CQ CHATTER

APRIL 2018 VOLUME B18 •ISSUE 2

WOOD COUNTY AMATEUR RADIO CLUB

President	WB8NQW	Bob Willman
Vice President	KD8VWU	Doug Perez
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	KE8CVA	Terry Halliwill

http://wcarc.bgsu.edu

Solar Maximum and Minimum 2009-2020

from auroraborealis blog

On a roughly 11-year basis the Sun's radiative output goes through a repetitive cycle. We call these changes the solar cycle. We are now at the ending point of solar maximum period number 24. During the last solar minimum, there were few magnetic storms on the sun, sunspots were rare, and geomagnetic disturbances here on Earth were nearly nonexistent. Obviously, hf radio propagation is affected because of the close connection between the Ionosphere and solar radiation. Aurora watchers have had to travel to the polar regions to see the Northern Lights.

2016 and 2017 brought us decreasing sunspot numbers, lower solar output, and the return to solar minimum conditions: "What does this mean?

Chinese OTH Radar on 40 Meters

from ARRL News

The International Amateur Radio Union Region 1 (**IARU-R1**) Monitoring System (**IARUMS**) reports that one of China's over-the-horizon radar (OTHR) installations has been causing interference in the Amateur Radio 7 MHz band. The IARUMS **February newsletter** reports on that intruder and others.

Other top 5 intruders include a "single-letter beacon" transmitting either the letter "K" or the letter "T" on 7039.3 kHz. The source is believed to be the Russian Pacific in Petropavlovsk-Kamchatsky. A Russian F1B teleprinter signal (RDL) has appeared on 7193 kHz, with an encrypted frequency-shift-keyed (50-baud) signal, originating in Kaliningrad. Authorities in Germany and Switzerland have filed official complaints.

continued---on p. 7

Net Check Ins

Mar 6 Traffic: 0

N1RB (NCS)
KE8CVA/M
K8JU
K8BBK
WD8JWJ
KD8NJW
KD8RNO
WB8NQW
NC8A
N8VNT
KD5GUU
KC8EKT
KD8VWU
KC8IFW
WD8LEI/M (15)

Mar 13 Traffic: 0

KD8VWU (NCS)
KD8RNO
KG8FH
WD8JWJ
WD8LEI
WB8NQW
KD8NJW
N1RB
KE8CVA
WD8ICP
KE8CUZ (11)

Brain Teasers

1. What spread-spectrum communications technique alters the center frequency of a conventional carrier many times per second in accordance with a pseudo-random list of channels?

a.) frequency hopping
b.) direct sequence
c.) time domain frequency modulation
d.) frequency compandored spread spectrum

2. If the boom of a Yagi antenna is lengthened and the elements are properly retuned, what usually occurs?

a.) the gain increases
b.) the SWR decreases
c.) the front-to-back ratio increases
d.) the gain bandwidth decreases rapidly

3. Which famous Hollywood actress obtained a patent for the invention of spread-spectrum transmission?

a.) Marilyn Monroe
b.) Hedy Lamarr
c.) Fay Wray
d.) Gina Lollobrigida

April Contests

The contest lineup for the month of April is given below. Please note that the WARC bands (60, 30, 17 and 12 m) are never open to contesting.

Apr 7-8	*1400 to 0200 Z*	80 m to 10 m
Mississippi QSO Party		**all modes**
Apr 7-8	*1400 to 2000 Z*	80 m to 10 m
Missouri QSO Party		**all modes**
Apr 7-8	*1500 to 1500 Z*	160 m to 10 m
SP (Poland) DX 'test		**CW SSB**
Apr 14-15	*1400 to 0200 Z*	160 m to 6 m
New Mexico QSO Party		**all modes**
Apr 14-15	*1800 to 1800 Z*	160 m to 10 m
North Dakota QSO Party		**all modes**
Apr 14-15	*1800 to 2359 Z*	160 m to 10 m
Georgia QSO Party		**all modes**
Apr 15	*1800 to 2359 Z*	80 m to 10 m
ARRL Rookie Roundup		**SSB**
Apr 21-22	*1300 to 2200 Z*	160 m to 10 m
Nebraska QSO Party		**all modes**
Apr 21-22	*1600 to 0400 Z*	80 m to 10 m
Michigan QSO Party		**all modes**
Apr 21-22	*1800 to 1800 Z*	160 m to 10 m
Ontario QSO Party		**all modes**
Apr 28-29	*1300 to 1259 Z*	160 m to 10 m
Helvetia (Switzerland) DX 'test		**all modes**
Apr 28-29	*1600 to 2159 Z*	40 m to 10 m
Florida QSO Party		**all modes**

