The Prairie Astronomer

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COMPUTERS AND AMATEUR ASTRONOMY

Part II of this series will deal more specifically with some of the things you can do with micros in amateur astronomy. Also what it takes in the way of features and components in a micro system to give you those abilities.

Bear in mind that even as I go farther into the series I'll strive to keep all of the information on a level that will appeal (or hopefully so) to the mass. Now for those who are more technically inclined and wish discussion on micros in astronomy on a more advanced level you have two choices. 1) You can discuss your topics with me personally. or 2) wait until Jan or Feb '83 when I start another series of articles dealing with more advanced topics in greater detail.

Now without further ado ('ado', whats that mean) lets dig in.

Three of the features we'll touch on in this article are 3 of the more important ones for amateur astronomy. Understand, there are countless other features available on micros but we will keep this series targeted to astronomy. The 3 are:

1. Data manipulation 2. Graphics display 3. Telecommunication.

Data manipulation-This in the truest sense is what a computer does all the time. Whether your answers come back in text form, graphic form, or a form that controls mechanical devices, they all require the manipulating of data. But I would like to discuss one part of the data manipulation that can be very important to astronomers. That is record keeping, or computerized filing. Most astronomers conduct observing sessions. During those sessions he or she will generally take down a considerable amount of info on each object viewed. Generally at the least this will consist of:

1.date 2.time 3.viewing conditions 4.telescope and power 5.constellation or area of the sky 6.coordinates 7.specific comments on the object Then add all the additional info you need to keep if you are doing a specific kind of study, that is, photography, spectrometry etc. Now multiply the above by the number of objects you observe each nite, multiply those by the number of nites you observe per week, month, or year and you can see you will generate a lot of dew stained warped 3x5 cards or yellow ruled paper, let me hear an amen on that.

Now enter the micro. With it you can accomplish 3 basic things with record handling 1.Speed of information retrievial. After 6 months or a year you've got all of this info in the computer. Think of it, in seconds you can go through an entire years worth of observing sessions, request any number of different answers on your observing sessions. An example, you can request the computer give you a list

October Meeting

The October meeting of the Prairie Astronomy Club will be held on the 26th day of October at 7:30 pm in the Hyde Observatory Auditorium.

Nominations for club officers remain open for the first part of the business meeting and then will close for voting in the latter part of the meeting.

This is an important part of our club function so please plan to attend. As we go to press no progam announcement has been made to the editor, but I'm sure John 'Speelburg' Lortz will come through.

PRESIDENT'S MESSAGE...

With this issue comes a new editor and producer of the newsletter--me. Of course if you don't like my editing you can always take it up with the president.

At this time I would like to say thanks to Lee Thomas who for a number of years (7-8 I believe) has edited and produced this newsletter. He has developed a high quality newsletter that has drawn praise and clones from a number of places. For all of those years Lee has handled every phase of the newsletter and delivered an informative newsletter on time everytime. Lee had performed these services while General Manager at one of the city's major radio stations and being a professional myself I can appreciate his ability to juggle time lines. Again thanks to Lee who although gone as editor will remain a very active member.

This months star party drew the usual crowd of dedicated observers. It was a good nite for observing,exchanging stories and watching Rick Johnson wound and maim himself trying to manuver around various parts of telescope mounts. There also seemed to be a race between several of us on NGC objects. There's no need to say who is the quickest with the scope, but Knisely had to keep cooling down Johnson's mount with ice.

Well, this meeting will consist amoung other topics of voting for club officers so I hope you will take time out and attend this months meeting to vote.
See you at the meeting.

Russ Genzmer

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consisting of all the double stars you observed in Andromedia during Oct. 82 or a list of the NGC galaxies greater than 8th mag. in Leo. 2.Report generation. At the same time it is searching and sorting as per your request it can generate the answers in neatly printed reports if your system has a printer. 3.Physical space saving. The ability to consolidate all those hundreds of pieces of paper laying around your room under your desk, bed, couch etc. onto a cassette tape or floppy diskette.

Graphic display- Right now this is the single biggest selling point for micros today. Whether it be business, science & industry or education. If the micro can't generate graphics you've got a high powered race car running on regular gas. There are two types of graphics in computers that produce graphics, low resolution and high resolution. While several years ago low resolution was the accepted standard now hi resolution is a must. Hi resolution means more definition for your pictures & graphs. Lo resolution is what is found on most of the video games today. Big blocks make up the playing figures, balls etc. Now a big blocky representation of the planet Jupiter and its big blocky moons or a blocky representation of a spirial galaxy with its blocky defined dust lanes is at best disenchanting, and you certainly didn't buy a computer to disenchant you. So look for a micro that has good hi resolution graphics. At the least the hi resolution specification for the computer should be 200-300 by 200-300 dot screen. Also color in your graphs & pictures is important. Such as plotting orbits of a multi moon planetary system. The plots of the 4 major moons of Jupiter are easier to interpret if all 4 orbit lines are different colors. Also pictorially representing the saturian ring system in hi resolution color gives a 1-2 punch of hi detail with color contrast to show the various ring systems.

Don't be scared off by the fact you may be a beginner in micros and yet I'm discussing advanced computer generated graphics. There are a number of programs on the market that help & aid the user in generating graphics with his or her computer. These programs give the user with no programming experiance the ability to generate tremendous graphics that several years ago could be accomplished only by advanced programmers. So remember look for a micro with good hi resolution color graphics and preferably with some existing program aids to help you generate the graphics.

