exceed 160x at this point. A Skyglow filter would be the only LPR/Nebula filter suitable for galaxies, but shouldn't be needed here.

I would also like to share an interesting Globular Cluster experience. I was observing during the last New Moon period, and looking at all types of objects until I decided to get a peek at M3 and M13. Just before I went to these 2 globulars, I was observing the planet Saturn. While observing Saturn, I had my 12.5" scope stopped down, which always works well in planetary observing. When I went to M3 and M13, I forgot to take the stop out, but the view of the 2 globular clusters was rather interesting in spite of this.

The stars in the clusters looked sharper, and I could actually see more stars in the center (nucleus) as well as getting a slightly more 3D effect. Now, keep in mind that this technique will only work on the brightest globular clusters, and also with large enough telescopes, but it may be worth trying with your scope!

As more globular clusters become visible this coming Summer, I will feature some more here, as well as some Planetary Nebulae, and other objects of interest. Until then, clear skies to all!

Planet Watch For May

by Wayne E. Kuhn

Mercury is not at a favorable position for observing this month. Your best chance of seeing it is on the morning of May 6 when it is only 3 degrees to the lower right of the crescent Moon. It shines at magnitude –0.2 and is 6.3" in apparent size.

Venus will slowly emerge in the west-northwest at evening twilight. It shines at magnitude –3.8 and is 9.9" in apparent size.

Earth's Moon: Last Quarter Moon is at 12:24 AM CDT on the 1st. New Moon is at 2:45 AM CDT on the 8th. Moon reaches apogee (251,406 miles from Earth) on the 14th at 8:00 AM CDT. First Quarter Moon is on the 16th at 2:57 AM CDT. Full Moon is on the 23rd at 2:18 PM CDT. Moon reaches perigee (226,328 miles from Earth), on the 26th at 5:00 AM CDT. The second Last Quarter Moon of the month is on the 30th at 5:47 AM CDT.

Mars is in Aquarius and rises about 2.5 hours before the Sun. It is low in the east-southeast at the beginning of morning twilight. Mars will be in opposition later this year, which is the best time to observe it. It shines at magnitude 0.5 and is 7.1" in apparent size. **Mars passes 0.5 degrees north of the Moon on May 31.**

Jupiter is in Virgo, stands about 40 degrees high at the end of evening twilight and sets around 3:00 AM in the west. It shines at magnitude –2.3 and is 42.3" in apparent size.

Saturn is in Gemini and is rapidly sinking in the glare of evening twilight in the west-northwest. It shines at magnitude 0.2 and is 17.4" in apparent size. During the first quarter of 2005, the tilt of the rings increases slightly from 22.5 degrees to 24 degrees. It will then decrease to 17.4 degrees by mid-October.

Uranus shares the constellation Aquarius with Mars this month. It shines at magnitude 5.9 and is 3.4" in apparent size.

Neptune rises just before 3:00 AM and is in the constellation Capricorn. It dimly shines at magnitude 7.9 and is 2.2" in apparent size.

Pluto is in the constellation Serpens, shines at magnitude 13.9 and is 0.1" in size.

NCRAL 2005

by Anthony J. Kroes

A few weeks ago the Door Penninsula Astronomical Society hosted this year's regional convention of the Astronomical League. By all appearances, it was a great success!

Things fired up Friday evening with early check-in, but snow showers put a damper on the planned observing session. Saturday dawned cold and blustery, but the facilities for the event were warm and inviting.

Speakers over the course of the day covered a wide variety of topics including NASA's Deep Impact mission, searching for supernovae, radio astronomy, grinding mirrors, video astronomy, and teaching kids astronomy by using popular literature & movies.

In between the talks were breaks where folks gathered around the great spread of food and baked goods while discussing things or perusing some of the displays and photographs set up around the nicely appointed Collins Learning Center.

Other activities included a couple of door prize sessions - there were plenty of godies for all (well, *almost* all!) as well as a business meeting for the AL coordinators and officers later in the afternoon.

In the evening at a local hotel came the social hour and dinner. Renowned astrophotographer Don parker showed us some great shots of previous apparitions of Mars and got us prepped for the next one later this year.

