STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

November - December 2001
Volume 10 Number 8

Editor: Jim Frisbie

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- **Minutes of the October Meeting**

- **A Message from the President** by Dan Kmecik
  Dan has provided a look into an award club called The Asteroid Club. He has also included information on how to get started and a list of computer programs to aid in finding elusive asteroids.

- **Science Class about the Sun!** by John Ford
  A grade school class in South Lyon had a special treat recently with an astronomy presentation and demonstration. John had fun and shares his adventure with us.

- **Road Trip - New Hampshire** by Clayton Kessler
  Clay talked about his Road Trip at the last meeting. I found his recap interesting and I thought those who were not at the meeting might also be interested.

- **Challenge of the Month** by John Ford
  For beginners and maybe some of the rest of us, John has issued an observing challenge that one may find interesting. He has selected NGC 404 a galaxy and NGC 7009 a planetary nebula for the rest of us to ferret out.

- **Murphy's Law and A Quest for the Leonids** by Jim Frisbie
  I hope you will enjoy this documentary of what I put myself through to see and photograph the Leonids meteor shower. I did get a few pictures that you may find interesting, I will be passing them around at the next meeting.

- **Agenda for Next Meeting, December 6, 2001**

- **Advertisements from Two Club Sponsors:** Riders Hobby and The Discovery Channel Store

STAR STUFF is a monthly publication of the Ford Amateur Astronomy Club, an affiliate club of the Ford Employee Recreation Association.

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Submissions to STAR STUFF are welcome Please write to the address above or contact the editor:

Jim Frisbie
via tele #: 734-453-1422
or email: w8tu@peoplepc.com

Dead line is the 15th of each month for the following month of publication.

Officers:

President	Dan Kmiecik
Vice President	John Ford
Secretary	Mike Kruskie
Treasurer	Mike Bruno

General Meetings:
The Ford Amateur Astronomy Club holds regular general meeting on the fourth Thursday of each month (except the combined November/December meeting held the first Thursday of December) at 5:00 PM in conference room 1491 in the Ford Credit building in Dearborn, Michigan

Observing:
The Ford Amateur Astronomy Club observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains a permit for after-hours access. Weather permitting, the club observes on Friday nights, Saturday nights, and nights before holidays.

Club Information:
Observing schedules and additional Club information is available via the Ford Intranet: www.be.ford.com/astro/faac.html
or the public Internet: www.boonhill.net/faac.

Club Membership:
Membership in the Ford Amateur Astronomy Club is open to Ford employees and non-employees. Write or call for an application.
Annual - New Member: $25; Renewal: $ 20 (before Jan 31 of each year)
Lifetime - $ 150

Membership includes:
A subscription to the STAR STUFF newsletter and the quarterly newsletter the REFLECTOR published by the Astronomical League.
Discounts on ASTRONOMY and SKY & TELESCOPE magazines, after-hours access to the observing site and discounts at selected area equipment retailers.

Magazine Discounts:
Do not send money to FAAC for SKY & TELESCOPE or ASTRONOMY magazine subscriptions. We have a form that you send in with your subscription directly to the publisher to receive a $10 discount. Pick up a form at the next meeting, or contact a club officer. ☆

Swap & Shop

Wanted: Orange tube C8 OTA. Please contact: Jim Frisbie @ 734-453-1422.

FOR SALE: Vixen/Celestron Polaris Mount with polar scope, dual axis drive set, accessory tray and adjustable wood tripod. Tracks accurately and handles 14# payload. Excellent for small scopes or camera platforms. Asking $325. Contact: Jim Frisbie @ 734-453-1422

FOR SALE: Celestron STARHOPPER 8-inch Dob. Includes Telrad, counterweight system, 25mm SMA eyepiece, collimation fitting & Cheshire eyepiece. Seldom used and in excellent condition. Call Dan Stuart at 248.486.1921.

