



Headphones, Your Scope and You!!!

by John Lortz

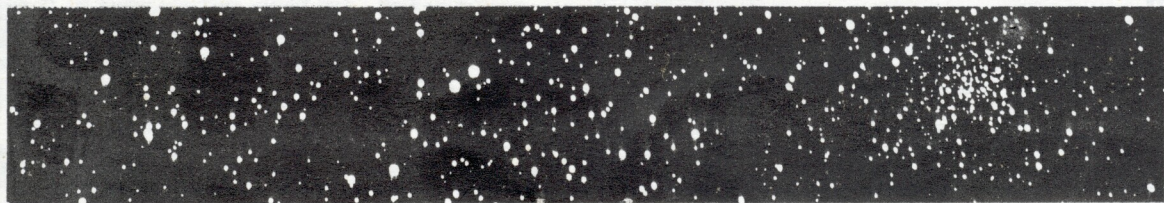
I think one of the most enjoyable things about astronomy is the freedom it gives you. It's just you and the sky, one on one, out there in middle of the night. It relaxes you as a quiet hour of meditation would, maybe even more. There's something calming about the night sky and it's endless cycle about us. In the past few month's I've only ventured out twice with my telescope, and both of those times I was at less than ideal observation points. But though I get out infrequently, I make sure the time I spend out in the open night air is quality time in terms of enjoyment and relaxation. And one way I've found to enhance my observation time is through the use of music.

How often do you see people wearing headphones and carrying small radio/cassette players these days? Street workers, students, joggers, the list is endless. Lately I've been using a small cassette player when I observe, and the effect I get is tremendous. Now maybe many of you already practice this form of deep-sky observing, but the thought didn't dawn on me until just recently. The effect you get is not that much different from sitting in a top-rate movie theatre watching Star Trek or 2010. It seems to raise you to a different level of awareness, letting you appreciate the sky to a much greater degree.

Most of the music I use either comes from movie soundtracks or from what is often termed New Age Music. Some of my favorite soundtracks for observing include Alien, Aliens, Outland, 2010, Space Camp, Logans Run, and Young Sherlock Holmes, just to name a few. New Age Music is perhaps the best source for observing music. One of the most popular New Age labels is the Mindham Hill company. Musicians such as William Ackerman, Liz Story, Scott Cossu and Michael Manning work under this label and all have excellent albums for the sky gazer. Other noted New Age artists that I am familiar with include Andreas Vollenweider, Suzanne Ciani, Michael Jones, and David Lanz.

There's one album I must highlight as being my favorite (at least right now). It's by a group called Checkfield and is entitled "Water, Mind, and Stone". One particular track from this album called "The Good Brown Earth" adds a marvelous touch to scanning the double cluster or viewing the Pleiades (I'd love to use it with a slide-show!).

It's extremely difficult to convey what an emotional lift music can provide to astronomical observing. Personally it has not only helped the hobby aspect of astronomy, but turned my observing sessions into relaxation times... times to get away from the bustle of daily life. I do hope you'll try some music with your observing sessions sometime soon and discover the same experience for yourself!



President's Message....

At 9:00 a.m. on one of the few cold Saturdays we've had so far this Spring, April 11, a bunch of stalwart astronomers gathered at a cement-covered hole in the ground with shovels, brooms, and determination. Within 4 hours, they had eradicated 20 years of debris. The Atlas Site hadn't looked so good since it had a crew of Air Force types keeping it spotless.

My sincere thanks to everyone who participated on the cleanup crew. It was hard work, but Del Motycka's donuts and coffee made it more bearable. Besides, it's a little like restoring an old house-- the deeper you dig beneath the layers of grime, the more possibilities you begin to see. I think most of the laborers came away with an appreciation, and a minds-eye view of what the place could look like five or ten years in the future. As they say in the credit card ads, "Master the Possibilities!"

Dave Knisely put to rest a vicious rumor that the Beatrice radio station was planning to erect their tower within a mile of us, that it would be over 1,000 feet tall, and equipped with psychedelic strobes. The reality: It will be closer to 8 miles away, to the west; it will be 740 feet in height, and equipped with standard red aviation beacons.

