The Parasitic Emission

Volume 36, Number 3 | *Supporting Amateur Radio Activity in Cameron, Clearfield, Elk and Jefferson Counties* | March 2010

On The Air

by Joe Shupienis, W3BC

DO YOU KNOW the difference between a tornado and a funnel cloud? Do you know what to do if you see either of these? Are you Skywarn certified? If you were at the Skywarn training/certification meeting held recently in DuBois, you can answer all three of these questions—and more—in the affirmative!

Twenty-one people, mostly hams, from all four of the Quad Counties and surrounding area took part in the training session presented by the National Weather Service State College Office.

Among those present were the ARES Emergency Coordinators from Jefferson and Elk counties. It was good to see so many friends, both old and new, gathered together in the name of Public Service. A big thank-you goes out to everyone who took the time from their busy schedules to prepare to help their fellow man!

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Much has been said about Amateur Radio emergency communications in the past several years. Much has also been said about digital communications.

For some reason, many hams tune out as soon as the "D-word" is mentioned. I can only guess at what terrifying images the word must conjure up for them. This, in the face of all the articles, demonstrations and on-air discussions which should prove once and for all that DIGITAL MODES ARE EASY!

On the other hand, there are a growing number of local hams who are taking the first, tentative steps to communicate with digital modes. What they have found are three pertinent facts:

1. You don't need to buy a new radio.
2. You don't need expensive computers or software.
3. Once you've done it, you find that it was WAY easier than you thought.

There is a downside, and it's the same one that made CW unpopular. When using digital modes, you are not talking with your mouth and ears. Instead you are using your fingers and eyes.

Some people find this diffficult. I have a good friend who happens to be a blind ham. I helped him learn to copy Morse code in his head. He found he prefers faster code speeds (20-30 wpm) because it's easier to remember what was just sent. But for him, I imagine the other digital modes are pretty much out of the question.

But that may not be entirely true. I suppose he could use "reader" software, which "speaks" the words appearing on his screen. He can touch type quite well, so perhaps even he can use other digi modes.

Some digital modes even offer digital voice communications on VHF, UHF and microwave FM channels. The Icom *D-Star™* system permits digitized, encoded, voice-grade transmission on 144, 440, or 1296 simultaneously with low-speed (900 bps) data on 2 and 440, and a higher, 128 kbps data rate on 1296 MHz. Their proprietary *D-Star™* repeater linking system uses 10GHz microwave links at even higher data rates. Using a pair of Icom *D-Star™* transceivers, you could transfer this entire, 1.8 megabyte newsletter in 2 minutes on 1296, or a little over 4½ hours on 2 meters or 440 MHz.

A new Icom IC-2820 144/440 MHz transceiver is available for $599 and the UT-123 Icom *D-Star™* internal adapter adds-on for $285. An Icom IC-92AD *D-Star™* hand-held dual-band transceiver sells for $529. If you want the faster bandwidth permitted on 1296, the 10-watt Icom IC-ID1 *D-Star™* 1296 mobile transceiver can be had for a mere $999.

I'll see you... *On The Air*

In this issue...

Affiliated Club

Club Connections

The Quad-County Amateur Radio Club

Serving Cameron, Clearfield, Elk and Jefferson Counties since 1975

The March meeting of the Quad-County Amateur Radio Club will take place at the Clearfield 911 Center at 7:30 pm, Friday, March 19th , 2010.

After the meeting, Bryan Simanic, WA3UFN will present an interesting presentation about Digital communication modes.

Minutes of the February Meeting

Jeff Rowles, KA3FHV

The meeting was called to order at 7:34 PM by Doug, W3DWR. The minutes of the last meeting were approved as read. The treasurer's report was approved on a motion by W3KWT and seconded by SM7FYW.

Old business:

Doug talked with Mike, WB3EQW, and we are still waiting for a regular maintenance visit by Center Communications to get the G5RVon the 911 tower. He will also see about getting a computer in the radio room with internet connection and sound card exclusively for our use.

