



# PCARA Update



Volume 6, Issue 4

Peekskill / Cortlandt Amateur Radio Association Inc.

April 2005

## Radio raffle

It's that time of year again! Tickets for the PCARA Annual Raffle are now on sale. The prize this year is an IC-2100H 2 meter mobile (<http://www.icomamerica.com/brochures/ic-2100h.pdf>).

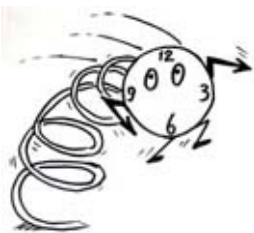
Tickets are \$5.00 each, with a limit of 100 tickets to be sold. The winner will be drawn June 26, 2005 at the conclusion of Field Day. Tickets will be on sale at the April, May, and June meetings and from Malcolm, NM9J (or by mail via P.O. Box 146).



IC-2100H

I've just finished filling out the paperwork to apply for use of Blue Mountain Middle School as the site for the PCARA 5<sup>th</sup> Anniversary Special Event Station to be held on May 14, 2005. This year we will be commemorating the 100<sup>th</sup> anniversary of the completion of the Croton Dam and we've been assigned the callsign W2D. As soon as we receive permission, it will be posted on the website.

Just a reminder that a foxhunt is still scheduled for Saturday, June, 4, 2005 at 3:00 PM. The hunt will begin at the Beach Shopping Center with the foxes being played by Ray, W2CH and Marylyn, KC2NKU. After the hunt, we will be getting together at a local restaurant. This would be a great way to introduce your friends to amateur radio! Offer to bring them along.



*Don't be late! PCARA's 3:00 p.m. meeting on Sunday April 3 is the same day that clocks spring forward.*

Hope to see each of you at the April 3<sup>rd</sup> meeting at Hudson Valley Hospital Center.

– 73 de Greg, KB2CQE

## Mt Beacon Hamfest

PCARA has arranged a club table at the Mt Beacon Hamfest, scheduled for Sunday April 10 at Tymor Park, LaGrangeville, NY. Bring along your previously-owned amateur radio equipment and put it up for sale at the

club table. If your equipment is sold, a small contribution to PCARA funds would be appreciated.

## Skywarn Training

Our neighbors at Putnam Emergency and Amateur Repeater League (PEARL) are sponsoring a NOAA/NWS Basic Skywarn Spotter Class on April 21. Skywarn is a nationwide network of volunteer weather spotters who report hazardous weather to local National Weather Service (NWS) offices. Amateur radio operators and weather observers are ideally equipped to contribute to this program. Skywarn Volunteers are trained by NWS personnel to recognize features associated with hazardous weather.



Location of the PEARL class is the brand new Putnam County Bureau of Emergency Services Training & Operations Center. The TOPS Center is located at the Donald B. Smith Government Campus, 112 Old Route 6, Carmel NY. The class runs from 7:00 - 9:00 p.m. and details are available at <http://www.erh.noaa.gov/er/okx/Skywarn/spottertraining.html#apr21-putnam>

## Contents

*Home and away issue... thanks to our contributors!*

Radio raffle	1
Skywarn training	1
Adventures in DXing - N2KZ	2
Travels with HRH - W2CH	3
More XM - NM9J	4
Quiet as a mouse - NM9J	6

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# Adventures in DXing

**It's all in the family! – N2KZ**

Looking for the heart of the family? You'll find it at the Mecca of the Mouse: Walt Disney World in Orlando, Florida. The Family Radio Service, and its licensed forerunner, The General Mobile Radio Service, are alive and well and everywhere. Walk around The Magic Kingdom, Disney/MGM Studios, The Animal Kingdom or The Epcot Center and you'll think you have invaded a Motorola user's convention! You'll see the little transceivers on belts and in shirt or jacket pockets everywhere you go.

Many people were using headset/mic combinations, some apparently with VOX. I even noticed some people armed with external battery packs for their FRS/GMRS HTs. An army of unlicensed UHF commandos had massed for maneuvers!

FRS Channel 1, at 462.5625 MHz, is the center of action. You'll find it reminiscent of CB Channel 19 from decades ago. FRS Channel 1 benefits from FM's capture effect. No din of heterodynes can be heard, but you'll hear lots of snurdles from people screaming under other people. What a delight to listen to!

