

QRZ NEWS

A MONTHLY PUBLICATION OF
SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB, INC
PO BOX 1033 - LANCASTER, PA 17608-1033
(Founded June 1960)

AN AFFILIATED SPECIAL SERVICE CLUB OF THE ARRL, INC.

"Public Service through Communication"

Website: WWW. K3IR.org

Email address: k3ir@arrl.net

Repeaters: 145.230 - 449.975 - Packet 145.030 - ATV 923.250, FN10se

Club site 1715 Breneman Road, Rapho Twp. (Manheim P.O. 17545 no delivery)

June 2014

President's Message

GOTA

This is the time of the year when a major supplier of charcoal (remember that stuff?) hits us with the admonition to "Get out there and grill". I want you to GET ON THE AIR!

By the time you receive this Field Day will be almost upon us. This is your opportunity to get out there and operate. The board, along with other club members, have been hard at work preparing for this year's event. There are plenty of opportunities to participate, regardless of your level of experience.

We will be operating 4 HF transmitters, a VHF station, and a GOTA station. In the spirit of Field Day the 4 HF stations will be operating on emergency (solar) power, be using temporary antennas, and will not be housed in a permanent structure. The VHF station will be housed in an RV but will also use temporary antennas.

The GOTA station will be located in the operating building and will use the existing antennas. The GOTA station is intended for use by new licensees, potential licensees, or those who have let other things rule for the past few years and are looking to get back on the air. The GOTA station will operate under the direction of a coach who will explain proper operating procedures and serve as a control operator.

We also will have information tables and technical demonstrations set up.

So, there are lots of opportunities for ALL to be involved. First, be advised that this is not a hard core contest for SPARC. We don't want anyone to feel pressured to perform. It is intended to be a fun day to experience the adventure of ham radio. If you want to operate all night, okay. If you just want to operate for a few hours, okay. If you just want to assist with logging, okay. If you just want to meet and greet our friends and neighbors, okay. If you just want to watch, that's okay too, but you are missing something big if you don't "Get On The Air".

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GOTA operators need not be licensed since a licensed control operator will be present the entire weekend. So, bring the kids, grand kids, neighbors, neighbor's kids.

Now, the dates are Saturday June 28 and Sunday June 29. Set up will begin Friday afternoon and pick up again Saturday morning. Operations will begin at 2:00PM Saturday and run continuously until noon Sunday. No excuses, Get Out There!

73, Harry WA3FFK

Coming Events

SPARC membership meeting 7:00Pm

Tuesday 24 June 2014 Field Day setup; tent, tables, and other permitted activities at the club site, 1751 Breneman Rd., Rapho Twp.,(Manheim P.O. 17545 for GPS)

Monthly Breakfast

The second Saturday at 0800 of every month is a SPARC breakfast at Gus's Keystone Restaurant, 1050 W. Main St, Mt Joy, PA.

Contact [Gerry Wagner, KB3SSZ](#), for more details. Everyone interested in Amateur Radio is invited to attend. See <http://guskeystone.com/> for restaurant details.

Other Events

Friday, 4 July 2014 Aphelion, the Earth's greatest distance from the Sun (152,093,404km), and the approximate peak of the Summer Es season.

Editor's Notes

.The June ARRL VHF contest is now behind us and Field Day is just ahead. My time on the VHF contest was limited this year, but I have a few observations to report.

The Packrats, W3CCX, did their usual great job from Camelback Mtn. in the Poconos. They had a great signal in Lancaster County on six meters, the only good band I have working.

Phil, K3TUF, reports that W3CCX made about 800 contacts on six meters. The full report isn't done yet.

Sporadic E was good during the contest. Everybody seems to love 50.150MHz. Many times I heard 3-4 stations fighting for the frequency. They don't hear each other, but the target stations do.

I heard many of the big gun stations above 50.170MHz avoiding the low end QRM. Some were above 50.200MHz.

See Chris' Patterson's six meter DX report for more info.

Let's go for Field Day our biggest operating event of the year!