New Business:

A change in location for the monthly club breakfast was bought up by SM7FYW. We are outgrowing the space available at Billy's Burgerland. W3DWR mentioned that Sid's Sub Shop is now doing breakfasts. He and Jeff will have breakfast there Saturday and see if they can accommodate us. Dorothy, N3PUQ, brought up the auto patch bill for discussion. According to W3BC a phone line is required since it is also used for repeater control. It is not legal to use touch tones for that function. A motion to table further discussion was made by K3EDD and seconded by W3KWT so we could get to the evening's program.

A motion to adjourn was made by K3EDD and seconded by W3KWT at 7:53 PM. An excellent program on Skywarn by Bryan, WA3UFN, followed the meeting.

Attendance: KA3FHV, W3KWT, KB3LES, W3DWR, WA3UFN, KB3TAP, W3BC, SM7FYW, KAY, N3PUQ, KB3JE, K3EDD

Behind the Gavel

by Doug Rowles, W3DWR

I WOULD LIKE to take this opportunity to thank Bryan, WA3UFN, for his presentation of Skywarn information to the club at our last meeting. He and Joe, W3BC, are going to give us a presentation on the new digital modes of amateur communications at the March meeting. The plan is to set up an ICOM hf radio and make some connections on the air.

Many of the local 2 meter nets mention somewhere in their preambles "emergency or priority" traffic. Ever wonder what that means? Emergency is used under certain circumstances such as any message having life or death urgency to any person or group of people, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas.

Priority is for important messages having a specific time limit and official messages not covered by the emergency category.

We have a new site for our monthly breakfast. On the 20th, Jeff and I ate breakfast at Sid's Super Subs. At the last club meeting we discussed the change. I asked the manager about reserving space for us. All I have to do is call the afternoon before and they will set up a table for us in the upstairs area. Their menu is quite large. The scrambled eggs are fluffy, and they have eight varieties of pancakes: blueberry, strawberry, pecan, banana, buckwheat, etc. The prices are low also (2 eggs, sausage patties, buttermilk biscuit and coffee - $3.10 with 10% senior discount.

Net Schedules

QCARC	1900 Sunday	**147.315**
Clfd Co ARES	1945 Sunday	**147.315** *T 173.8*
ECARA	2000 Sunday	**147.000**
PAARC	1930 Monday	**147.390** *T 173.8*
Jefferson Co.	2000 Monday	**147.105** *T 173.8*

Club Connections

Punxsutawney Area Amateur Radio Club

Serving Punxsutawney and Jefferson County

The March meeting of the PAARC will be held at the Presbyterian Church, Findley and Union St, Punxsutawney at 7:00 pm, Tuesday March 9th.

Free coffee and donuts will be served after the meeting.

Elk County Amateur Radio Association

Serving Elk and Cameron Counties

The March meeting of the ECARA will be held at the Elk County 911 Center, US 219 south of Ridgway on Sunday, March 21st at 1:30 p.m.

Free coffee and donuts will be served after the meeting.

Shorts

The Quad-County Amateur Radio Club held its first meeting on April 17, 1975. This year, the club celebrates its 35th Anniversary. If you have any photos or stories from the early days, please contact your editor, Joe Shupienis, W3BC at:

joe@parasiticemission.com

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If you have photos or stories of interest to hams in our area, please share them with us. Send them to:

submit@parasiticemission.com

If you have questions or comments for the editor, please send them to:

W3BC@parasiticemission.com

Remember the new deadline: The last Monday of the month before publication.

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You don't have to be a "professional" writer to write for *The Parasitic Emission.* We will print whatever you send us. We will be happy to correct and polish your article if you so request.

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If you know of someone who might like to receive a copy, please send their email address to subscribe@parasiticemission.com and we will add them to our list.

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AMATEUR RADIO GPS MYSTERY TOUR. Every month, we will present a set of GPS coordinates that are somehow related to amateur radio. Some will be immediately obvious, while others will require some head-scratching.

Last month's coordinates were 41° 36' 07" N, 81° 28' 45" W, which is the Amateur Electronic Supply store in Wickliffe, Ohio near Cleveland.

This month is another easy one...

March ARGMT Coordinates:

41° 42' 53" N, 72° 43' 38" W

Hint: If you go there, take a copy of your amateur radio license, and you may get to do something special!

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Paul W3PRL and John N3SPW recently purchased *D-STAR™* capable amateur radios and have started experimenting with the digital voice operating mode. The radios are Icom ID-880H dual band rigs.