The FRS channels and additional GMRS channels are filled to the brim with layers and layers of brief messages all saying "Where are you?" There is no shortage of kid-generated sound effects. Disney tells everyone that their Animal Kingdom is "nahtazu" in silly Swahili. I have news for them: The real zoo is on the radio! It's a nut house, but a useful one, I suppose. It's also obvious that the casual users of these inexpensive HTs are not acquainted with the concept of PL tones. You'll be lucky if you hear any PL tones in use while monitoring these FRS and GMRS frequencies.

Orlando's VHF and UHF repeaters are nearly



*Disney World's Animal Kingdom*

mute. During my six days at the Disney Port Orleans resort, I scanned for ages and did not hear a peep on 2 meters or 70 cm. My flight home was cancelled, so I had four hours to kill at the Orlando International Airport. I tried a couple of local repeaters and discovered one that I could hit from Gate 92. Using Voice Over I/P via the Internet, I had a nice QSO with



*Temple of Doom at Disney/MGM Studios.*

Malcolm, NM9J, who was back home in Cortlandt Manor. I linked to Malcolm via IRLP node 4248 provided by WA4EGG/R on 444.275 MHz with a 103.5 PL. Using just a handheld HT, I could easily connect with PCARA's IRLP node 4214, and chat up Malcolm with the same clarity I'd enjoy just sitting at home in New York. Cheers to Malcolm for maintaining our IRLP service for our entertainment and enjoyment!

There are interesting antennas all over Disney World, especially at the Epcot Center resort. I saw two large C-band uplink dishes that were removed from active service and now sit in repose to add an extraterrestrial feel to one of the exhibits. At the GM Test Track ride, I noticed a really nice parabolic reflector that looked like an expensive antenna used for broadcast studio-transmitter links. This beauty seemed to be a prop as well. What a waste! I wanted to take it home with me as a souvenir! There were some interesting Yagis and enclosed log periodic designs used for Sennheiser wireless UHF microphones seen at several exhibits including the Indiana Jones and the Temple of Doom show at Disney/MGM Studios. Also at Disney/MGM Studios, check out "Sounds Dangerous," starring Drew Carey on the ABC Sound Studio set. It's a full-fledged radio studio providing zany comedy several times daily.



*Antennas used for Sennheiser wireless microphones.*



## Up In the Sky

Technology is flying forward aboard commercial aircraft. On a flight on Delta's sister carrier called Song, I was amazed to see 24 channels of Dish Network TV, dozens of digital music CDs, interactive trivia games, ten on-demand movies and a "channel" detailing the exact position of your aircraft in flight. Watching the "My Flight" channel, several screens alternated showing a regional and national view of your plane's current location, your distance traveled, outside wind speed and temperature and altitude. Amazing detail could be seen looking at the maps showing topography and even water depths where shores met land. The service was bilingual, alternating between Spanish and English. You could easily do a double-take glancing at a map displaying places like Nueva Jersey, Carolina del Norte and San Luis. (Why was the Spanish rendition of the flight's statistics in metric measure?) You could even pay for your movie by swiping a credit card through a slot on your personal flat screen monitor. Amazing!



*Song's "My Flight" screen displays current aircraft position.*

While stuck on a tarmac for hours, I noticed the Dish Network service go to squares and black out waiting for severe thunderstorms to pass by. In-flight reception was flawless. The ability to resolve digital TV from a geosynchronous satellite sitting in a moving plane was an amazing demonstration of the robust nature of digital television transmission. Will the next big step be in-flight Internet access? [*Ja, mit Lufthansa! See [link](#). - Ed.*]

## Dream of the Dam

My next big adventure in DXing may be at the upcoming PCARA special event station commemorating the 100th anniversary of the famous Croton Dam and the 5th anniversary of our famous club on May 14th. In the next couple of weeks I hope to be constructing a 20 meter dipole antenna for this event and Field Day. I am anxious to have another try at battery powered QRP CW operation in the woods similar to the shenanigans I enjoyed in Michigan last summer. It is so much fun to work the world from a tiny transmitter powered by AA batteries. Come to the event and I'll show you how!

Until next month, 73 and good DX!

- de Karl N2KZ "The Old Goat"



## Travels with HRH -W2CH

Last week we returned from our cruise on the *Queen Mary 2*. The QM 2 was late in arriving in New York due to delays from the storm which gave us spring snow on March 23.