The Most Exciting Era in Amateur Radio

***from e-ham.net*— by Reg, VE7IG**

We are now in one of the most exciting, if not the most exciting, eras in amateur radio. This is due to the successful merging of radio with computer technology (including internet). So many new things are happening all at the same time. Some have been around for a while but are just now seeing usage peaking way up. One of these is IRLP. Most repeater systems have a standalone IRLP node where, as long as the internet is up, you can talk to hams around the world through your local repeater.

Another fairly recent addition is APRS-GPS tracking. Imagine having your mobile location tracked on a map on the internet. This is a lot of fun but also a safety measure for amateurs who routinely travel in wilderness areas, such as repeater technicians. For some time amateurs have been building equipment around VHF radios and GPS receivers for this purpose but recently the major radio amateur equipment companies have offered radios with this application built in.

Computer digital modes have been around for quite a while but recently WSJT-X with its array of new weak signal modes has been developed by radio amateur PHDs at Princeton University physics department, and offered free to the amateur community. One of these, FT8 mode, has become extremely popular almost overnight. Much has been written about FT8 recently but all that is required is a computer with a sound card interface to a ham radio transceiver. With the sun-spot cycle in decline this mode will become increasingly popular.

Then we have the Arduino microcontroller board with a host of amateur radio projects you can easily build and program. Books are available on amateur radio projects using this board and the internet has a lot of others, just Google to see. You can also learn some programming working with this board.

continued---on p. 6

April Hamfests

Apr 29 General Motors ARC. Annual Swap and Shop. UFCW Local 876 Union Hall, Madison Hts., MI . **web:** http://www.gmarc.org/swapinfo

WCARC Weekly Net

Tuesdays at 2100 all year

147.18 MHz 67 Hz PL

Net Control Roster

Apr 3	*WB8NQW*
Apr 10	*N1RB*
Apr 17	*KD8VWU*
Apr 24	*KD8NJW*
May 1	*K8OVO*
May 8	*WB8NQW*

NEXT MEETING

Business Meeting

Monday, April 9th

TIME: 7:30pm

7:00EB

PLACE:

Sheriff's Training Rm

Dunbridge Rd. and

E. Gypsy Lane

Bowling Green, OH

10 meter Net

informal group meets

Sunday

@ 20:30

on 28.335 MHz

Fusion Net

Thursday

@ 19:30

on 442.125 MHz

67 Hz PL on FM

discussion of all things digital

Net Check Ins

Mar 20 Traffic: 0

KD8NJW (NCS)
WD8LEI
K8BBK
KG8FH
WD8JWJ
K8JU
WB8NQW
KD8RNO
N1RB
KE8CVA
KE8CUZ
KC8NKC (12)

Mar 27 Traffic: 0

N1RB (NCS)
KE8CUZ/M
KG8FH
K8JU
KD8NJW
KD8RNO
KE8CVA
KC8IFW
KD8VWU
W8PSK
K8OVO
WB8NQW/M
WD8LEI (13)