On the evening of March 2nd simplex digital voice experiments resulted in a successful QSO between W3PRL in Grampian and N3SPW in Kylertown, Clearfield County. This is thought to be the first *D-STAR™* conversation between Clearfield County amateurs.

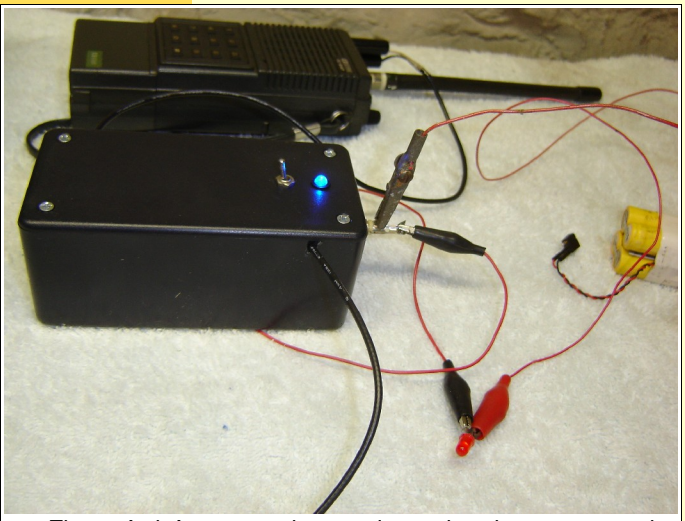
Very shortly experiments with the low-speed digital data mode will be conducted. One application of the low-speed data is keyboard to keyboard chat applications. This will likely be one of the first applications to be experimented with.

Building a DTMF Controlled Switch

By Pete Carr WW3O

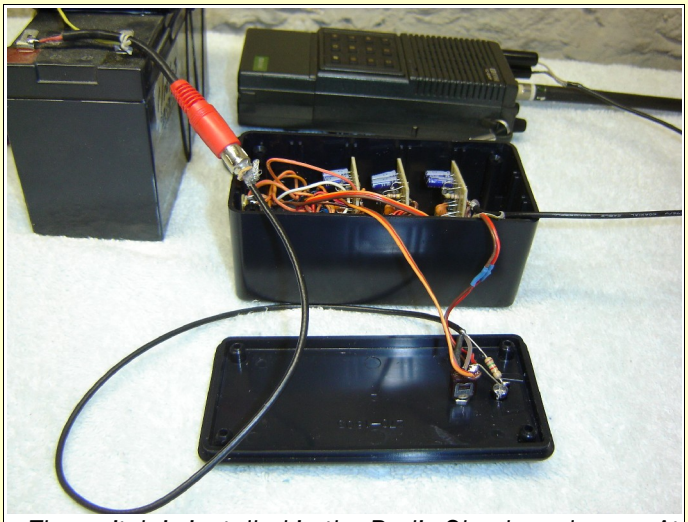
A WHILE BACK there was some discussion in the Elk County Amateur Radio Club about adding NOAA Weather Radio to the repeater. There was a receiver that had tone alert where a tone from NOAA would turn on the audio output of the receiver. The receiver was quiet the rest of the time and only weather alerts would be heard on the repeater. That was an interesting concept and well worth doing. However, I wondered if it would be possible to turn on the NOAA Weather receiver remotely to check the forecast.

To turn on the NOAA Weather receiver remotely I chose to use Dual Tone Multi-frequency (DTMF tones) as the switching signals. As you may remember, several people who use the repeaters have voices that momentarily shut down the audio of the repeater transmitter. I was concerned that similar audio might false-trip the NOAA Weather receiver output. For that reason I wanted to use a pair of tones to turn on the NOAA audio. If the NOAA audio was turned off accidentally that was no big thing. For that reason I used single DTMF tone to turn the NOAA audio off.



The switch is powered up and tone has been sent to the IC2AT transceiver. The power-on LED on the enclosure is lit and a 1/8 inch diameter plug is used to test the output. The switch output is closed so the red LED at the right is lit.