*Queen Mary 2, the world's largest, longest, tallest ocean liner, pictured by Ray W2CH from the "tender", on the way to the passenger dock at Philipsburg, Sint Maarten.*

We left New York City on Wednesday afternoon, March 9, and cruised south Thursday and Friday to our first port of call at Charlotte Amalie, St. Thomas, U.S. Virgin Islands, arriving on Saturday March 12. The *Queen Mary 2* is too large to dock in the natural harbor, so we anchored off-shore and used tenders to go into port. Actually, that was pretty good, because if we had docked in the harbor, it would have been a distance to walk or drive into town.



*Sunset from the QM2 leaving Charlotte Amalie, St. Thomas.*

I did manage to use my HT to try the repeaters at St. Thomas. I worked another ham on vacation on St. Croix, U.S. Virgin Islands. The other ports we visited were not in the U.S., so I did not operate there. On Sunday we docked at Basseterre, St. Kitts. St. Kitts and

its companion island of Nevis are part of the British Commonwealth. There were no other cruise ships docked at Basseterre. Most stores were closed on Sunday, and there are not as many shops in St. Kitts as



*St. Kitts Scenic Railway, "The Sugar Train", was built between 1912 and 1926 to deliver sugar cane from the fields to the sugar mill in Basseterre. The railway now provides a fascinating way to see the island.*

there are on the islands of St. Thomas and St. Martin.

We took the tour on the Sugar Cane Train, which was started a couple of years ago on tracks originally used for the sugar plantations. The tour went around most of St. Kitts and lasted several hours, with part of the tour by bus. I saw some men putting up a small yagi antenna on a pole — it looked like it was for high-band VHF.

After we left St. Kitts, the next port on Monday was Philipsburg, on the Dutch side of the island, known as Sint Maarten. The other side of the island is French. Once again we had to anchor off-shore and take the



*Panel aboard Cunard's Queen Mary 2 commemorates the use of wireless and the Marconi Company's distress signal CQD to summon assistance after the Titanic struck an iceberg. The rescue ship Carpathia was also a Cunard liner.*

tender into town. There were five other cruise ships in port with us. It was certainly busy on Front Street with all the tourists shopping there. We had been to St. Martin on a previous cruise and Ray had been there in 1984 at the Dawn Beach Resort, visiting the French side of the island and its capital Marigot.

After we left Saint Martin, we cruised smoothly back to NYC. It must be said that the *Queen Mary 2* is a large and exciting ship, with much history behind it, both from the original *Queen Mary*, and from the Cunard Line which dates back to 1840.

- Ray, W2CH and Marylyn KC2NKU

## More XM

With two recent articles from Karl, N2KZ featuring XM Satellite Radio, you might think there was little more to be said on the subject. But your editor has also been investigating this new broadcast service and has a few thoughts to add.



### Why bother?

The first reaction of many people to Satellite Radio is:

why bother? There is plenty of choice on the AM and FM broadcast bands and it's all free. So why pay \$9.99 per month — recently increased to \$12.95 per month — for XM Radio? In my case, the answer was — BBC World Service. During the winter months of a declining sun spot cycle, reception of BBC World Service on short wave has been going from bad to worse. The evening frequency of 5975 kHz has been particularly weak and watery of late. Recent cutbacks, which removed BBC relays

through Sackville, Canada have left few frequency alternatives. If you are a night owl, it is still possible to tune to WNYE on 91.5 MHz and hear World Service in the wee hours. But the NYC Education station has been adding its own "commercial spots" lately and if you want to listen after 6:30 a.m., you're out of luck.

**How's the quality?** Switching from the fading and phase distortion of World Service on short wave to the same station on XM Satellite Radio is — initially — a revelation. My first impression was that audio quality is just as good as for an FM broadcast station, received at good signal strength. But listening more carefully reveals some minor problems.

First of all, the digital satellite signal is delayed a full 15 seconds compared with short wave sources and terrestrial FM relays. This is a combination of round-trip time to the geostationary satellite, plus digital





compression and decompression times, plus the delay that is part of XM's two-satellite delivery design. Just remember when setting your timepiece to the BBC's Greenwich Time Signal, that the pips on XM are around 15 seconds later than reality.

Next, I'm sure that I can detect some odd sounds in the sibilants – those high-pitched components of speech that make certain words more easily understood when transmitted properly. I'm particularly thinking of the "S" sounds in "She sells sea shells" etc. To me, XM Radio sometimes sounds like one of those early speech synthesizers where the "S" sounds were produced with short bursts from a white-noise generator.