Brain Teaser answers: (E) 1-a, 2-a, 3-b

exciting—from p. 5

One of the greatest and most exciting recent developments is the building and programming of remote amateur radio stations, controlled over the internet. Basically there are three kinds of these remotes. One is where you remote your home station so you can operate it away from home. The other is where you establish another station at a different location and operate it remotely. There are also club stations and commercially available remote stations you can pay to use. These are increasingly important for hams who live in antenna restricted areas or older hams living in retirement centers. Building a remote station and programming the controllers and internet routers is not a simple exercise. Some have used computers at the remote location and internet programs such as Ham Radio Deluxe and Skype to facilitate voice transmission and control but there is relatively inexpensive specialized equipment available which does this without needing computers at the remote site or Skype or other third party equipment. Since the internet only serves as control lines and all RF is received and transmitted at the remote site, operating these remote stations is little different from operating right at the remote station itself. For a great example, enter VE6WZ in QRZ.-com and take some virtual trips around Steve's fantastic remote station on the videos he has provided.

DXCC, IOTA and other amateur radio awards have developed internet data bases for recording and application of QSOs/QSLs for these awards. With LoTW you can confirm DXCC and some other award applications quickly and inexpensively if desired without the need to mail envelopes through the postal system. IOTA has recently developed such a system as well. With ever increasing postal costs this amateur radio internet tech-

continued---on p. 7

exciting—from p. 6

nology makes it easier for amateurs to pursue their favorite awards. FT8 users are increasingly jumping on the LoTW bandwagon since FT8 includes an automatic log of the type suited for LoTW uploads, making it so easy!

The last recent addition I will mention here is the tiny inexpensive Raspberry Pi computer with its complement of amateur radio applications. You only have to google "Raspberry Pi amateur radio" to come up with a ton of stuff!

There are of course a lot more examples of the recent growth in the merging of radio and computer/internet technology but this is enough to show what it is and what it means for amateur radio. For one thing it makes amateur radio far more attractive to young people and we sure need more of them in the hobby. Further, it is well known that learning a host of new things as people grow older helps stave off dementia. Retired amateurs should have the time or maybe should make the time to involve themselves in this new technology. It is fun and very rewarding. Many will be prompted to ask, "OK, but is this really ham radio?" Of course it is, and it is amateur radio at its best and finest. Jump in and enjoy the fun. ■

chinese—from p. 1

A Russian orthogonal frequency-division multiplex OFDM 60 signal has been showing up on 14.235 MHz, covering 2.76 kHz. It's said to be located in Moscow. Three Russian OFDM 60 signals were active at the same time on February 13. A Russian F1B signal has been observed on 14.308 MHz, 50 baud, 500 Hz shift, also reported to be in Moscow.

Broadcaster Radio Hargeisa in Somaliland continued to be reported on 7.120 MHz (AM) daily. On 7.175 MHz, Radio Eritrea continues to be jammed daily with white noise transmissions attributed to Radio Ethiopia is still being heard on 14.295 MHz. ■

Morse Code's a Shoe-in

from ARNewsline

Never mind having a good fist to send CW; sometimes what's really needed is a great set of toes. Yes, toes. At the recent Mobile World Congress showcase in Barcelona, Spain, Sierra Wireless unveiled safety boots that are also two-way communications devices. They allow industrial workers who wear them to transmit distress calls by tapping out Morse-like Code with their feet. The footwear, which is outfitted with a SIM card and a wireless module, can also receive messages or reminders sent by the boss. These so-called "smart shoes" emit 80 decibels of sound -- and while they're not the latest in fashion, they're definitely the latest in technology. What that means to the safety-minded wearer is that they do have to gain some fluency in their dots and dashes to make it work. After that, operation is entirely hands-free - except, of course, for putting them on and lacing them up. ■