73, George, W3FEY

Six Meter DX Report

18 June 2014

The six meter summer E season is in full swing, although for stations in this area trying to work international DX it is more of a "swing and a miss". The usual single hop sporadic E has generally been on par with other years, but until today, most of the DX openings have been to South America and the Caribbean. In mid-May Argentina, Chile, Uruguay and Brazilian stations were worked throughout the US. These South American openings generally follow the vernal equinox by a few weeks.

Late May saw the first European opening from this area to the Iberian peninsula. There have been some Caribbean openings and tonight Central America is coming in. Stations I worked/heard this evening include 9Y4D, XE3ARA and 8P6NW, and YS1AG. For those who need FS the FS/W9DR

DXpedition is going on. During the ARRL June VHF contest last weekend T48K (Cuba) was active from the rare grid square FL11, and worked a bunch of stations throughout the US. The usual single hop sporadic E has generally been on par with other years

For the contest Al K3TKJ, Rick AK3E, Dave N3DB and I traveled to Fort Fisher NC to activate the rare grid square FM13. We all left for Fort Fisher early on Friday, June 13th. We arrived about noon and set up three AB-577 "rocker launchers" and antennas next to the parking lot of the visitor's center. Although we planned to operate that day, the 500 mile trip and heat got the best of us. On Saturday we finished setting up equipment and began operating on 6 meters, 2 meters, and 432MHz. Equipment included 1.5KW and 6M7JHV on six meters, a 600 watt Commander amp and two 9 element M2 yagis on 144MHz, and 110 watts and two 25 element K1FO yagis on 432MHz. The rigors of the contest took out the Commander and 432 MHz RF Concepts brick MHz so by Sunday we were running barefoot on each band. Even with only 50 watts output on 432 MHz we worked NZ3M in Elizabethtown at 485 miles and K8GP/R in FN00 for a 500+ mile contact. Two meters was similar-with the flat surroundings the range for communication is remarkable. Unfortunately stations generally don't look that way and we couldn't make enough noise to attract them. Six was hopping most of the weekend. Although the final tally isn't in, we made about 500 contacts on that band. Highlight on six was working W7GJ off the Moon on Monday immediately before tear down. That put Lance within three grids of the Fred Fish Memorial Award (FFMA). We all left for home on Monday about 10:30 am. I arrived in Lancaster about

8:00 pm and just missed the World Cup game against Ghana.

Today, June 18th, saw the best US European opening from the US. Although in this area contacts were restricted to EA, EA6, CN and CT, K1TOL worked stations in other areas including Poland (SP), Moldova (ER), Greece (SV), Ukraine (UT), Denmark (OZ), and UK (G). The opening ranged from the Midwest to Florida, and propagation shifted throughout the US.

I am still waiting for the big opening to Europe to work some new DXCC. Hopefully it will come soon.

73, Chris W3CMP

ARES/RACES



As part of the SPARC commitment to emergency communications, the SPARC repeater system is maintained as available for linking with other area repeaters.

Lancaster County RACES VHF Net is held on the first Tuesday of the month at 2030 hours local time on the 145.310 MHz repeater in Rawlinsville.

The Lancaster County primary ARES/RACES repeater is on 145.310 MHz with minus offset and 118.8 PL.

Pennsylvania RACES HF Nets are held at 3993.5 kHz LSB on all Sundays except holidays.

The statewide net is on the first Sunday of the month at 0800 hours local time.

The Central Area (including Lancaster County) net is at 08:30 local time.

EPA NBEMS Net, Tuesday, 7:30pm local EST,

3.5920mhz Mode: Olivia 8/500 1khz,
Net Mgr: WA3WSJ@arrl.net

SPARC Nets

[SPARC holds nets every Tuesday at 2100 local time on 145.230 MHz minus offset and PL of 118.8. The 449.975MHz repeater is linked to the 2m repeater for the net.](#)

Club Officers

President Harry Bauder – [WA3FFK](#)
Vice-President Kevin Lampo – [K3LLC](#)
Secretary - Dave Sarraf. – [N3NDJ](#)
Treasurer - Mike Hess– [KB3YWG](#)
Repeater Trustee - Dave Payne - [N3LOM](#)

Nearby Nets of Local Interest

If you need information on access tones etc, the referenced web sites below will usually provide the information needed. For more information, see <http://arcc-inc.org/arc-fdbas.html>

Monday [Ephrata Area Repeater Society](#) Net
9:00 PM on 145.450MHz.