The food was great, Mr. Parker was really funny, and after the dinner was an award presentation. Katrina DeWitt was awarded for her long time service to the Astronomical League and tireless devotion to public outreach. Congratulations Katrina!

At the end of it all came the big door prize giveaway. As usual, NPMAS came away with the lion's share of the loot. Katrina DeWitt, Gary Baier, and Amy Hannon-Drew were alll big winners!

Building a 16" AstroSystems TeleKit-Part I

by Dick Francini

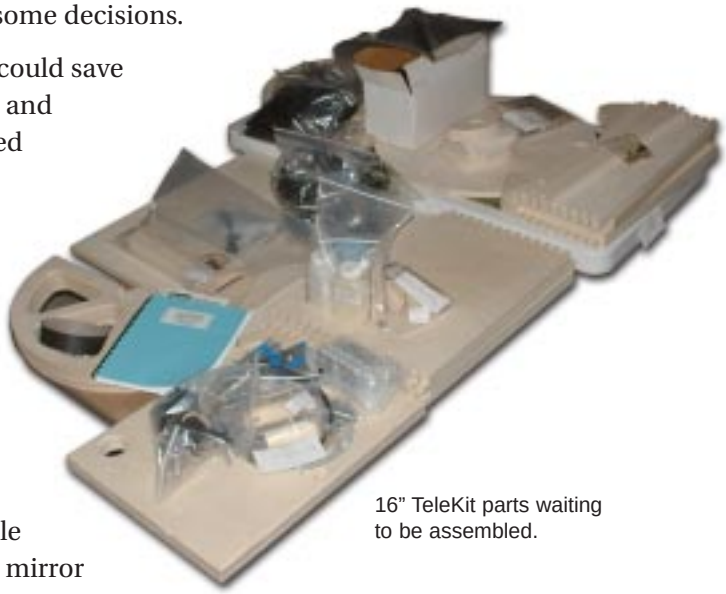
I have been considering getting a larger scope for some time. I have been researching all the possible options open to me: build from scratch, buy a finished scope, or buy a kit. Buying a finished scope would be the easiest option, but also the most expensive. Building from scratch was never really a viable option as I don't have the expertise, nor the woodworking tools needed to make all the precision cuts. It also turns out that this option is not really a way to save money. Apparently buying all the supplies in small quantities takes all the savings out of the equation. Leaning toward the third option, kits, I had seen the fully assembled AstroSystems TeleKits at various Star Parties and was very impressed with both the quality and the design. The company attended the Texas Star Party in 2003 and had a demonstration scope available to inspect and test. This was probably when I decided to go in this direction.

There are so many questions you need to ponder before making a final decision. How large do I go? What is the right focal length? What mirror do I buy? Many are answered by closely defining how you like to observe. Here are the basic criteria I used to make these decisions.

1. Size should be as large as possible, but be something I can handle myself. Weight being the biggest issue.
2. I did not want to be forced to use a large ladder. I am willing to use a small portable ladder.
3. The scope should be solidly built with smooth movements in both azimuth and altitude. This is a constant problem with most low cost dobs.
4. I don't want to spend a fortune.
5. I want a top of the line mirror, but again don't want to spend a ton of money. Although, I do realize that a good mirror will be a bit pricy.

With these criteria defined, it was time to make some decisions.

I started with the money aspect. I determined I could save anywhere from $1000 to $1400 if I bought the kit and assembled it myself. AstroSystems recently started offering the TeleKit fully assembled, it is $1400 more then the kit! It seemed to me that this was a real opportunity to save a good chunk of money without sacrificing the quality of the scope. Decision made, buy the AstroSystems TeleKit and do the assembly and finishing myself, and good luck.



16" TeleKit parts waiting to be assembled.

