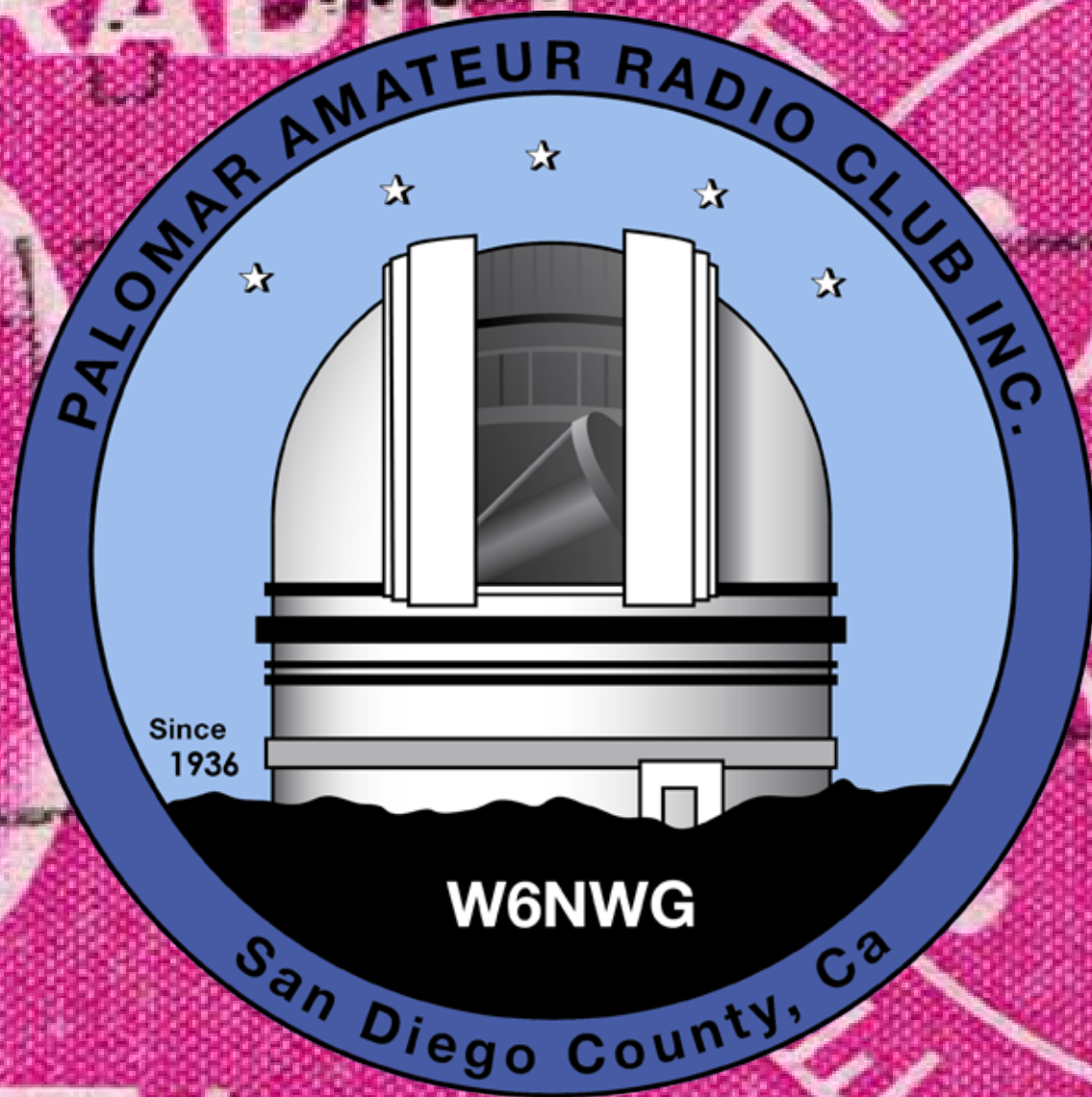


AMATEUR
RADIO



5¢

U.S. POSTAGE



Club
Meeting 7pm
6 January 2016

Carlsbad Safety Center,
2560 Orion Way, Carlsbad

Chesterfield Island DXpedition
presentation by K5GS. This
is a fantastic opportunity
to hear about an
amazing operation!