I'll be meeting with Bob Crosby, who has consented to draw up the sales contract on the land for us, on the Friday before the meeting. Assuming that the surveying work is near completion, we will attempt to expedite the transfer of ownership as quickly as possible so we can demolish the access shaft.

Meantime, I have keys to the site for anyone wishing to use it. (We have permission from the Firth Co-op.) Until we actually take possession, there will be no keyholder fees, but please return your key as soon as possible after use. This fiendishly clever plan allows everyone to become acquainted with the site, fall in love with its obvious astronomical charms, and thereby feel Terribly Deprived when we slam the gate, assuming that is the direction we decide to take. (And nevermind that slamming the gate presently would not deter anybody who can drive the superhighway the gatecrashers have carved through the field next to it; we'll resolve that with landmines, if necessary.)

Don't forget, in the swirl of Atlas Site activities, that **ASTRONOMY DAY IS COMING MAY 9**. Final plans will be laid at the Club meeting. We need your presence and you help.

Also, I hear tell that Andy Corkill has returned from India (?) and Colorado. If he was using the stars to find his way to Colorado, there is reason to seriously doubt this guy's sky knowledge. There must be some other explanation. Come to the club meeting, and we'll ask him about that, and other possibly embarrassing questions.

Lee Thomas

The Prairie Astronomer is published monthly by The Prairie Astronomy Club Inc., and is free to all club members. Membership expiration date is listed on the mailing label. Membership dues are: Junior Members and Newsletter Only Subscribers... \$8.00/yr, Regular Members... \$22.00/yr, Family Membership... \$25.00/yr. Address all Membership renewals or questions to THE PRAIRIE ASTRONOMY CLUB, INC., P.O. BOX 80553, LINCOLN, NE. 68501. For other club information contact one of the following officers: Lee Thomas (Pres) 483-5639, David Knisely (V. Pres) 223-3968, John Lortz (Sec.) 390-9821 (Omaha), Norma Coufal (Treas.) 483-5685, Dan Neville (2nd VP) 476-7772. All articles and comments should be sent to newsletter editor JOHN LORTZ 9255 CADY AVE. #14, OMAHA, NE. 68134 no later than 6 days before monthly club meetings.

The Reviewer...

BY DAVID KNISELY

THE AMATEUR RADIO ASTRONOMER'S HANDBOOK

BY JOHN POTTER SHIELDS

PUBLISHED BY CROWN PUBLISHER'S, INC.

Radio astronomy is one facet of the science which up until now has been out of the reach or even the comprehension of most amateur astronomers. Being a Ham radio operator, I have tried to listen to things such as Jupiter or the sun, but neither object cooperated very well. When I saw that someone had written a book on amateur radio astronomy, I jumped at the chance to learn more about the subject. Sadly, John Shields new book "The Amateur Radio Astronomer's Handbook" is a disappointment as it is poorly organized and spotty on useful information for the beginner.

The book starts with an introduction which has absolutely nothing to do with amateur radio astronomy. In chapter 1, he compares radio and optical astronomy doing a fair job here. Chapter 2 talks about radio propagation and the ionosphere, with little mention of what this has to do with radio astronomy. Indeed, the ionosphere is transparent to the radio signals that are most often used in astronomy and thus it should have been mentioned only in passing. Chapter 3 does talk about extraterrestrial radio sources but only in a very basic way. When talking about radio emissions from Jupiter, Shields fails to mention that whether you get to hear something or not depends largely on where the Jovian moon Io is in its orbit at the time you are listening. Shields does not tell which sources might be detectable by the amateur and which, like the 21 cm hydrogen line, might not. He has a short chapter on optical astronomy basics which should have been left out because it adds nothing to the discussion.