The next decision was telescope size. It seemed to me that the best method of deciding on size was determining how much weight I could handle by myself. The heaviest piece of the 16" kit is the mirror box. With a thin mirror weighing 25 lb., the mirror box weighs about 80 lbs. I felt that it would be important that I could lift the heaviest piece alone, as I'm often up at the cottage by myself. I devised an experiment to test this. A 50 lb. bag of salt (for the water softener) with two bowling balls on top of it weighs in at about 82 lbs., I was able to lift it and lower it with out too much of a problem. I'm trying to simulate lifting it up onto the deck or

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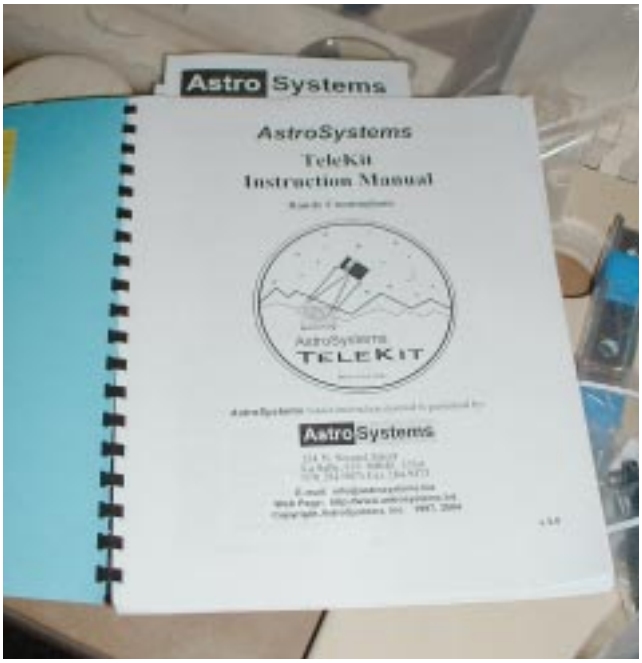
Building a 16" AstroSystems TeleKit - contnued

into the back of the van. The kit does come with wheelbarrow handles and wheels to make movement from one place to another easy. Another decision made: a 16" is workable from a standpoint of weight and will give me four times the light gathering of my current 8" scope. The cost of a 16" mirror is high, but maybe within my budget. The total weight of an 18" scope goes up dramatically as does the cost of the mirror, making this impractical. For example, the 18" mirror is 39% more expensive then the 16".

I have been doing research on mirror producers for a few years. I started when I had my 8" mirror refigured. I chose Pegasus Optics. They have a great reputation for making excellent mirrors. You get documentation of the mirror's figure, and the cost seemed reasonable (sort of in the middle of the pack). Their standard 16" mirror is 1.6" thick and has an f 4.5 focal ratio. Both of these work out well; the 4.5 focal ratio will allow me to keep the ladder short, and the 1.6" thickness saves some weight. It is also important that a thinner mirror is well supported so it does not flex under its own weight. The mirror cell on the 16" TeleKit has 18 points of support, which should be more then enough to keep the mirror stable.

My plan was to have the kit completed about the time the mirror arrived, so I could test the mirror right away. I ordered the TeleKit in late November, and expected to start getting packages in mid January. The timing worked out perfectly, I started to receive boxes in mid January and had the majority of the pieces by late in the month. The truss tubes don't come until you give them exact focal length of the mirror, and the wheelbarrow handles also come at the same time as they fit into the same box. My first impression at seeing at all the parts laid out was, WOW this is going to be a huge job! There are about 420 pieces, give or take a few!



The pieces came well packed and very organized. There was no major damage, only a couple of very slight blemishes. Small pieces come separated in zippered plastic bags and are sorted by which part of the scope they are for. They also include a list, a description, and the part #'s, so you can refer back to the master parts list in the construction manual. Despite this amazing level of organization, it still took the greater part of a day to inventory all the parts and determine what was missing and what was extra! I was only missing a couple of minor parts, which they mailed out in quick order. I did have a few extras (I think), which I set aside in an "extras" pile. I'll find out if they are really extras as I work my way through the construction process.

The construction manual is EXTENSIVE at 121 pages! This is not all construction instructions, as the last part of the book includes observing tips, lists of objects to find, accessories, optical tables, modifications, references, etc. I have to say these are by far the most complete instructions I have ever seen, and just in case they missed anything in the manual, they are available by phone to answer any question you can dream up (even the stupid ones). This book all make assembly look very workable.

I just got notified that my mirror is completed and is ready to go to the coater. This will dramatically increase the pace of construction. I expect to see the mirror delivered around the end of May. I'm hoping to have the scope completed for WOW. If it is cloudy at WOW we will all know who is at fault!