Contests!
2nd and 3rd
weekend in January
sees the NAQP CW then
SSB contests. 12 hours
on Saturday only. Single
OPs work only 10 hours.
Want an easy introduction
to contesting? Give these
weekends a shot!

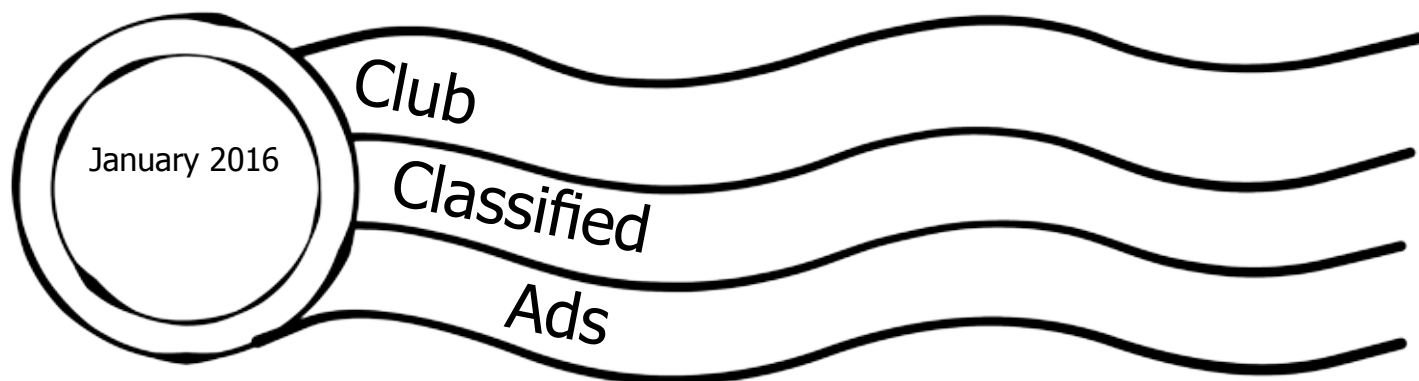
PARC
Board of
Directors Meeting
7pm
13 January 2016

14322 Pomerado Road,
Poway, CA 92064



Save the Date	2	
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Generator for sale. Military style O.D. green color. 120 VAC output, 2 KW, 4 cycle gasoline powered. Open frame construction.

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19" rack cabinet for electronics. Pre-drilled and tapped holes front and back. 56" tall by 28" deep. \$1.00 or best offer. Call John, WB6IQS, Vista, CA. WB6IQS@att.net. You pick up. No delivery.

or...

760-7 Two 7-Three Eight 76
John, Vista, CA.



Advertisements are free for members

Have items that need to find a new home? Advertise here! Send your ads to scope@palomararc.org

Club Members ONLY!

PARC has a tube bank that includes many 6 & 12 volt receiving tubes (and some transmitting types) for use by club members to repair their own personal equipment. Not for commercial use or resale. If we have your requests, we will pre-check the tubes and deliver them to you at the next club meeting.