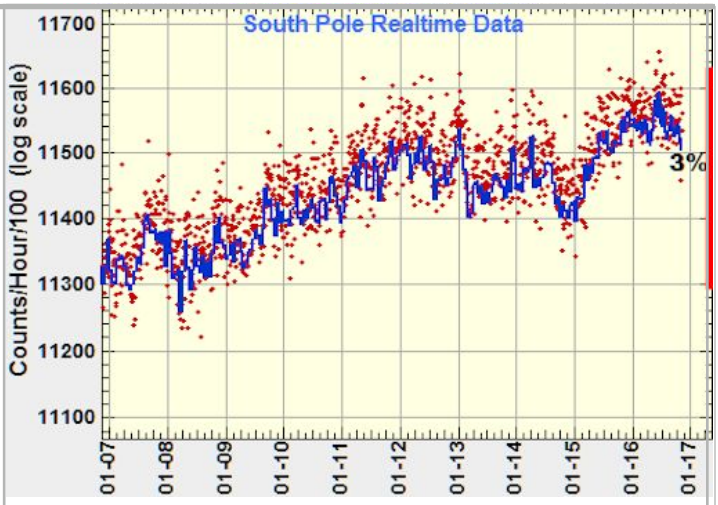
solar—from p. 1

The solar cycle is like a pendulum, swinging back and forth between periods of high and low sunspot number every 11 years. A blank sun is a sign that the pendulum is swinging toward low sunspot numbers. In other words, the Solar Minimum is coming.

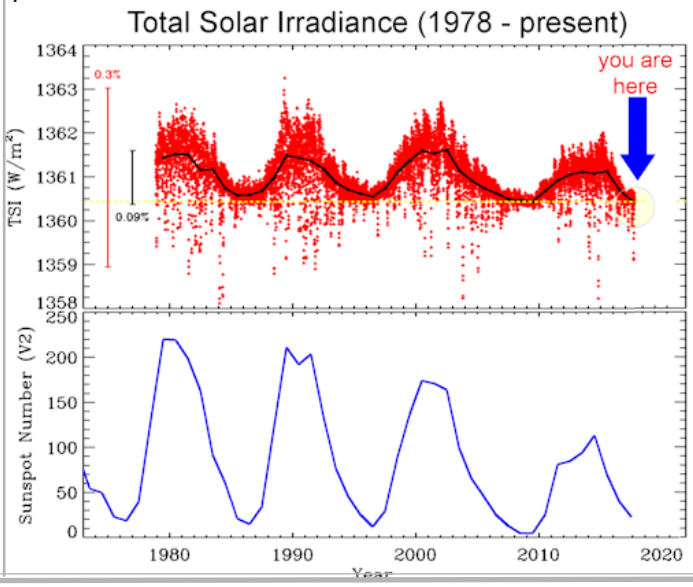
"Forecasters expect the next Solar Minimum to arrive in 2019-2020. Between now and then, there will be lots of spotless suns. At first, the blank stretches will be measured in days; later in weeks and months. When the sunspot cycle reaches its nadir, a whole year could go by without sunspots.

"Solar Minimum is widely misunderstood. Many people think it brings a period of dull quiet. In fact, space weather changes in interesting ways. For instance, as the extreme ultraviolet output of the sun decreases, the upper atmosphere of Earth cools and collapses. This allows space junk to accumulate around our planet. Also, the heliosphere shrinks, bringing interstellar space closer to Earth; galactic cosmic rays penetrate the inner solar system and our atmosphere with relative ease. Meanwhile, geomagnetic storms and auroras will continue -- caused mainly by solar wind streams instead of CMEs. Indeed, the Solar Minimum is coming, but it won't be dull."

A neutron monitor at the South Pole is detecting an upswing in cosmic rays penetrating Earth's atmosphere. Below are the data, courtesy of the University of Delaware's Bartol Research Institute: This is a sign of changing times on the sun. The solar cycle is shifting from Solar Maximum to Solar Minimum. As the sun's magnetic field weakens, cosmic rays are having an easier time penetrating the inner solar system. The Earth is in the cross-hairs of these high-energy particles.



The plot below shows the total solar irradiance (TSI) since 1978 as observed by NASA and European satellites. The sun's electromagnetic output (top frame) waxes and wanes with the sunspot cycle (bottom frame). From these data the Solar minimum is predicted to be in mid-2019. ■



WOOD COUNTY ARC
P.O.BOX 534
BOWLING GREEN, OH
43402