The tone decoders are kits from Ramsey Kits and are both small and inexpensive. They use a 20-turn pot to set the decoded tone frequency. Each kit is set to a different tone. Pairs of tones can be set to match a DTMF tone button on a Ham transceiver. When the tone button is pressed , a specific pair of tones are transmitted to the receiver controlling the tone decoders and switch. In the ancient and honorable tradition of repeaters, I used the STAR (*) button to activate the switch. I used the TWO (2) button to open the switch. So The result is that it's * up and 2 down. Each kit comes with a manual that has a frequency matrix in the back. By using this matrix you can select difference tone pairs if you desire.



The switch is installed in the Radio Shack enclosure. At left is a 7 amp 12 volt gel cell used for power. A RCA phone plug attached to RG-174 coax connects the switch to the gel cell. At rear is the ICON IC2AT transceiver with the two audio plugs connecting to the switch. In the foreground the lid has the on-off switch and power-on indicator LED. A 1200 ohm resistor drops the 12 volts to about 4.5 to power the LED.

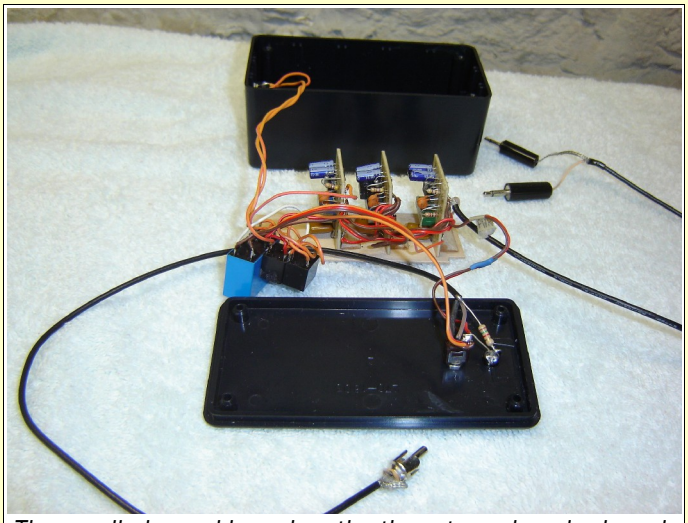
Each tone decoder board has an audio input, power input and the output. The output is a terminal that grounds an outboard relay coil. There are three relays used in the entire circuit. Two relays work together to close contacts and turn on the output of the switch. The third relay interrupts the “hold”or “latch” feature of the switch and turns it off. That part of the circuit took considerable time to correctly wire up.

The entire circuit runs on 12 volts at very low current. Power can be supplied from any fairly quiet 12 volt source from a battery to the 12 volts in a car or truck. Most repeaters run on 12 volts from big power supplies. These may not be as quiet as needed and should be suspected if switching is erratic.

The audio input can come from the earphone jack on a transceiver or receiver. The volume control of the receiver sets the audio input to the tone decoder. My tests show that a comfortable listening volume from the transceiver speaker is a good volume for feeding the decoder. These tests show a wide range of acceptable volume levels so exact settings are not a problem.

Two of the three relays are the same, Radio Shack P/N 275-0241. These are for one * tone and one 2 tone. The third relay is P/N 275-249 and is used for the other * tone. Latching of the switch in the on position is done from the second set of relay contacts of the 275-249 relay. The interrupt or reset of the switch is done from the 2 tone relay. All this information is evident if you follow the circuit wiring in the two sheets of diagrams. The

idea is that the * tone 275-249 relay pulls when the * tone is received. This connects ground to the coils of the two * tone relays holding them pulled. This completes the switched output and holds it. When the 2 tone is received it pulls the 2 relay which opens the latch feature of the 275-249 relay and drops both * tone relays.



The small plywood base has the three tone decoder boards glued to it. The right end has room to attach the three relays. I used a small drop of CA (instant) glue to hold all three relays together. Once wired and tested they are then glued to the plywood. All the external connections to power and audio use RG-174 coax. I had some and it's easy to use but you can use audio cable or plain wire if you choose.