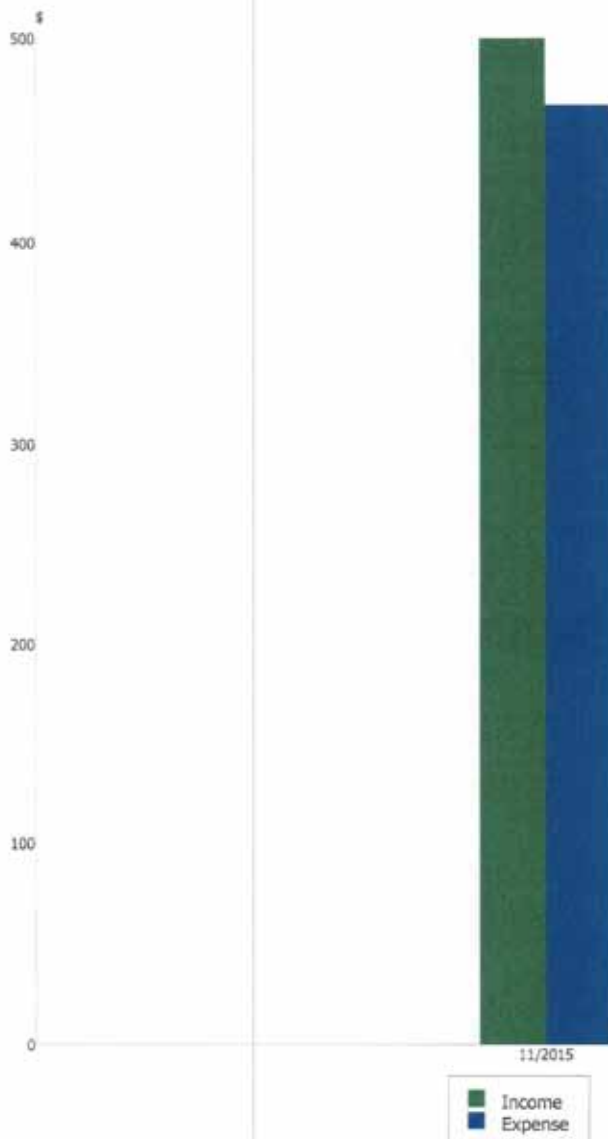
Contact John WB6IQS WB6IQS@att.net

16 December
2015

Club Financial Update

Income/Expense by Category - Last month

11/1/2015 through 11/30/2015



Income/Expense by Category - Last month

11/1/2015 through 11/30/2015

Category Description	11/1/2015- 11/30/2015
INCOME	
501(C) (3)	112.49
Dues	387.00
TOTAL INCOME	499.49
EXPENSES	
Insurance	340.00
Office Supplies	12.49
Rptr Electric	84.10
Rptr Phone	31.01
TOTAL EXPENSES	467.60
OVERALL TOTAL	31.89

January 2016

Dave N8KBC Candidate Statement

ARRL Section Manager Election

My name is Dave Kaltenborn, N8KBC, and I am running for ARRL Section Manager for San Diego and Imperial Counties.

I have been a ham for over 25 years. I relocated to San Diego several years ago and jumped in immediately as an active member of ARES, clubs, and as a Volunteer Examiner (VE). Perhaps you have heard me on radio nets or have seen me at Ham events or at your Field Day site.

What I bring to the position of Section Manager is ARRL and ARES leadership experience that I gained from real world incidents in the Mid-West "tornado alley" where I worked many real events and countless training exercises. I have over 20 years of experience in ARRL and ARES positions, such as District Emergency Coordinator (DEC) for eight counties and acting Section Emergency Coordinator (SEC) for all of Ohio.

As soon as I arrived in San Diego, I volunteered my time and was quickly appointed to the positions of Assistant SEC and Assistant Section Manager to help manage the varied ARES and ARRL activities of the San Diego Section.