Monday [Keystone VHF Club](#)
Combined Club & ARES/RACES Net 8:30PM
on 146.970MHz.

[Monday South Mountain Radio Amateurs](#)
SMRA Club Net 9:00PM on [145.430MHz](#)

SSB net 9:00PM on 146.210MHz. May be slightly delayed by SMRA club net.

Tuesday [Digital Net](#) 8:00 PM on the York 146.970MHz Repeater -- This is a busy digital data training net for beginners and advanced users. The primary mode used is MT63-2k. Other experimental modes are also used.

Wednesday [Red Rose Repeater Association Net](#) 9:00 PM on 147.015MHz

Wednesday [QCWA Net](#) 9:00PM on 146.97MHz.

Thursday [Lancaster Radio Transmitting Society Net](#) 9:00 PM on 145.390MHz

Sunday Info Net

On the N3TUQ 900MHz repeater: 8:30PM
Output: 927.5875MHz Input: 902.5875MHz
(-25MHz) PL 114.8Hz.

The N3TUQ 900MHz repeater is located on the [LVSRA tower on Cornwall Mountain](#).

Net control: Bob Howard, [KB3QAQ](#)

For more information visit
<http://www.n3tuq.com/repeater.aspx>

PACKRAT MONDAY NIGHT NETS

Visit the Mt Airy VHF Radio Club at:
<http://packratvhf.com/airtimes.htm> for the latest information on VHF/UHF nets.



Two EPA Nets Now Accessible via Echolink

Posted By: egroups_n3sw egroups_n3sw
Mon Aug 27, 2012 11:40 pm

<>The EPA AA3RG and Echolink Traffic Net (EAETN) has been accessible since its inception via Echolink at node AA3RG-R (#149493). See the group Calendar for more information. [*Thursday 8:00PM*]

<>Now the Capital Area Traffic Net (CATN) is also accessible via Echolink at node N3TWT-R (#743026). See the group Calendar for more information. All (*licensed hams*) are welcome to join in on these nets.

73 -Scott N3SW EPA STM-

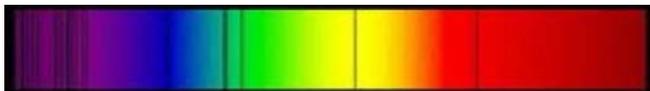
<>AA3C note: To visit our group on the web, go to NTS-EPA Group web site:
<http://groups.yahoo.com/group/nts-epa/>
Both nets will utilize the 146.640(tx-) MHz.
Transmit access tone: 82.5 Hz.
AA3RG Repeater. <http://www.aa3rg.org/>

QRZ News Publication

QRZ News is published monthly. The deadline for submission of items for publication is 11 days before the regular membership meeting on the fourth Tuesday of each month. If material is not copy and paste ready for publication, more lead time is required.

We operate on an exchange basis with other not for profit publications. Articles printed in QRZ News may be reprinted in a not for profit publication provided proper credit is given.

QRZ News is archived at
<http://www.k3ir.org/>



Anders Jonas Ångström



A review of Ångström's Spectroscopy

by

James L. Ibaugh, [AA3C](#), [ARRL T.S., V.E.](#), & [R.I.](#)

Anders Jonas Ångström (Swedish) Born: 13 August 1814 and Died: 21 June 1874; was a Swedish physicist and one of the founders of the science of Spectroscopy.

The Ångström unit ($1 \text{ \AA} = 1 \times 10^{-10}$ meters) with which the lengths on a scale of the wavelength of light or inter-atomic spacings in condensed matter is measured are named for him. The unit is used in Crystallography as well as Spectroscopy. The word Spectroscopy is pronounced as "Spek-'tras'-cupy".

The many types of spectroscopy throughout the electromagnetic spectrum from radio, optical to x-rays and gamma rays.