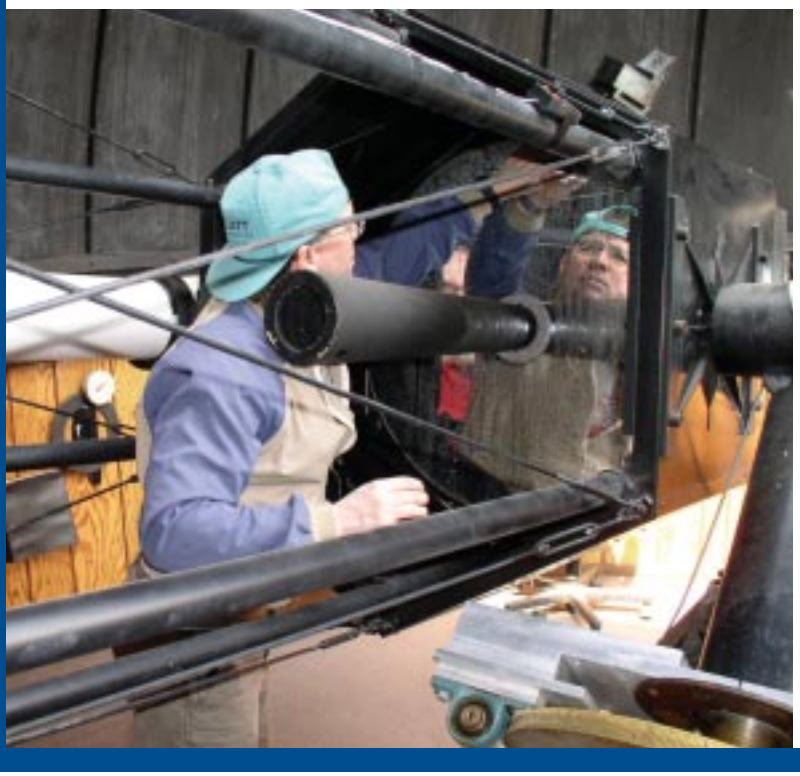
Next month – Construction details!

Parmentier Spring Cleaning

by Steve Mofle

It was a dark and stormy night, as the door slowly…oops, wrong story. It was a beautiful spring day, with promises of dark clear nights full of stars this year as we opened the door to Parmentier Observatory after a long winter of hibernation. There before us was at long last the observatory once again begging to be used, but dag nab it, what a mess! Ah yes, the spring cleaning ritual was once again staring us right in the face as Gary Bier, George McCourt, Don, Katrina and Jacob DeWitt, and Steve, Julie, and Judi Mofle stood at the door. It looked like the dark stormy night had hit, so armed with their ammunition of cleaning supplies, uh wait, who brought the cleaning supplies? I thought you were, no you said you were, well I had cleaning supplies, but they're sitting on the kitchen table. Does Ron have anything here we can use? Well at least we have vacuum cleaners! Fortunately, with Ron's foresight, there were some cleaning supplies to use.

Julie and Katrina set about pulling weeds and resetting the stone circle around the observatory as Gary, Don and George started to clean the upstairs. Steve worked on the main entrance and lobby of Hotel Ron. Of course, there was the invaluable help from our two supervisors, Jacob and Judi. In no time the place was looking great again, but then we turned to the big job. As we pull off the cover off the telescope and gaze and lust at the 30 inch diameter mirror, we all push Gary forward and say, "You lucky guy! You get to clean it!" As Gary sprayed and carefully wiped the winter's worth of grime away, the rest of us stood back and, with careful inspection of Gary's handiwork, told him all the spots he was missing. How helpful of us all, right Gary?



Now for the best of stories… it was a dark and clear night, the sky full of planets, galaxies, nebulae, and of course M13. The faithful observers of NPMAS gather at the (clean) Parmentier Observatory. Hope to see you all out there for our first planned Parm's Night, May 6 and 7!

Astronomy Photo of the Month

Gerry Kocken took this image of the Earth's shadow halfway to totality during the total eclipse of October 2004. He used a Sony Mavica digital camera held to the eyepiece to make the shot.