Finally, I have the impression that whenever audio bandwidth can be reduced, XM Radio reduces it! If you hear an interview between the presenter in a warm studio with full range hi-fi sound and some poor reporter out in the field on a crackly cell-phone, the phone part of the conversation sometimes sounds far worse than it should. Here's my suggested explanation... XM Satellite Radio's technology combines many audio sources and multiplexes them into two digital bit streams. Each audio source will need a different amount of bandwidth at different times as its content varies, but on average the total bandwidth of the entire bitstream will be roughly constant. I suspect that XM is squeezing as much bandwidth out of the system as possible — by compressing low-fi signals the same way cell-phone companies do. The result is an occasional otherworldly, phase-distorted quality to telephone speech on some channels.

**What's your choice?** XM Satellite Radio transmits 68 music channels plus 36 news and talk channels. The range of material covered can be quite breathtaking... and it's fascinating to find out what other listeners' favorites are. Apart from World Service on channel 131, my SkyFi2 receiver spends time on channels 6, 46, 73, 133 and 165. Channel 165, "Ask" features "Coast to Coast AM" with hosts George Noory on weeknights and Art Bell, W6OBB on weekends. The show focuses on supernatural and extraterrestrial topics, ranging from aliens and UFOs to ghosties, ghoulies and long-legged beasties like Bigfoot, plus the occasional mention of high tech and amateur radio. The live broadcast takes place from 1:00-6:00 a.m. Eastern time, audible here most evenings on WABC 770 kHz or WHAS (Louisville KY) on 840 kHz. "Ask" carries the broadcast live and gives you a second chance to listen during daylight — when the monsters are not quite so scary and some of the the telephone callers sound even less plausible.

**Radio NM9J on 107.7 FM:** My SkyFi2 XM receiver does double duty. The line level AF output is connected directly to the auxiliary input of my stereo receiver through phono connectors, for best quality. But I also have the XM receiver's FM modulator switched

on. This lets me listen to XM in other rooms on an ordinary FM radio. The frequency I chose was 107.7 MHz – a channel that is relatively free of other stations in my part of the world.

The FM modulator provides sufficient power output to work well inside the house, but the signal strength dies away at the end of the yard. The RF output on 107.7 MHz appears to be coupled to the outer conductor of the 20 foot coaxial cable feeding the XM high gain antenna. Unspooling the antenna cable and draping it into a large loop improves the VHF-FM signal strength.

– NM9J



*XM High-gain Home Antenna has 20 foot long coaxial cable.*

## PCARA Annual Raffle

### Tickets now on sale!

#### 1st Prize:

Icom-2100H - 2 meter mobile transceiver



55 watt transmit,  
large tuning dial,  
rugged aluminum chassis.

Perfect for beginning Techs and great for all Hams

Tickets are \$5.00 donation each. Limit of 100 tickets sold.

Proceeds to help offset our liability insurance premiums and keep our dues low.

**Drawing to be held June 26, 2005  
at Field Day 2005**

# Quiet as a mouse



Electronic developments have brought many advances to amateur radio – but those same developments have been raising the RF interference level around the typical amateur shack. Here are some hints for

keeping that RFI noise level down.

The first thing to remember is that electrical sparks are likely to be an intense source of noise. Remember how Marconi crossed the Atlantic with a giant spark transmitter in Cornwall? Well the same could be true — on a smaller scale — if you have anything in the house continuously generating sparks. Worn switches, worn electrical outlets and loose wiring are possible causes, especially when connected to a long length of house wire acting as the antenna.

**Motoring on:** Some items generate sparks as part of their design — for example, DC or universal motors with a **commutator** generate tiny sparks as the commutator's metal segments pass under the carbon brushes. If the brushes are worn, the sparks can be a lot larger. This type of motor is likely to be found in power tools, hairdryers and food mixers. Fortunately, their use is normally limited to short periods of time... so the quickest solution is “turn it off!” Otherwise you may have to replace the carbon brushes or fit a filter.

**Dim bulb:** One of the worst inventions for generating lots of noise is the **thyristor**, or silicon controlled rectifier (SCR). Try to keep thyristor controls out of the house if you can. Most light dimmers employ a thyristor or triac circuit that generates large amounts of noise. There is some variation in the amount of noise developed by different dimmer designs, but the best solution in my view is to replace any dimmer with a simple on/off switch.