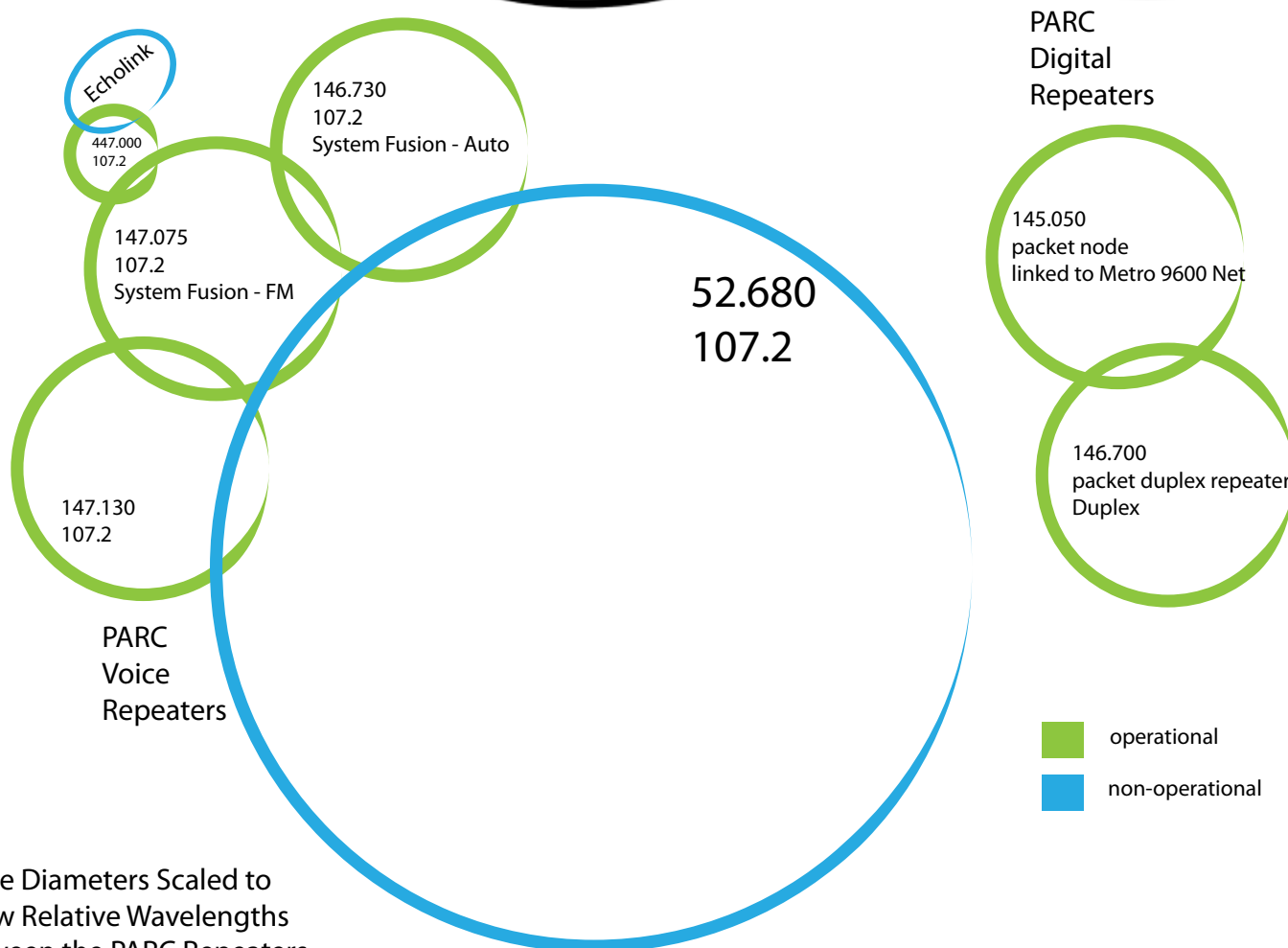
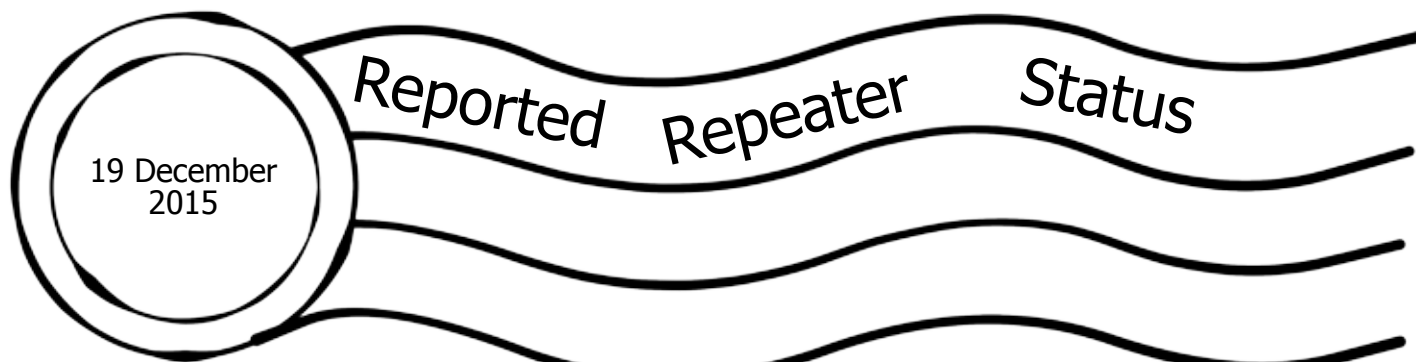
My professional career has encompassed 29 years of engineering at Bird Electronic, and the last position I held at Bird was Manager of Component Engineering for many radio-related products. Then it was off to Coaxial Dynamics where I was Engineering Manager for 20 years.