Chapter five is a basic electronics section which is not terribly informative and which is placed far too early in the book. It will tend to confuse the beginner and bore the more advanced

amateur. Chapter six is a discussion on basic systems and is poor on practical information. Now I am sure that the Mills Cross antenna and the Arecibo antenna are fascinating and very effective, but what amateur can fit either of these 1000 foot diameter systems in their back yards?!

Chapter seven is a bit better as it is as discussion of simple antennas for radio astronomy, but it still has material left out that is essential to success. Chapter eight talks more about practical systems like using standard FM broadcast receivers and preamplifiers with simple detector/integrator circuits to listen to the sun. This is all well and good, but did anyone tell the author that most radio signals from the sun are AMPLITUDE modulated more so than frequency modulated? You would have to modify the circuits and place a AM detector in most standard FM broadcast receivers to get good results.

Chapters nine and ten continue the poor performance of the previous chapters by oversimplification and the omission of critical information. The antenna diagram of the four-bay quad antenna is misleading and the 144 Mhz helix antenna is physically too big to mount or steer effectively. The author does a poor job of explaining feed lines and antenna impedances, things the amateur absolutely must know in order to build an effective antenna.

Chapter 11 is a practical discussion on a solar radio telescope and is largely a repeat of material covered in chapter eight with a rather poor discussion of interferometers. Chapter 12 is on a 400 Mhz interferometer but doesn't really say what it is useful for! It doesn't really have enough information on how to even set one up right! Chapter 13 does have a good discussion on listening to Jupiter, but it still leaves out the critical information on Io. Chapter 13 discusses listening to FM signals bounced off meteor showers and Chapter 14 is a sort of last word on radio astronomy.

In short, this book is short on information, short on organization, and large on price for a paper bound book. If you want to know something about radio astronomy, this book won't help very much.

Back In The Good Old Days...

APRIL 26, 1977

Last month's newsletter reported the possible existence of as many as 100 small moons orbiting Uranus, but those conclusions have been modified to state that there are probably at least 5 faint rings similar to those circling Saturn. The rings still have not been seen but their presence is inferred from measurements of starlight being cut off as stars passed behind the rings. An effort to observe these rings more closely may be made in 1986, when a spacecraft due to be launched this September could approach Uranus provided it is still working after nine years and survives earlier scheduled passes of Jupiter and Saturn.

Groundbreaking ceremonies were held at Holmes Park site of the Hyde Community Observatory Thursday, April 21 at 2:00 p.m. Construction is to begin within a few days with completion of the observatory expected this summer.

Earl Moser has suggested getting together a list of members who have C.B.'s. When the list is put together the club will publish the names in the newsletter. We need your name and "handle" as well as the channel you like to use. To get things going, take note that Earl's handle is "Stardust" and he can be found on channel 15 with the official call sign of KAMU 8900.

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At the Next Meeting...

Ron Veys plans to show a videotape on the new Smithsonian Orbital X-Ray Telescope and talk about the parts he has helped design and are being built in Lincoln. Ron also has some 'inside' information on the aftermath of the Space Shuttle Challenger "explosion" and the results of the follow-up investigation.

We will be making final plans for Astronomy Day 1987 at the next meeting so it is very important that you stop in to find how you can help out!



STAR PARTIES FOR THIS MONTH ARE ON MAY 22ND AND MAY 29TH AT THE ATLAS OBSERVING SITE NEAR FIRTH. The Realm of the Galaxies is high in the eastern sky and holds many interesting sights. In Coma Berenices is the "Black-eye" galaxy M 64, located about a degree east and a bit north of the fifth magnitude star 35 Comae Berenices. Visible in a good pair of binoculars, the galaxy shows up as a fuzzy oval with a brighter center in small telescopes, with an eight or ten inch showing the dark curved lane near the nucleus along the eastern side. People who like globular clusters should take a look at M 53, located about one degree east and three quarters north of Alpha. A six inch will show some stars near the edges of the cluster and an eight inch will resolve it at least partially, but its stars are not very bright. About a degree to the southeast is another globular cluster, NGC 5053. It is much fainter than M 53 and shows as a diffuse fuzzy patch in six inch or larger instruments. My ten inch showed a few very faint stars at the edges but otherwise could not resolve the cluster.