Letters to the Editor:

I would like to take this opportunity to thank Robert Salhaney and Paul Morzak for their responses to my questions in the last edition of Star Stuff. Your input will help to improve future editions.

The Editor

Each club member is cordially invited to contribute to Star Stuff by providing thoughts, comments and articles for publication. Thanks to all who have contributed to this and previous editions.

The Editor

Minutes of the October 25, 2001
FAAC General Membership Meeting
by Don Klaser

In the absence of President Dan Kmecik, Treasurer Mike Bruno chaired the meeting. The meeting was called to order. Pizza and pop was enjoyed by all.

The round table discussion of observations, new equipment acquisitions, etc. followed. Beginner's Night will be held at Island Lake, Spring Mill Pond observing site this Saturday, October 27, starting at 7:00 pm.

Due to cost cutting measures at Ford, our club Hotline will be discontinued. It would cost the club $25.00 per month to maintain it, so it was felt it was too expensive to continue.

Mike Bruno gave the treasurers report. Jim Frisbie discussed several items that he would like to incorporate into the newsletter.

The main program on a recent African Solar Eclipse was presented.

A Message from the President
by Dan Kmiecik

Asteroid Club

The Asteroid Club is one of the Astronomical League's observing award programs. Its purpose is to encourage amateurs to learn to identify and observe asteroids. While the deep sky objects observable by amateurs remain the same, year after year, the asteroids (like the other planets) are constantly moving against the background of the constellations. By learning to identify asteroids you will greatly enhance your observing skills.

Since asteroids appear as points of light, rather than extended objects, they do not suffer from light pollution as much as deep sky objects. Hence an asteroid-observing program can be carried out quite successfully from urban or suburban locations.

Membership Requirements

The Asteroid Club offers two levels of awards. Regular Membership is achieved by observing 25 asteroids. The Gold Membership is achieved after observing 100 asteroids. Both membership achievements will be awarded a certificate. Only the Gold Membership will be awarded a pin.

Your observations should be recorded in a notebook or on a computer and should include: the location, date and time of the observation, the number and name of the asteroid, and the instrument used. If working visually, each observation should include a sketch showing the position of the asteroid in relation to the nearby stars. Each asteroid must be observed at least twice in different positions, and at the time of the second observation you must verify that the object is no longer in the position where it was observed the first time. If using CCD imaging, it is sufficient to either print the two positions or measure them and simply report the positions of the asteroid according to standard astrometric procedures.

There are numerous computerized planetarium programs that have asteroid features:

- SkyMap (SkyMap Software)
- Guide (Project Pluto);
- MyStars! (Relative Data Products);
- TheSky (Software Bisque);
- Starry Night (Sienna Software);
- Deep Space (D. S. Chandler);
- PC-TCS (D. Harvey);
- Earth Centered Universe (Nova Astronomics);
- MegaStar V4.x (E.L.B. Software);
- xephem (E. Downey);
- Home Planet (J. Walker)
- Dance of the Planets (ARC)
- SkyChart 2000.0 (Southern Stars Software)
- Voyager II (Carina Software)
- SkyTools (CapellaSoft)
- Autostar (Meade Instruments)

You can even go to the Minor Planet Center's Minor Planet Ephemeris Service (cfa-www.harvard.edu/iau/MPEph/MPEph.html) and download a file for any asteroid you may may wish to display on any of these programs and get a file back that allows to you to track the asteroid real time and print your own finder charts.

After you have completed the requirements for either the Regular or Gold Membership, give a copy of your logs to the President of the FAAC. The president will

have the logs reviewed and write the necessary note to the Astronomical League. You will be awarded your certificate at a general meeting once the club has received it. **Have fun and good hunting!**

Science class about the Sun!
by John Ford

My daughter is in 5th grade and she has let it slip a few times during science class that her dad has a telescope. Consequently, my fate was sealed...the teacher grabbed me the next time she saw me and asked if I would come in and teach some astronomy to the kids followed by an observing session. The topic at school lately is the Sun, so there was an opportunity to do an observing session provided the Michigan Nebula cooperated.

