The Prairie Astronomer

Volume 23, number 11
November 30th, 1982

11-82

COMPUTERS AND AMATEUR ASTRONOMY

In part III of Computers in Astronomy we'll take a look at some specific computer systems. Commonly referred to as 'Hardware'.

If prices over the last several years kept you from considering computerizing your astronomical sessions then you should take another hard look at the market. Low cost computing has arrived. There are a number of under $1000 systems out there. They aren't toys either. While a major use of them is to play games, store mothers receipts and other general home entertainment uses, they are full fledged computers. Low price doesn't have to mean low quality either. In the last several years alone the price of memory chips dropped from several hundred dollars to several dollars. Couple this with a wide range of accessories at low cost and you can configure yourself a very neat, economical computing package.

True these under $1000 dollar systems lack the capabilities and sophistication of the $3000 to $5000 micro computers. But they will keep astronomical records, solve complex problems, generate surprising graphics, and handle basic home duties that would make it more easy for your spouse or parents to accept and use. This is an important point, as the above parties generally play a major role in monetary expenditures around the house.

Low cost and extensive accessories have truly ushered in the era of COMPUTERS IN AMATEUR ASTRONOMY.

In this article and the next we'll talk about several hardware systems in several price ranges. Bear in mind the scope of this article does not lend itself to a detailed look at each micro. But a general overview of each one. Intended to whet your appetite, wake up your interest, and if your interest is great enough we can talk more in depth on a personal basis.

One of the under $1000 micros that really caught my attention is the Sinclair ZX Spectrum. While Sinclair is known over here with its Sinclair ZX 80 and ZX 81 ultra-economical micros the Spectrum is little heard of. Primiarily introduced in the UK.

The Spectrum comes as a basic 16K memory computer with add-on memory to bring it up to 48K. It is

November Meeting....

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

Discussion on club dues will be one main topic as Sky & Telescope has announced an increase in their subscription rates which will in turn affect our club dues. Several choices are open to us in regard to the structure of our club dues so if you want a voice in this matter please attend.

PRESIDENT'S MESSAGE...

With this meeting come the installation of the new club officers for the upcoming year. It will probably come as no suprise that, except for Vice President most of the officers are returning incumbents. So congratulations to the following.

Russ Genzmer-------President
Bev Hetzel---------Vice-President
Merton Sprengel----Secretary
Lee Thomas---------Tresurer
John Lortz---------Program Chairman
Jim Reimnitz-------Assistant Program Chairman (by Presidential appointment)
David Knisely--Observing Chairman

The upcoming year brings numerous things to spur interest in both the general public as well as the members themselves. With star parties, National Astronomy Day,League Conventions, Public nite at Hyde we find many things that should keep us all in tune and excited with amateur astronomy. I'm concerned with the number of our members. Although we have gained new members through the year we have also lost old ones. If you feel the club is not suiting your needs or heading in a direction you don't approve of then make it known to the club and its officers. Lets make 1983 the year of "Participating and Speaking up" as well as "Attending".

From last newsletter you all saw the various topics that were brought up by our club members for future program material. If any of you out there has an area of expertise that covers one of these topics please contact our Program Chairman to arrange for a program. But also remember we don't need to wait for a special program. If you have a question or concern about astronomy, bring it up during our general sessions. We will always take the time to discuss it.

See you at the meeting, please see the meeting notice and attend, as we have several important topics to discuss. Also note my change of address for those of you wishing to submit articles to the newsletter.

Russ Genzmer

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, and is free to all club members. Yearly subscription without club membership is $6.00. Regular membership, $16.00. Family membership is $18.00. Memberships include 1-year subscription to Sky & Telescope, the club newsletter, and 4 quarterly issues of The Reflector, Journal of the Astronomical league. Address correspondence and membership renewals to: Prairie Astronomy Club, Inc., P.O. Box 80553, Lincoln Ne. 68501. address all articles for inclusion in the newsletter to Russ Genzmer 5301 South 30th. Lincoln Ne. 68516. All articles must be received 10 working days before the meeting date.