NGC 4293 is a good target for those with four inch or larger telescopes. Located about one half degree north of 11 Comae, the galaxy is almost edge-on, showing some mottling when an eight or ten inch is used. A somewhat brighter spiral is M 100, located about two degrees south and one half east of 11 Comae. It is visible in a 60mm refractor and shows definite mottling in an eight inch telescope. A ten inch will begin to show the tightly coiled spiral arms of the galaxy.

In Virgo is the famous "Markarian Chain" of galaxies that is a favorite target for deep sky enthusiasts. It can be found about half way between Denebola and Epsilon Virginis and consists of a number of galaxies along a curve running north-east to south-west. Most of the bright galaxies here are elliptical with a few edge-on spirals thrown in. There is a spot near the center where an eight inch will show up to nine galaxies in a one degree field. In the sought portion of Virgo is the Sombrero Galaxy M104, located four degrees south of Chi Virginis. It is bright enough to be seen as a fat fuzzy spindle of light in a 60 mm refractor and the dark lane that gives the galaxy its name can be seen in an eight inch at high power.

For a final challenge for those with six inch and larger instruments, try the peculiar galaxy

OBSERVING CHAIRMAN'S REPORT

by David
Knisely



NGC 4038. It can be found about a degree north of the faint star 31 Crateris, and looks like a fuzzy comma. Known as the "Ringtail" galaxy, this object begins to show an inner broken ring of light in the main galaxy with a double tail of light off to one side when viewed in a ten inch.



5-22-29 STAR PARTY - ATLAS

at the last meeting... MAY 9 - A. DAY

The March meeting was called to order at 7:25pm by President Thomas with 22 members and no guests present. It was announced that the Midstates Convention would be held at Avila College in Kansas City on July 24 thru 26th. An information sheet on the event was handed out and a show of hands on who might attend produced about 10 takers. The club plans on presenting a slide show at the event, but plans will be made at a later meeting.

There was an update on the Atlas Site... the new boundaries as surveyed give us a plot of 470 ft. east and west by 394 ft. north and south. Plans were discussed concerning leveling the ground, marking the concrete obstructions in the grass and burning off the grass. The demolition crew is ready to attack the shaft as soon as we let them know, but a legal survey of the property must be made before we can officially take possession. A volunteer to head up the clean up crew could not be found so President Thomas was unanimously appointed. The tentative date for cleanup will be Sat. April 11th at 9am. 16 members volunteered for the cleanup that day.

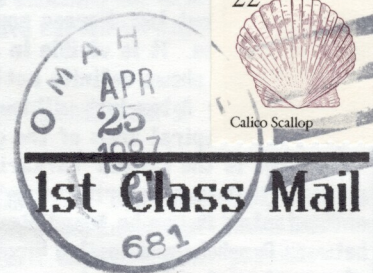
Astronomy Day plans are moving ahead. Norma reported that East Park has partitions, tables and outlets for us to use. Dan has the telescopes lined up and hopefully John Lortz is working on the displays [EDITORS NOTE... I am!!!]. There was no more business and so Earl Moser presented the program "Past Club Activities That He Has Pictures From". Everyone enjoyed seeing many old familiar faces. The meeting was adjourned at 9:10pm for refreshments.

The Editor thanks Ron Veys for taking notes in his absence at the last meeting!!!

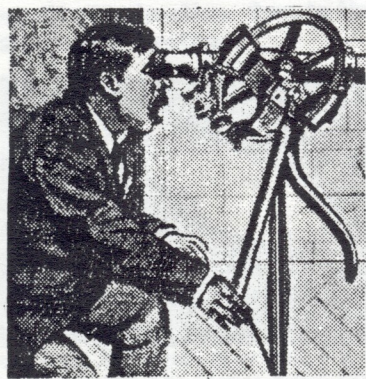
THE PRAIRIE ASTRONOMER

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Next PAC Meeting...
April 28th