NPMAS New Members

Jim Elbe
713 Lark St.
Green Bay, WI 54303
920-494-2987
elbe@netnet.net
He has three scopes, one is a 12" dob.

Carrie Kriescher
6211 Kriescher Rd.
Lena WI 54139 920-829-5012
ckriecher@ez-net.com

Merrill Milson
1440 Saint George St
Green Bay WI 54302
920-432-2001
mmilson@new.rr.com

Call for Submissions

Once again we give a call for your input! Have you been out observing lately? Have you bought, won, stolen, or found some neat astronomical goodie? Have you read a good book or installed some cool software? If you have done any of these, or something else astronomy related, let us know! Don't worry about the content length- we'll take anything from a short paragraph to War & Peace. Just jot down your thoughts, ideas, or experiences and send them in! We'll take them in any format - a letter, email, file, picture, or phone conversation. We'll even edit the grammer and spelling for you. How much easier can it get?!

NPMAS Board

Gerry Kocken, ***President***
gerryk@kockenwi.com
(920-336-8594)

Ray Nancoz, ***Vice President***
alcor@doorastronomy.org
(920-746-0428)

Dick Francini, ***Treasurer***
dfrancini@polycello.com
(920-338-8504)

Amy Hannon-Drew, ***Secretary***
momran2@yahoo.com
(920-499-0395)

Board Members:

Tom Cashman
tcash99930@aol.com

Don DeWitt ddewitt@tds.net

Steve and Julie Mofle
moflephoto@gbonline.com

Jim Vareka jbkn@lakefield.net

2005 Committee Chairs

NPMAS Staff:	
AL Awards Coordinator	Tom Cashman
ALCor	Ron Parmentier
Website	Don DeWitt
Night Sky Network	Katrina DeWitt Gerry Kocken Steve Mofle
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Membership	Wayne Kuhn
Properties	Gerry Kocken
Observatory	Gerry Kocken
Public Outreach	Katrina DeWitt
Messier Marathon	Mike Monfils
Astronomy Day	Amy Hannon-Drew Lynn Ward
Club Picnic	Katrina DeWitt
October Field Trip	Katrina DeWitt Ty Westbrook

NPMAS Observing Sites

NPMAS members have access to three observing sites located on private land and belonging to members of our club.

Parmentier Observatory — largest private observatory in WI housing a 30" classical Cassegrain. Members may view through the 30" or bring their own scopes and set up in the field below.
Observatory Number: 920-845-5626
Ron Parmentier Home: 920-336-5878

Crivitz Observing — private residence of Dave & Carol Jorgenson. Located in the Northwoods of Wisconsin on 100 acres of land, this site offers some of the darkest skies around. The field is equipped with electricity and a cabin is available for use. Call ahead to make arrangements.
Dave & Carol Jorgenson Home: 715-757-3296

Cedar Drive Observatory — private residence of Tony Kroes and Tara Adsit. Located in Pulaski on 10 acres of land. Call ahead to make arrangements.
Tony Kroes Home: 920-822-4959

May

NPMAS Meeting

May 11, 2005

Member Speaker

Wayne Kuhn

Astronomical Software

Telescope of the Month: Gerry Kocken, Refractor

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Electronic Submissions may be sent to:
eyepiece@cdo-astro.com
Hardcopy items should be sent to:
The Eyepiece
W2175 Cedar Dr., Pulaski, WI 54162

The Eyepiece
W2175 Cedar Dr.
Pulaski, WI 54162

May 2005

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Last Quarter Moon	**2**	**3** DPAS General Meeting	**4** Aquarid Meteors Peak	**5**	**6** Parmentier Observing Weekend	**7**
8 New Moon	**9**	**10**	**11** Meeting	**12**	**13** NEWSTAR Public Observing, Mosquito Hill Nature Center	**14**
15	**16** First Quarter Moon	**17**	**18** NEWSTAR Monthly Meeting	**19**	**20**	**21**
22	**23** Full Moon	**24** Moon Occults Antares	**25**	**26**	**27**	**28** DPAS – Festival of Nature Star Party, Collins Learning Center 7pm
29 Last Quarter Moon	**30**	**31** European Space Agency (ESA) 30th birthday				