**Not a fan:** Electric fans are not usually a problem — induction motors are electrically quiet, and designs with a *switched* speed control are usually problem-free. But beware of fans with a continuous speed control — the circuitry will use a thyristor or triac to generate copious amounts of noise at anything less than full speed.

**Let there be light:** Not long ago, there was little need to worry about light fittings as a source of electrical noise. Thomas Edison's glowing filaments

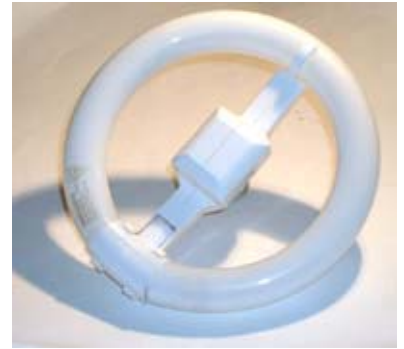
have been electrically quiet for more than a century... but today they have been joined by a variety of other light sources.

Traditional fluorescent fittings are not normally a problem... shop lights in a grounded metal enclosure and slimline fluorescents where the ballast choke is housed in a metal case produce little or no noise once they have started. In fact, when you are choosing a fluorescent lamp, the weight of a choke ballast can be a helpful clue as to the type.

Compact fluorescent lamps *without* an iron-core ballast are another matter. These small, lightweight designs might be excellent in terms of energy efficiency, but they can be a terrible source of noise. The electronic ballast usually includes an inverter running in the 20kHz – 60kHz range. The inverter's harmonics, plus wideband hash can spread far and wide.

The FCC sets limits for lighting applications in Title 47 CFR, Part 18 (Industrial, Scientific and Medical Equipment), subpart C for conducted frequencies from 450 kHz to 30 MHz and for radiated frequencies from 30 MHz to 1 GHz. The limits for consumer equipment are lower than for non-consumer equipment. Despite these rules, lamps on sale today can cause plenty of interference to AM radio, to reception of WWVB atomic clock signals on 60 kHz and to infrared controls as well as to amateur radio. If you must buy this type of lamp, my advice is to pick a well-known manufacturer, check the package for FCC compliance then watch for any warnings to keep the lamp away from marine or other radio equipment. Buy one lamp first then see if you can live with its level of RFI.

The good news is that ever-more efficient 120V light bulbs are becoming available, including models based on white-light LEDs. At present the prices are astronomical, but I'm sure they will come down. See for example: <http://www.theledlight.com> or <http://>



*Fluorescent lamps with an iron-core choke ballast produce little noise once they have started. This example is a Philips Circlite.*



*Thyristor-based light dimmers can generate lots of noise at MF and HF. They are best avoided.*



*An electric fan with continuously variable speed control can be a terrible source of noise.*



Compact fluorescent lamps can be a source of interference thanks to the electronic ballast.

www.lumileds.com . And next time you are stopped at a traffic signal, check whether it contains red, yellow and green LED lamps. If the green light comes on suddenly, without any warm-up time, then it's LED-based.

**Power source:**

Another device that is best avoided in the interests of a quiet life is the switched mode power supply. Sometimes these items are inevitable — there is a switched mode PSU in just about every PC, and most notebook computers come with a switched-mode AC adapter. Any time you have a choice of a traditional linear power supply over a switched mode unit, I would pick the traditional design, especially when there are antennas

located nearby. Just try running an AM radio off a switched mode power supply — definitely not recommended. And some of those 120V LED lamps mentioned in the previous paragraph contain a multi-voltage switched mode power supply – ugh!

**Computer QRM:** If you experience a lot of noise on the HF bands while your PC is switched on, bear in mind that the **monitor** attached to the computer can be a worse offender than the PC itself. The timebase harmonics plus the high frequency video signals applied to the CRT produce plenty of RF on unwanted frequencies. If you have a choice, pick an LCD display rather than a monitor based on a cathode ray tube. A notebook PC with the LCD display built-in can be the best combination for minimizing noise in the radio room.

**Find your foe:**

Despite taking all the obvious precautions, you may still come across noise that affects reception on the MF, HF and VHF bands. Here are some suggestions for tracking down the source.

First of all, ask yourself



Switched mode power supplies can be a source of interference, especially when antennas are nearby.

is the noise related to operation of other devices around the house? Is it only present when the boiler or furnace is running? Does it go away if you switch off a power strip, lamp or timer?