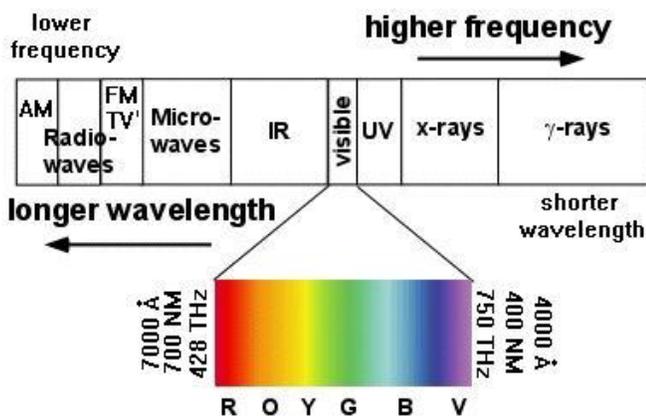
My first experience with this science was doing academic work at Franklin & Marshall's Astronomical Observatory (now the Brundy) on F&M's Baker Campus. I was testing a new RCA Photomultiplier tube with a single crystal Gallium Arsenide and Cesium photocathode.

This tube was used on the output of a Bosch & Lomb grating & scanning monochromator to get a superior solar absorption line spectroscopic recording.

When I was transferred to the RCA Laser Engineering Division to automate laser line measurements, I had the photo spectroscopic experience to successfully complete that big project quickly.

The spectra above are all related to wavelength measurements. The next spectra job was in a different domain, the spectrum signatures of energy produced at a specific wavelength or a group of wavelengths.

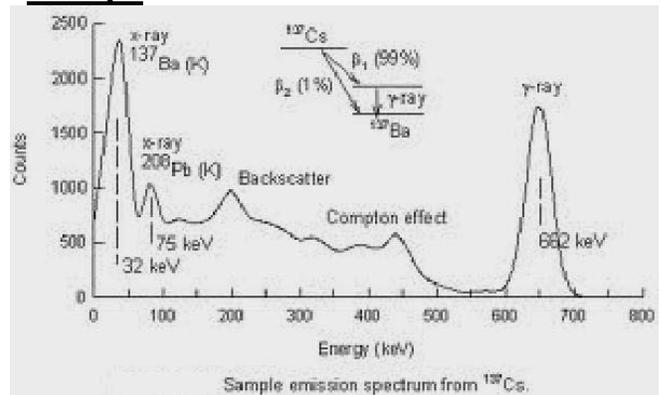
My next RCA assignment was in Phototube Developmental Engineering doing isotope pulse height resolution qualifications on new PMT types. All involved the use of my favorite HP5300 Multichannel Nuclear Analyser used in X-ray and Gamma ray Spectroscopy.



Gamma-rays (Γ) are found at higher frequencies and shorter wavelength above X-rays. Both rays can be detected and converted to a single wavelength. Using a

NaI(TL) single crystal scintillation detector it is possible to measure the energies of both X-rays and Gamma rays. The NaI(TL) crystal flashes a 410nm (4100Å) photon burst every time it is hit by a Gamma or X-ray. The amplitude of the light flash is directly proportional to the energy of the impinging ray. Cs137 isotope has two primary emissions, a 32keV X-ray and the prominent 662keV Gamma ray.