A date was set and the sky was clear so we began the session with an introduction to astronomy as a hobby and about two minutes on what can be seen in the sky this month. We followed up by talking about the sun as a star and the fact that the sun can hurt your eyes if you look at it. We discussed solar observing safety and solar filters. I had my ShorTube80 and a solar filter to demonstrate proper filtering as well as projection viewing.

I captured their interest and introduced the concept of light-speed by saying that Capella was my favorite star because it was about 41 light-years away and that the light from it we see today actually left the star on the day I was born (close enough for a cigar).
Next we discussed the temperature of stars, since the kids started with the questions about star color. Fortunately, I remembered enough of my color/temperature relationships to be able to talk about it. We spent some time on the size of the Sun and the planets, which led to a discussion on eclipses.
Finally, we discussed sunspots, and discussed how astronomers might calculate the period during which the sun rotates on its axis. We closed the sunspot discussion by introducing the terms Umbra, Pemumbra, and Granules as depicted on a current SOHO slide.

Next was the main attraction...the scope session. The kids were doing some sun-dial work outside that day so they took dial readings while I set up my TMB105 on the Losmandy mount. Using the equatorial mount was a good choice since there was little time to constantly aim the scope with an alt-az mount.

I used the Baader film filter with a Nagler 12mm eyepiece. The view was very good and there were tons of sunspots. I asked each student to count sunspots, which forced them to train their eye and truly observe. Most of them ended up with 20-35 sunspots, and some of them noticed the earth's atmospheric ripple on the sun's limbs.

I was amazed at two things. First, the kids asked so many questions in class that there was room-full of raised hands after I answered each question. (I went overtime on my class because of the questions!) Second, the students were very impressed with the view of the sun in real-time. They couldn't believe what they were seeing.

The experience was very rewarding and took about 2 hrs total, and I had prepared 5-6 slides, but didn't have time to use them all. All the kids wrote me notes afterwards, and I was amused to see the comments. All we very pleased with their experience, and one student even stated that it was the first time that they had enjoyed science class.

I did it in order to get involve in the school a bit, but I could see a spark in two or three of the students, who may become astronomers later on. I'd recommend the experience whole-heartedly to any of you who can spare the time.

Road Trip – New Hampshire
By Clayton Kessler

So what does a trip to New Hampshire have to do with astronomy? I didn't think the trip would have any connection at all unless we had an opportunity to use the binoculars that we packed. Let me begin at the beginning.
My brother was getting married so Jan and I took the time to spend a week on the New England coast as nether of us had been there before. We found a motel in Dover New Hampshire because it was close to my brothers' house and not too far from the wedding site in Massachusetts. We had a great time eating lots of good seafood, visiting historic sites and shopping. So far, no astronomy.....
A couple of days before we left I was thinking that there was something familiar about Dover..... something I saw in a telescope magazine. A quick search of the internet turned up "Rivers Camera". Now I remembered! They are a Meade, Celestron and Televue dealer and they advertise in Sky and Tel and Astronomy. Well this could be interesting.
We arrived at the Motel about noon after getting up a 3 AM for our flight, working our way to the rental car place and driving up from Boston. The Day's Inn was right in the center of Dover's historic downtown area. After my nap I decided to walk out to the street and see what I could see. I was thinking to myself, "I wonder how hard it will be to find this River's Camera place?" As I walked down the driveway my eye was drawn to a yellow sign across the street. "Rivers Camera" – wow how lucky is this?