Computers (Cont. from page 1)
small, 8.5" x 5". It plugs into any black and white or color TV. True it has only a 40 key keyboard but the ROM gives each key really 6 different functions. It has color graphics with 8 different colors. The resolution of its graphics is quite good for the price, 256 x 192 dot. Right now the only storage medium is cassette tape. But get this, they plan to release a 3.5" microdisk drive holding 100K of storage and the cost---$95.00. It has the ability for telecommunication and printer hookup. For the production of celestial graphics it has built in graphics commands of DRAW, CIRCLE, PLOT, POINT with these types of graphics commands built in graphics generation becomes easy.

Sinclair is planning on releasing lots of software for it. But as amateur astronomers go you will probably do a majority of the programming yourself. For this the Sinclair has a powerful version of Microsoft Basic. Microsoft is renowned for its version of the Basic language. This should give you good flexibility in your programming.

So what's the catch you ask? Well this computer looks rugged enough for the astronomer who might take it to the observing site (providing he has electricity). It only has a 40 key keyboard as mentioned previously. This may hender its use as a word processor if the need would ever arise. It also has a calculator style keyboard much like the old (UGH) Texas Instuments 99/4 computer. This might not enhance any of those late nite programming sessions where you not only have to concentrate on your programming but also on hitting the keys. It only displays 32 columns across the screen but it can display upper and lower case.

The price on the 16K version is $235.00 and the 48K goes for $330.00. Look to spend $400 to 550 for a typical system

The VIC 20 is a mystery to me. How can they make it so cheap, excuse me Ron, so inexpensive? It's really a cute one too. The keyboard houses the computer itself too, except for accessories like tape or disk drives and printer etc. It has a full size typewriter style keyboard that makes word processing as well as standard progamming and data entry easy. It also has 4 programmable function keys which for the programmers out there can save on program space and general program run time effeciency. The system has some very pleasing color graphics but to produce them you have to go through some tedious programming using print and poke statements to generate it. But as I said in previous articles,look for computers that have numerous programming aids. The VIC 20 has one for graphics generation. It's called Super Expander and makes graphics much easier to produce on the VIC.

The VIC comes standard with 5K of memory and can be expanded to 32K. It can have a disk drive attached with 170,000 characters of storage space(that will hold a few observing sessions.) It also has a modem available for telecommunications, which is quite reasonably priced. It also has a very good user reference manual with it that goes into depth on the processor itself. VIC is part of Commodore which has been around for awhile. most of the software that is on their bigger computers which can be run on the VIC will be transported to it in short time so you should have quite a library of software.

So,you ask is there any drawback to this system. Yes. It can be a touchy job to get a crisp, clear picture up on the screen of your TV right off the bat. You may have to do some wiggling, restringing cable or adjustment to your set to get pleasing results. The colors may not be true either. This can be remedied by adjusting the set. The wife or parent will then ask that it be readjusted for normal viewing. I ask you, is there anything on TV that can be called 'normal viewing'? Also I want to see what happens after a year of usage. After the customer has attached 3 to 4 accessory items onto the VIC and let it run for seveal hours (sometimes my Apple runs for 4 to 5 days without shutoff) what are the results. To me the quality of the power supply is often neglected and yet is of great importance once you start adding devices to your computer and run it for long periods

Computers (Cont. from page 3)

of time. Also the video display only displays 22 characters across the screen, this can be bothersome when developing large or complex programs. Base price is in the $150 to 250 range but expect to spend $400 to 700 on a typical system.

All in all the VIC 20 is a very very good computer for the money and one I would recommend amateur astronomers look into very seriously.

That does it for this issue. True I have left out countless other very good small computers under $1000 but space is limited. Possibly in the future I will devote a half page "Computer Corner" to touch on a majority of the rest as well as touch on many other technical aspects.

Next issue we'll take a look at the IBM PC and the Apple II.

Russ Genzmer

4 SALE

ASTROSCAN 2001 TELESCOPE

3 eye pieces, Barlow lens, filter asking $200.00 Contact Carroll Moore at 466-1886 or at the meeting.