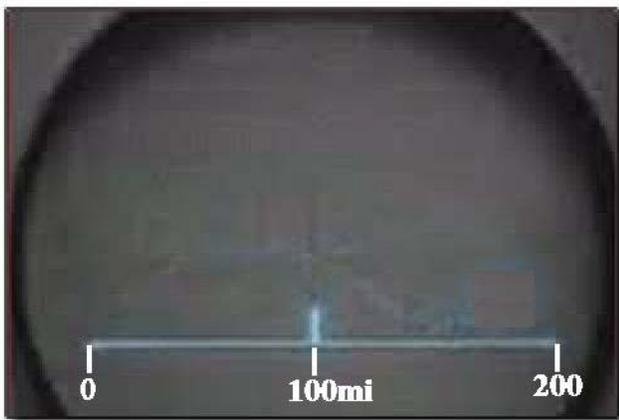
Energy Spectrum of Cesium 137 Isotope



The base line of the graph is calibrated in thousands of electron volts equivalency. The vertical scale records the number of impacts per minute (adjustable). The Back Scatter at ~150keV to about ~300keV and Compton Effect from ~300keV to ~500keV counts are not directly from Cs137 isotope but are secondary radiation from impacts hitting nearby metal objects, even the crystal's metal case, holder and nearby metal objects. This detector system can record Cosmic Rays if the PMT preamp gain is reduced to very low gain or adding signal attenuation. Cosmic rays are very high-energy particles, mainly originating outside the Solar System. They may produce showers of secondary particles that penetrate and impact the Earth's atmosphere at close to the speed of light and sometimes even reach the surface. Composed primarily of high-energy protons and atomic nuclei, they are of mysterious origin.

OK OM, where is the Ham Radio connection?

Today's Ham Radio has an old history with radio spectrum display systems. Hams, by the thousands, enlisted for World War II in the 1940's. Most were put to work in the Signal Corps, but a few were assigned to a top secret project called RADAR. Early radar sets used an Oscilloscope screen to display the time domain from which the range of the object was calculated in miles. Replica of SCR270 Scope.



0.002116402 seconds round trip for radar pulse to hit a 200 mile target and return to radar receiver. They did this in the 1940's before WW2. This used time domain spectroscopy to determine the target was at range of 100 miles.

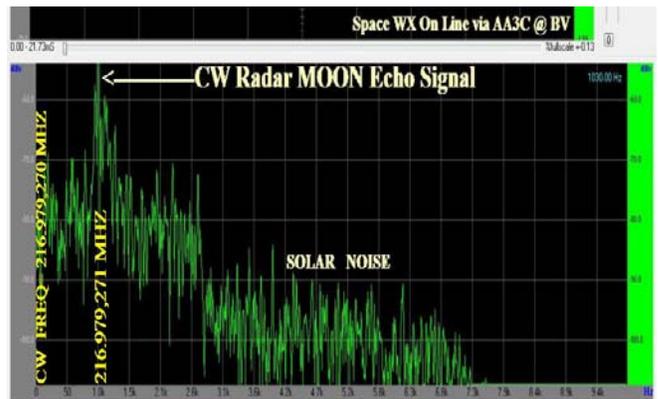


Circa 1950's Panoramap Radio Corp Panoramap Adapter PR-1. Some hams, who could afford the PR-1, took a small sample of their receiver's intermediate signal amplifier (IF) to feed the PR-1 with up to 200KHz band coverage.

In this century, spectrum displays are designed into Ham Radios, like the IC781.



Back to my favorite area – FREWARE software. Use Windows ZOOM controls, [CTRL+] or [CTRL-] to view next image.



Visual Analyser O'Scope for Audio Frequencies

Assuming your computer has a sound card and speakers, the audio is picked off the speakers so you need to temporarily route the receiver audio to the microphone or line audio input while running the Visual Analyser O'Scope, as in display shown above. Operate the receiver in the wide bandwidth mode.

Download Visual Analyser 2011XE0.3.2beta

it is free and I am told it works well in Windows NT, 2K, XP, Vista, & 7. I am using it with Win 7 on my Gateway laptop and works well.

See <http://www.sillanumsoft.org/> for details of Visual Analyser or other download versions.

Go to this URL:

<http://www.sillanumsoft.org/download.htm> for download and install information for V.A.

Download Install & EXE Files:

<http://www.sillanumsoft.org/Download/V.A.setup.exe>

Download V.A.exe file only:

<http://www.sillanumsoft.org/Download/V.A.exe>

***Articus Interuptus:** A reviewer of the draft of this article asked a very good question.*

"What is the difference between Spectroscopy and Spectrometry?"

Spectrometry is the design and fabrication of the physical instrumentation used to collect data or images which are used to develop Spectroscopic information. Spectrometry is a science in its self and always precedes collecting Spectroscopic information. These two sciences are forever linked together from beginning to end. - AA3C

I hope this article indicates how much Anders Jonas Ångström's spectroscopy work has become a part of today's electronic world.