I wandered over and noted that the front windows were full of telescopes! I went in and started to browse. Now I could have spent my entire week in here with no problem. There were a lot of interesting scopes to inspect. I got my first "in person" look at the Orion Starmax 102 Mak, the Meade ETX105 and the "Konus" series of Synta made refractors. These are different from the "Skywatcher" telescopes in the mount tripods. These CG4 and CG5 style mounts use a tubular stainless tripod similar to the Meade SCT Field Tripod. The legs are somewhat smaller than the Meade tripod but they support a smaller mount. They appeared to be much steadier than the aluminum tripod legs that have become so common. They also had a Pocono "German Equatorial Mount" and an Apogee "Multi Function Fork Mount". These two are commonly used to mount a small scope or as an equatorial camera platform. I ended up having many interesting conversations with owner Roger Rivers.

Roger mentioned that Saturday morning was a good time to stop by as some of the local astronomers come in to "shoot the breeze". I stopped by and spent a pleasant couple of hours talking with John Lanoue who was setting up to try astrophotography and to Kirk Rogers and Alan Jordan from the Astronomical Society of Northern New England. These two astrophotographers shared their knowledge and experience and graciously invited me to their new club observatory on Sunday for solar observing. Unfortunately I had to attend a wedding on Sunday and could not attend L . I did check out the observatory on the internet and it looked like a very nice setup. You can check it out here: http://www.asnne.org/

I was sorely tempted to purchase a used TV85 that looked to be in new condition ($1600.00 a very good price) but I restrained myself. I did pick up a nice pair of 10X50 binoculars and a good load of film for astrophotography. I got some Kodak Royal Gold 200 for hypering and a couple of rolls each of Kodak Royal Gold 1000 and Fuji Super HQ 1600. The latter two films will be used for meteor photography during the Leonids if the weather is good. Rivers Camera carries a good supply of both new and used astronomical equipment. He has lots of Meade, Celestron and especially Televue Eyepieces and even some Losmandy accessories. Roger is happy to do mail order and they can be reached at 1-800-245-7963 or on their web site at: http://www.riverscamera.com/

I had a very nice time, both in New England and at Rivers Camera. Roger and the local astronomers made me feel welcome and I enjoyed some very nice conversations. If you are in the area I recommend a side trip to River's and I am going to plan my next visit to my brothers place to coincide with a meeting of the Astronomical Society of Northern New England!

Challenge Objects of the Month
by John Ford

I'm going to try and challenge the beginners to find and observe an object or two each month that is visible with 4-6 inch scopes, but that may require a bit of eye training to be able to find. Locate them on a star chart, and develop your own method of finding the object. If you like this stuff, let me know, and we'll make a monthly installment.

So here we go.

Challenge Object #1 - NGC 404 a galaxy in Andromeda. In the constellation Andromeda, find the bright star Mirach, also known as Beta Andromeda, or 43 Andromeda. As you look at the star, you should notice a small oval smudge right next to it, quite probably in the same field of view. You might have to stare for a while until your eye gets accustomed to the view. Try averted vision to pick it up.

Challenge Object #2 - NGC 7009 a planetary nebula, "The Saturn Nebula", in Aquarius. This one is a bit difficult to find, but not impossible. Find the constellation Capricornus and then find the bright star Theta Capricornus or 23 Capricornus. Looking up vertically from 23 Cap, you should see another naked-eye star, 13 Aquarius. Move over to the right a bit. About two-thirds of the way to the next field star on the right of 13 Aqu, there should be a "star" that you can't quite focus. If you increase magnification, you'll find that it will start looking more and more like a tiny Saturn, hence the name.

Have fun!

Murphy's Law and A Quest for the Leonids
by Jim Frisbie

The Leonids hype was everywhere during the week leading up to the forecasted meteor storm. CNN, the Weather Channel, Local TV and even the FAAC E-Mail list was buzzing with talk of Leonids activity..."The best display in 30+ Years!", " Don't miss it!", "You will have to wait another 30 years to see one like this!" John Kirchoff even talked about traveling up to 10 hours by car to find clear skies. In short, I was hooked. I started watching the Weather Channel at every opportunity to nail down my plans on where to observe the storm. After reading about how to take meteor pictures, I had to find ball and socket mounts to support three single lens reflex cameras that would be mounted on my camera platform. This allowed me to point cameras at the radiant, and 25 degrees each side of the radiant. The camera platform would then be mounted on my Great

Polaris mount so the motor drive would let me take pictures of meteor flashes on a background of pin point stars. On Friday two days before the forecasted peak, the weather looked like it was going to cooperate. I was regularly checking cloud cover and transparency forecasts and my only concern was ground fog. Especially since I had decided to join John Kirchhoff and a group of amateur astronomers from the Jackson club down at Lake Hudson near the water.