Observing Chairman's Report....

Star clusters and galaxies tend to dominate the late Autumn sky. Look about one degree south and a bit west of 12 Persei for NGC 1023, a faint galaxy that should be an easy target for a six inch. In a ten inch, it looks a bit like M31 in binoculars. Nearby (2 1/2 degrees north of 12 Persei) is a nice cluster M34. It looks a bit like M7, except that the stars are somewhat fainter than those of M7.

A much more difficult target is the faint edge on galaxy NGC 891, located three degrees east of Gamma Andromedae. It is a very faint streak of light in a six inch. it begins to show considerable detail in a ten inch including a long irregular dark lane.

Perhaps the second most difficult Messier object is M74, the face on spiral galaxy is located 1 1/3 degree east and 1/2 degree north of eta Piscium. The nucleus is rather small and fairly bright. It is visible in a 2.4 inch refractor, but it looks like a fuzzy star and is frequently missed in small telescopes because of its stellar appearence. The outer portion of the galaxy shows up as a small circular haze surrounding the nucleus in my eight inch and I have never seen any other detail (even in a 12 inch).

A somewhat easier Messier galaxy is M77, located about a degree east-southeast of delta Ceti. It again has a bright almost stellar nucleus with an elliptical area of haze surrounding the core. Larger telescopes (10 inches or larger) will show a small dark arc in the hazy outer area of the galaxy. There are a few other galaxies in the area, but they are somewhat fainter than M77. NGC 1087 is a degree southeast of M77 and shows as an elongated patch with another galaxy appearing just north of NGC 1087.

As a final target, try the small planetary NGC 1535 located 4 1/2 degrees east of gamma Eridani. My eight inch shows it as a bluish green spot of light with a slightly darker center and a very faint central star. And PLEASE come to the Star Parties we have at Hickman. I hate observing alone!

David Knisely

PRAIRIE ASTRONOMY CLUB, INC.
FINANCIAL STATEMENT
NOVEMBER 1, 1982

Beginning bank balance, November 1,1981	$361.82
Ending bank balance, November 1,1982	$509.15
Income:	
Membership dues	$707.00
Sales to Club Members	133.00
Sales through Hyde Observatory	658.24
Sales Tax Collected	27.45
Donations to Club	137.01
Donations to Observatory	182.57
TOTAL INCOME	$1845.27
Expenses:	
Astronomical League Dues	$63.00
Payments to Hyde Trust Fund	415.23
Posters purchanse for resale	433.58
Postage	162.71
Post Office Box Rental	20.00
Printing(newsletter, etc)	119.57
Sky & Telescope subscriptions	400.00
Sales Taxes Paid	27.60
Publications for direct sale	45.25
Miscellaneous expenses	11.00
TOTAL EXPENSES	($1,697.94)
Reserve:	
Observatory Collection (Oct.)	$32.47
Observatory share of Oct. sales	7.92
Sale Tax (October)	1.78
RASC Handbook	55.00
TOTAL RESERVE	($97.17)
NET INCOME (LOSS)	$50.16

Submitted by Lee Thomas Tresurer

NOTES FROM YOUR PROGRAM CHAIRMAN

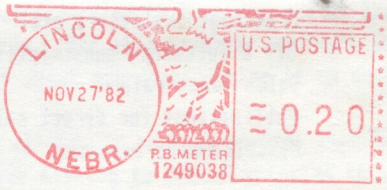
Having noted last month that his tape-recorder was non-functional (it was broke) for a presentation given by one of the shuttle astronauts, our program chairman has performed some fiddling

Program Chairman (cont)

and come up with a salvaged version of the astronauts talk. It's not in dbx encoded stereo, but it is understandable. Along with this you will be entertained(?) by a short slide presentation created by the program chairman entitled "Winter Preview". If neither of these programs grab you, consider there are at least cookies and drinks afterwards...so be sure attend!

John Lortz

The Prairie Astronomer
c/o PRAIRIE ASTRONOMY CLUB, INC.
P.O. Box 80553
Lincoln, NE 68501



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