James L. Ibaugh, [AA3C](#), [ARRL T.S., V.E., & R.I.](#)



Ham Ads:

FUNDRAISING OFFER

Do You Have a Will?

Is it up to date?

Our Treasurer, Mike Hess, is the managing partner of the law firm of Burke & Hess, LLC. In his 25+ years of practice, he has prepared thousands of Wills, Powers of Attorney, and medical directives. The typical cost of a set of reciprocating (meaning a husband and wife) Wills, Powers of Attorney, and medical directives is \$500. In a fund raising effort for the club, he is willing to prepare these for a price of \$250 donation to SPARC. This offer is open to any member or non-member who is interested.

If you haven't had these documents prepared, or tried to do them yourself on LegalZoom, it would be worth your effort and money to get them correctly. If you would like an appointment to go review your documents you can meet with him for the price of a \$50 donation to SPARC. If interested in this offer, contact Mike's office at 391-2911 and set up an appointment. Tell them you are from, or related to SPARC. The office is conveniently located at 1672 Manheim Pike.

It is also very important to note that any conversations in this regard are private and neither Mike, nor any employee of Burke and Hess, will ever disclose any information received in relation to the preparation of these documents. It is further important to note that given he is doing this for free, there is little chance of him wearing a suit for the meeting.

Equipment for Sale

From Harry Bauder:

Robert Ney has a Drake R-8 receiver from his brother's estate he would like to sell.

I haven't seen it but he says it is in like new

condition. Price is \$500. Anyone interested can call Bob at 367-6960 or

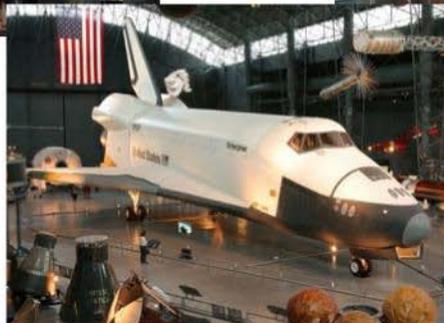
contact me at K3IR@arri.net.

SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB

TRIP TO SMITHSONIAN NATIONAL AIR & SPACE MUSEUM WASHINGTON. DC.

INCLUDES VISIT TO UDVAR-HAZY CENTER, NEAR DULLES INTERNATIONAL AIRPORT

SATURDAY, 23 AUGUST 2014
8:00 AM-8:00 PM- HOME BY 10:00 PM



\$30.00 PER PERSON, DEPART FROM AC MOORE LOT, 1515 LITITZ PIKE,
LANCASTER, PA.
MAKE CHECKS PAYABLE TO SPARC, P.O.BOX 1033, LANCASTER, PA 17608

FOR INFORMATION CALL JERRY WILSON, 717-672-6261, OR MIKE HESS at mdhess7@yahoo.com
CHILDREN AND GUESTS WELCOME

*******Mark your calendars now for Oct 4 2014*******

The Pennsylvania Amateur Radio Conference (PARC)

Registration is now available. This site will accept your sign-up and payment by PayPal or credit card. It will issue you a ticket to present at the door.....

.....<http://n3twr.org/events/parc> (all lower case). Several hams have already signed up to test the process and it works well!!!

Glenn, K3SWZ, has announced he will be here and will check QSL cards for ARRL DXCC, VUCC, WAS, and WAC, plus CQ-WAZ.

FYI...there is a classic car show at the east side of Carlisle on 1-5 October so if you need lodging we suggest you arrange it now. We will have alternate arrival suggestions on the [N3TWT](http://n3twr.org) Web site in due course.

The essence of the original announcement is as below now with presenters added.

The South Mountain Radio Amateurs (SMRA) of the Carlisle, PA area are pleased to announce a conference devoted to inspiring new technologies in our beloved hobby. This will be held at the Whispering Pines, a special events lodge, north of Carlisle, PA from 1200-1600 on Saturday 4 Oct 2014. Whispering Pines is situated in a delightful country setting with parking for more than 300 cars. Directions are on their Web site googled with "Whispering Pines".

We have been able to schedule speakers who are outstanding in their specialty. They speak at the level achieved by the annual conferences such as Microwave Update, Southern VHF Society, Central States VHF Society, Northeast Weak Signal Society and others throughout the US.