Telecommunications-This sounds like a very technical term and one you may think won't apply to you until you become more of an advanced computer user. Quite on the contrary. you can start using telecommunications with your computer from day 1. First, what is telecommunications? It is giving your computer the ability to talk to other computers via the phone lines. These phone lines are the existing lines you have run in your home now to handle your phone system. Nothing new needs to be added or changed to you phone system. But do understand that the computer system you may look at needs to have the ability to have a 'modem' attached to it or one already built in. A modem is the computers word for the device that interfaces the computer to the phone line.

So now that you've got a modem attached to your computer what can you do? With phone line access both to and from your computer you now open up a whole new world for you. because now you can talk to computers, both of the same type as yours as well as the big ones (IBM et al). There are a number of 'public access' computers located throughout the country now. They are really like public librarys. They have hundreds of programs you can run while you are connected to them without having to go out and actually buy the programs. If you have limited storage space on your system you can store your programs and data files on their larger capacity machines. Thus saving you the expense of having to purchase a larger storage device for your computer. Be aware though when you connect up to these 'Public Access' computers there are connect time charges that are assessed you. Also if you have a friend located in another part of the country that is doing the same research as you in some observing program you can share data with him quite easily. Merely by dialing him up he can download, (transfer his data down the phone line to your computer) his programs or data to you in seconds versus the time it would take to mail it to you. This type of transfer is sometimes refered to as 'electronic mail'

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today.

You don't even need to be at your computer when this type of transfer is done. You just need to leave your computer on and attached to your phone line. Then while you're at Mauna Key observatory in Hawaii observing, your friend can handle the transfer all from his location. Then when you get home a week later there sits your computer, fully loaded with the data you needed from him.

Now lets recap what we've talked about and how it applies to some features we should look for in a micro system.

There are two types of data storage mediums. After all we have to have somewhere to store the data after we turn the computer off each nite. The least expensive is the cassette tape format. They are good mediums for the first time user and are easier to obtain with the price range in the 30 to $70 range. But they are slow in loading programs and data and in most instances make random retrieval of data all but impossible. The other type of data storage is disk drive. These are much more expensive. $200-600 dollars.
But they offer fast access (several seconds versus several minutes for tape format), random or sequential retrievial of data and many other speed features.

Look for good hi resolution graphics in your computer. 200-300 by 200-300 dot screen is a good average display. Make sure it has color also, preferably 8 to 16 different colors.

If telecommunications is in your plans make sure it has the ability for a modem to be connected to it. Either as a standard built in feature or option add-on. If not make sure it has a RS-232 serial input/output port available for it. With this device you have the ability to connect a modem to it and then connect this to your computer.

That does it for this issue. True this one like the first one was fairly general in its scope. Next issue we will dig into specific micro computers available to the amateur, their specifications, weak points, and strong points.

Till next issue remember if things don't seem to compute for you rumor has it the late Spock used to count with his fingers.

Russ Genzmer

Observing Chairman's Report:

Start your viewing with the beautiful globular cluster M15, located four degrees Northwest of Epsilon Pegasi. It is bright and resolves right to the center in my eight inch. Also in Pegasus is the small galaxy NGC 7479, a faint barred spiral located three degrees south of Alpha Pegasi. It appears as a rectangular patch with a slightly brighter center in my eight inch.

Up in Cygnus is the faint galaxy NGC-6946. Located about two degrees southwest of Eta Cephei. It is rather faint and may not be visible in telescopes smaller than six inches. It is also a spiral galaxy and shows interesting structure in a twelve inch. Less than a degree northwest of this galaxy is an interesting open cluster NGC-6939 which I named the 'Seacrest Field' cluster. At low power it looks like M11 in a four inch, but at high power, it looks like a set of stadium lights. It is best seen using telescopes larger than six inches and moderate or high power.

In Andromeda look for NGC-7662, a small but bright planetary nebula located two degrees west and 3/4 degree south of iota Andromedae. At low power, it looks like a fuzzy bluish-green star, and at high power it shows a tiny stellar core with two fainter concentric shells, one being slightly irregular in form.

Most observers have seen the two satellite galaxies M32 and M110 near the Great Andromeda Galaxy. But there are other companions to M31 located some distance north of the big galaxy. NGC-185 is about

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a degree west of Omicron Cassiopeia and shows as a faint,diffuse patch of light in my eight inch.

As a final challenge for those with moderate to large telescopes, try the Arrowhead cluster NGC-7510. It is located about a degree and one half north of the star 2 Cassiopeia, and appears as a small wedge of stars in a rich star background. The area around it bears some sweeping at low power as the Milky Way is rich in this region.

David Knisely

If you missed our last meeting here is the list of nominees for club offices for the year 1983.

President--Russ Genzmer (incumbent)

Vice-president--Bev Hetzel

Secretary--Merton Sprengel (incumbent)

Tresurer--Lee Thomas (incumbent)

Program Chairman--John Lortz (incumbent) James Reimnitz

Observing Chairman--Appointed.
Please let me know if I have forgotten anyone as I thought there were two offices that had two or more running for it. Great President are'nt I, guess I need a secretary.

Also the interest sheets that were handed out earlier this year were summarized and listed below. This list best covers most of what the members would like to get out of the club in the way of programs or lectures to aid them in amateur astronomy:

1.Establishing worthwhile observing programs
2.Electronics and computers.
3.Technical discussion on distance of objects (how determined),operation of Black Holes.
4.Optics, eyepieces, and mounts.
5.General study constellations and planets.
6.Telescope building.
7.More efficient use of the telescope in locating objects.
8.Occulation and grazing observing.

As was mentioned at the last meeting, we now need people who can help the members in the above areas by giving programs or helping locate people to give programs in those areas. Please contact the program chairman if interested.

Also I brought up the idea of an annual award (small plaque) awarded each year to the individual who contributes to the promotion of amateur astronomy to the club and its members, to the general public, and to the amateur society on a whole. More discussion is planned for future meetings on this.