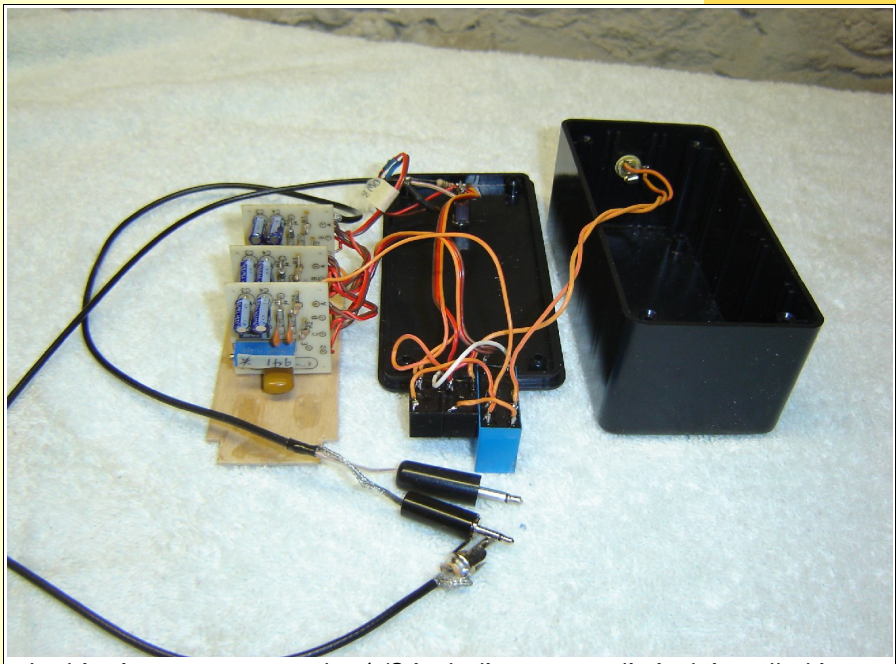
I also used a Radio Shack plastic enclosure to house the DTMF switch. Since the three tone boards were glued to a piece of 1/32nd inch thick plywood I bought an enclosure that would hold everything. If you have a particular use in mind, you might check the variety of these enclosures for one that best fits your needs.

I tried testing the switching action while there was considerable background noise in the room, such as radios playing and people talking. I couldn't false trip the switch. Similarly, I tried swamping the receiver by using high power on the tone transmitter very close to the receiver. There are a lot of high power transmitters housed with the Ham repeater so this could have been a problem. Again, there was no sign of false tripping. I also tried adjacent tones to see how sharp the tone decoders were. There was no false tripping indications in this case either.

Just about every automobile produced these days has a key-fob remote that locks the doors or opens the trunk. These are limited use, low power coded transmitters. If the average Ham wanted to control something else in the vehicle, the key fob would not be capable of this extra use. In addition, the range of key fobs is rather short. If the DTMF controlled switch were installed in the vehicle it could control radios, external speakers or cross-band features from considerably greater distance. If a hi-value circuit was being switched if is possible to add a second layer of false trip protection. If a receiver, that had a receive tone squelch feature installed was used to feed the DTMF switch, it would only respond to the sub-audible tone sent from the transmitter. This, combined with the “secret” tone pair selected to activate the switch, would make the circuit extremely secure.

I used a very elderly ICOM IC-2AT hand held transceiver as the DTMF switch audio source. The earphone jack on that rig is part of the remote speaker/mic jacks. The grounds of the TX and RX are separate and required two plugs for the audio output circuit to the DTMF switch. There may be similar strange wiring problems with the rig you use to feed audio to the DTMF switch.

Ebay and QTH.com regularly list older two meter or similar transceivers for sale. Ramsey also sells kits for receivers that would be very adequate for this purpose. Most all of them can be powered from 12 volts. Whatever receiver is used, you should be able to power it from 12 volts so that the switch and transceiver are powered from the same source.



In this view you can see the 1/8 inch diameter audio jack installed in one end of the enclosure. This is the switched output and two twisted wires that connect it to the relays. I used paper tape on top of each 20-turn blue colored pot to remind me of it's tone and digit.

The DTMF switch is a simple and reliable circuit that is small and low power. It will switch several amps of current and has no critical issues. It's uses are limited only by the imagination of the user so have a good time with it.

SkyWarn Training - Retrospect

de WA3UFN

AS IT IS OFTEN SAID about a highly enjoyed event, “if you weren't there, you missed it.” This was the case with the recent SkyWarn program held March 10.