Many electronic devices in the modern home are left plugged in and receiving power continuously. Think of the VCR, satellite/cable TV receiver, cable modem, microwave oven or answering machine. Any one of these could be a source of continuous interference. You may be able to pinpoint the source simply by turning off electrical circuits in the house one at a time.

If you are still having difficulty locating a noise source, try using tools you probably have to hand. A portable AM radio can be remarkably helpful in tracking down noise. The ferrite bar/rod antenna, usually mounted across a horizontal dimension of the radio, can be effective as a direction finding aid. Just tune the set to a clear frequency then rotate the radio to minimize the buzz. The source is then off the end of the ferrite rod antenna.



The ferrite bar antenna in a portable AM radio can be helpful in locating sources of interference.

Interference on VHF can be tracked down with the help of a handi-talkie. You can use a similar technique to the methods on our Fox Hunts. Remember that a leaky cable-TV installation can emit RF carriers on specific channels, with video buzz in between. Cable channel 18 has a carrier frequency of 145.000 or 145.250 MHz depending on the local channel scheme. Tightening up of the cable-TV F-connectors may be all that's needed to fix a leak.

At the end of the day, you should be able to identify all noise sources in the house then suppress the ones that cause real problems in the radio room. For more information, check *The ARRL RFI Book*.

- NM9J

## WECA calling

March of Dimes and ADA need hams for their events. March of Dimes will have a walk on Sunday May the 1st; breakfast is at 7 a.m. at Saxon Woods Park, White Plains NY.

American Diabetes will have a bike tour on Sunday June the 5th; breakfast is at 6 a.m.; ride starts at 7:30 a.m. Contact: Rob n2tse at weca.org, 949-4231.



# Peekskill / Cortlandt Amateur Radio Association

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*Newsletter contributions are always very welcome!*

Archive: <http://home.computer.net/~pcara/newslett.htm>

## PCARA Information

PCARA is a **Non-Profit Community Service Organization**. PCARA meetings take place the first Sunday of each month at 3:00 p.m. in Dining Room B of the Hudson Valley Hospital Center, Route 202, Cortlandt Manor, NY 10567. Drive round behind the main hospital building and enter from the rear (look for the oxygen tanks). Talk-in is available on the 146.67 repeater.

## PCARA Repeaters

**W2NYW:** 146.67 MHz -0.6, PL 156.7Hz

**KB2CQE:** 449.925MHz -5.0, PL 179.9Hz

(IRLP node: **4214**)

**N2CBH:** 448.725MHz -5.0, PL 107.2Hz

## PCARA Calendar

**Sun Apr 3:** April meeting, HVHC, 3:00 p.m. **EDT.**

**Thu Apr 21:** Skywarn training - PEARL, Donald B Smith Govt Campus, 112 Old Rt 6, Carmel NY 7:00 pm.

**Sat May 14:** Special Event Station W2D.

**Sat June 4:** PCARA Foxhunt.

## Hamfests

**Sun Apr 10:** Mt Beacon ARC Hamfest, Tymor Park, County Route 21, Unionvale, NY. 8:00 a.m. **Club Table.**

**Sun Apr 24:** Southington ARA Hamfest, Southington HS, 720 Pleasant Street, Southington CT. 9:00 a.m.

**Sat May 28:** Bergen ARA Annual Spring Hamfest, Westwood Regional HS, 701 Ridgewood Rd, Washington Twship, NJ. 8:00 a.m.

## VE Test Sessions

**Apr 3:** Yonkers ARC, Yonkers PD, 1st Precinct, E Grassy Sprain Rd, 8:30 a.m. Contact D. Calabrese, 914 667-0587.

**Apr 8:** Orange Cnty ARC, Munger Cottage, Riverlight Pk, Hudson St, Cornwall, NY. 6:00 p.m. Contact Ronald Torpey (845)783-1692.

**Apr 11:** Split Rock ARA, Hopatcong HS, Hopatcong NJ. 7:00 p.m. Contact Sid Markowitz, 973 724-2378.

**Apr 11:** Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, 6:30 p.m. Contact Alan Crosswell, 212 854-3754.

**Apr 15:** Bergen ARA, Westwood Reg HS, 701 Ridgewood Rd., Washington Twship NJ. 7:00 p.m. Contact Donald Younger 201 265-6583.

**Apr 23:** PE.A.R.L., Putnam Co BES, 112 Old Rt 6, Carmel NY. 9:00 a.m. Contact NM9J.



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