On Saturday night after packing the truck with gear, since I was going to be awake all night, I decided to catch a few winks between 7 and 10:30pm. That way, I could get to Lake Hudson about midnight, set up, do some deep sky imaging, and be ready for the Leonids storm that was to peak at 5:00am. By now I was pretty worked up and had trouble getting to sleep. At 8:30pm while looking out the window (instead of sleeping) I noticed fog starting to roll-in. Now I was really worked up! At 9:30 pm I gave up trying to sleep, got dressed and headed for Lake Hudson knowing the fog would be sporadic and clear up by Ann Arbor, Chelsea, Manchester, Adrian, Lake Hudson....NOT !!! The fog was so heavy, I missed the entrance to Lake Hudson State Park on my first pass and found it on the second pass only by accident. While traveling through the park, I noticed a few deer camps but no astronomers could be found.

It is now midnight and I was 2 hours from home, what should I do??? I was not ready to give up and go home. My weather research showed the Ohio forecast was clear on Sunday morning. I was only a few miles from the Ohio border so I headed south, took US20 to US23 to I75... still in the fog. When I got south of Toledo, I said to myself, "If it doesn't clear up by Bowling Green, I am going to turn around and go home empty handed." Well, 10 miles north of BGSU, the fog cleared and the sky broke open with Jupiter shining like a flash light in the sky. There were still a few patches of ground fog around so I headed a little further south on I75. In Findlay I turned off on US15 and headed south east toward Columbus a few miles until the all sky glow disappeared. At that point I pulled off onto a side road in into a corn field a mile or so from anything. The sky was dark and Orion was AWSOME! The surrounding stars were so bright, they tried to washout the normal "K" shaped Orion asterism. Meteors were flashing all around me at a rate of 1 per minute. It was a perfect place to view the Leonids...NOT!!! After about 20 minutes of viewing, I noticed a farm house about a mile away was disappearing in the fog. By now it was 2:30 am and I was afraid that the fog would overtake the sky before the peak of the Leonids storm at 5:00am.

After seeing 25 meteors I was really hooked. I got back in my car and headed to the clear spot I passed through north of BGSU some 30 miles away. The only problem was that when I got there at 3:30 am, the fog had swallowed up the sky. I thought to myself, there was no way I was going home empty handed. So, I headed south...again! This time to find clear skies I passed Findlay and pulled off I75 about 20 miles north of Lima. When the sky glow to disappeared, I pulled onto a dirt road and noticed 2 guys with a lawn chair and tripod setting up to do the same thing I was trying to do. They graciously accepted my self invitation to join them. It turns out they had driven down from Perrysburg, Ohio in search of clear skies.