Twenty-one folks from Clearfield, Cameron, Elk, Indiana and Jefferson Counties enjoyed an informative and interesting program on severe weather presented by Dave Ondrejik, K3NWS, the Warning Coordination Meteorologist from the National Weather Service in State College.

Even setting aside the all too real issue of saving a life, those in attendance received an interesting education about the weather that affects their daily lives. There were a number in attendance that have been to other SkyWarn programs and realize the importance of reviewing the material. To them “been there, done that” doesn't mean that much.

Many of the slides in the program dealt with several recent severe weather emergencies which took place in and around Clearfield County. The information presented will help protect the lives of those who attended the program and participation as a spotter may even touch people who they don't even know. We deal with weather daily and sometimes the weather turns bad, so bad that if an incorrect decision is made it could mean the difference of being around to talk about it - or not!

Dave cleared up several misconceptions about weather, and some common misinformation about weather issues was pointed out and corrected. Several slides depicted what could happen if the misinformation was followed. Even though the information sounds good, it may be just the opposite! Basically, it pays to get information from the proper source.

One of the side benefits of the program was to see a few of the hams that I haven't seen for quite a while as well as those I've seen recently! You should note that I've mentioned “folks” throughout the article and not just hams, as SkyWarn is not only amateur radio oriented. I was glad to see several non-hams attending the program. With a program of this nature, who knows? Some of the non-amateurs who attended may decide to become a little more involved and get their license!

Getting active in SkyWarn is one of the facets of amateur radio. When you're involved in your hobby to the extent the folks who attended this SkyWarn program are, you get more out of the hobby. If you happen to hold a leadership position, all the more reason to attend and participate in a program of this nature. You know, it's the “lead by example” concept that great leaders believe in, and some of those leaders attended. I guess it's possible that's one of the reasons the slogan “get with the program” originated! Seems to me it applies.

March 2010

Regional Amateur Radio Activities

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28 ☐7:00pm» QCARC 2-meter FM Net ☐7:45pm» Clearfield County ARES Net ☐8:00pm» Elk Co ARA Net	01 ☐7:30pm» Punxsutawney ARC 2 Meter Net ☐8:00pm> Jefferson County 2M net	02	03	04	05 ☐7:00pm» International DX Contest – Phone	06 ☐12:00am» International DX Contest – Phone (cont.) ☐9:00pm» Philipsburg ARA Net
07 ☐12:00am» International DX Contest – Phone (cont.) ☐7:00pm» QCARC 2-meter FM Net ☐7:45pm» Clearfield County ARES Net ☐8:00pm» Elk Co ARA Net	08 ☐7:30pm» Punxsutawney ARC 2 Meter Net ☐8:00pm> Jefferson County 2M net	09 ☐7:00pm» Punxsutawney Area ARC Meeting	10	11	12	13 ☐9:30am» QCARC Breakfast ☐9:00pm» Philipsburg ARA Net
14 ☐7:00pm» QCARC 2-meter FM Net ☐7:45pm» Clearfield County ARES Net ☐8:00pm» Elk Co ARA Net	15 ☐7:30pm» Punxsutawney ARC 2 Meter Net ☐8:00pm> Jefferson County 2M net	16	17	18	19 ☐7:30pm» QCARC Meeting	20 ☐9:00pm» Philipsburg ARA Net
21 ☐1:30pm» Elk County ARA Meeting ☐7:00pm» QCARC 2-meter FM Net ☐7:45pm» Clearfield County ARES Net ☐8:00pm» Elk Co ARA Net	22 ☐7:30pm» Punxsutawney ARC 2 Meter Net ☐8:00pm> Jefferson County 2M net	23	24	25	26	27 ☐9:00pm» Philipsburg ARA Net
28 ☐7:00pm» QCARC 2-meter FM Net ☐7:45pm» Clearfield County ARES Net ☐8:00pm» Elk Co ARA Net	29 ☐7:30pm» Punxsutawney ARC 2 Meter Net ☐8:00pm> Jefferson County 2M net Parasitic Emission Submission deadline	30	31	1	2	3 ☐9:00pm» Philipsburg ARA Net

SUBMISSION DEADLINE IS THE LAST MONDAY OF THE PRECEDING MONTH.

submit@parasiticemission.com

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