Attendance at these events often consumes more time from work and money than desired. Our intent is to make car pooling and low-costs in a single-day event the hallmark of the conference. Thus, the fee is \$9 for early on-line registration with complementary coffee, soft drinks, and cookies available throughout the event. We do, however, recommend eating outside of event hours, HI!! There are many restaurants in Carlisle but none near Whispering Pines. In keeping with the event level, business - casual dress is highly recommended.

Agenda includes:

Building High Quality VHF and UHF Antennas... yourself! by Ray Golley, N3RG

Live demonstration of the latest HF Flex Radio software defined (SDR) transceiver, by Phil Thies, K3TUF.

Working the World on the low power HF WSJT-X data mode by Richard Goodman, WA3USG

A photo visit to an outstanding HF, VHF, UHF, microwave, contest station, by Herb Crumlich, WA2FGK

Automating Your HF/VHF Station logging and control of radios, by Paul Sokoloff, WA3GFZ

Target Audience: Whether your interests are HF, VHF, microwave , 2 M FM, other, or all the above, this is an opportunity to expand your knowledge of what is possible today and what may be doable for you even sooner than YOU may imagine. Don't miss the opportunity to attend a top flight conference focused on great presentations with ease of attendance. Seating will be limited, so sign up at your earliest possibility. For lodging, please google on Carlisle, PA lodging noting that the well-known motels are situated along I-81. We intend to have Power point copies of each presentation on a Web site after the conference with details being announced at the conference. Please bring your own paper/pens/other for note taking.

All recipients: Please pass this EMAIL to as many clubs and individuals as you can so as to "get the word out far and wide"!! Please also keep a record of who received it so you can send out the anticipated follow-on EMAILs, e.g. when the Web site is ready for sign-up, etc. If you desire, please copy W3HMS@aol.com.

For program/technical questions not addressed above, please contact John Jaminet, W3HMS, at EMAIL: w3hms@aol.com. For logistics questions, please contact Don Evans, KB3VAX, at EMAIL: kb3vax@yahoo.com

John Jaminet, W3HMS

2 June 2014

Ham Equipment Available for Sale

May 27, 2014

Harry Bauder WA3FFK
4319 Snavely Drive
Elizabethtown, PA 17022-8612
Tel: 717-944-7235
E/[mail: harrybauder@corncastnet](mailto:harrybauder@corncastnet)

Regretfully, for the past two years I have not been able to attend our monthly SPARC meetings due to health problems, surgeries, broken bones, etc. encountered by both my wife and myself. For the past 30 years (since 1985), I have enjoyed operating on the HF bands (10-160meters). However due to the above mentioned health challenges, Nancy and I will be moving to smaller retirement quarters where radio towers will not be possible.

Therefore, I am offering for sale my complete ham station which includes the following:

KENWOOD TS-430S TRANSCEIVER

with Instruction Manual

with Service Manual

KENWOOD SP-430 MATCHING SPEAKERS

KENWOOD PS-430 MATCHING POWER SUPPLY

KENWOOD MC-42S HAND-HELD MIKE

KENWOOD PC-1A PHONE PATCH CONTROLLER

with Instruction Manual

MFJ-989C VERSA V ANTENNA TUNER (used alongside the Dentron Amp)
with AC power supply adapter
DENTRON 160-10L LINEAR AMP (2000 wafts)
with Instruction Manual
MET-392B HEAD PHONES
NYE VIKING 2000WATT LOW PASS FILTER
with Instruction Manual
MFJ-949D DELUXE VERSA ANTENNA TUNER (300 watts)
with Instruction Manual
with AC power supply adapter

All the above items are in excellent condition and available for inspection and will be priced for immediate sale. PLEASE SHARE THIS SALE OF HAM GEAR AT OUR SPARC MONTHLY MEETINGS. Thanks for your help!

Sincerely,

Clive R. Buttemere KB4NCP
101 Murry Hill Drive
Lancaster, PA 17601-4109
Tel: (717)519-6976; (717) 951-6429 (cell)
email: clivenancy@gmail.com