By now it was 4:30am and although I had planned to be sitting in a lawn chair clicking pictures, I still had to set up the tripod, GP mount, and camera platform. While preparing the gear, I did manage to see several meteors that flashed to the north, south and west. Finally by a little after 5:00am the dew heater was in place and I was ready to take pictures. Now if you think Murphy hadn't spent enough time helping me, that is when Murphy kicked it into second gear. In addition to the normal problems associated with trying to photograph meteors, e.g. they are fast moving, hide from camera field of view, show up in unpredictable locations all over the sky, I managed to be plagued by a few other little problems. One of the cable releases started acting up and would not hold a shutter open. I finally got that straightened around and started cycling the cameras every 10 minutes. That is when the frequency of passing cars started to pick up between 5 and 6 am with people headed to work. Although the cars were quite a distance away, each time they went by, I had to either close shutters or stand in front of the camera platform to shield the car lights from getting into the lenses. About 30 minutes passed before I noticed that the camera platform was not tracking. Apparently the motor drive was on but I had forgotten to lock up the drive clutch. With all the humidity in the air, my dew heater could not keep up and the last picture or two on each of the three rolls was fogged over with dew. I found out later that although I had aimed the cameras carefully to pick up as much of the sky as possible, in the process of installing the dew heater on camera #3, I pulled it off aim, so camera #2 and camera #3 were photographing the same area of the sky at the same time. Also, between decreasing transparency and approaching twilight, picture taking after 6 am was a bust. Although I used ISO800 film, ISO3200 would have been much better. I made the mistake of using "#&*@" film. I spent hours processing images trying to come up with some decent pictures. If I ever buy another roll of "#&*@" film, please have someone put me out of my misery.

All things considered the 2001 Leonids meteor show was nothing short of spectacular. The meteors were flashing all over the sky. They didn't flash until they hit the atmosphere so flashes were seen in every direction. North, south, east, west and even overhead. I saw as many as five meteors come out of the radiant at one time. One meteor left a contrail that lasted 3 to 4

minutes after the light was gone. My tally although not very scientific was between 150 to 200 meteors. That was more than I have seen in my lifetime. As I was putting the gear away and packing up for the trip home, I said to myself, "Well Mr. Murphy in spite of all your help, the show was AWSOME and worth the effort, even if none of the pictures turn out!"

FAAC
December 6, 2001
General Membership Meeting
Agenda

- Circulate Sign-In Sheet
- Pizza and Pop
- Round Table Discussion
- Minutes of October Meeting
- Treasurers Report
- Business Items
  . Old Business
  . New Business
- Main Program
  . **Whats New in Astronomy Equipment**
  John Kirchhoff, Mgr. Riders-Livonia

A Call for Papers! Star Stuff is looking for FAAC Member written articles on Double Star Observing, Comet Astrophotography, and Telescope Collimation for the January edition. Please submit articles by 15 Jan 2002 to Jim Frisbie, email: w8tu@peoplepc.com

Astronomical Calendar: December 2001

All times are Eastern Standard Time or Eastern Daylight Saving Time, whichever applies.

December 2	Jupiter 5° lower left of Moon at 8 pm. Gap narrows during night. By dawn of Dec 3, Moon has drifted to within 1.2° of Jupiter.
December 3	Saturn appears in opposite direction from Sun and is visible all night long. Moon near Gemini Twins (8 pm to dawn)
December 5	Moon near Regulus (11 pm to dawn)
December 7	Last Quarter 2:52 pm
December 10	Moon near Spica (3:30 am to dawn)
December 13	Geminid Meteor Shower peak (dawn)
December 14	New Moon 3:47 pm Annular Solar Eclipse visible mostly over Pacific Ocean. Most of USA will see only partial phases. Eclipse in progress at 4:54 pm sunset. Use proper solar filters or methods to view eclipse safely.
December 20	Moon near Mars (dusk to 10 pm)
December 21	Solstice 2:21 pm
December 22	First Quarter 3:56 pm
December 27	Moon-Saturn-Aldebaran triangle at dusk. During course of night, Moon will drift toward Saturn and cover it early next morning.
December 28	Moon occults Saturn at 3:58 am. Occultation is visible in all of USA except Alaska and northeastern New England. Use binoculars or a telescope to observe the 2-minute event.
December 29	Jupiter 8° lower left of Moon at 6 pm. Gap narrows during the night. By dawn of Dec 30, Moon has drifted to 2° lower right of Jupiter.
December 30	Full Moon 5:40 am Moon near Gemini Twins all night long.
December 31	Jupiter appears in opposite direction from Sun and is visible all night long.

This information was obtained from the Henry J. Buhl, Jr. Planetarium in Pittsburg, PA.

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