The San Diego section needs strong ARRL leadership, which I can provide. I have the skills to give quality assistance to new hams and to match those that want to learn more with appropriate Elmers.

We need to make all the resources of the League more available to everyone and ensure the amateur community is supported and served while promoting the hobby of Amateur Radio.

Thank you for your consideration.





Circle Diameters Scaled to Show Relative Wavelengths Between the PARC Repeaters

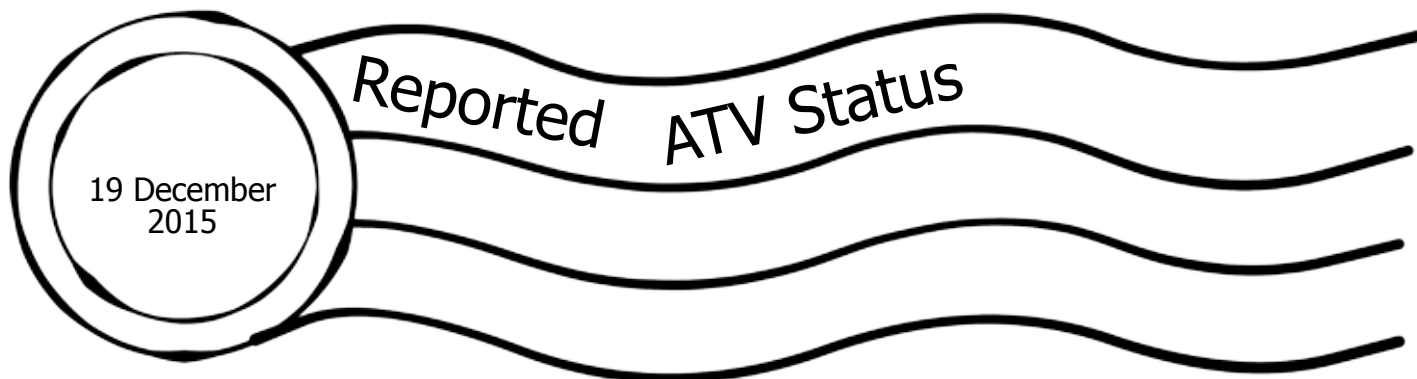
Club HF Remote Station? Proposal Time!

Current status: PARC has obtained 501(c)(3) status, and we have begun putting our HF remote station proposal in writing. This is an exciting time! We expect to complete our proposal by January 20th, 2016.

If you would be interested in helping write a club remote HF station proposal for Palomar Mountain, then please join up by writing me at scope@palomararc.org and I'll add you to the mailing list!

Mailing list archive located at <http://palomararc.org/pipermail/hfremote/>

This special interest group for HF remote will write a proposal for the Palomar Amateur Radio Club board of directors to vote on. If the vote is successful, then fundraising will begin immediately.



Would you like to help us
revitalize our ATV system?
We could use your help.
Contact board@palomararc.org
to volunteer.

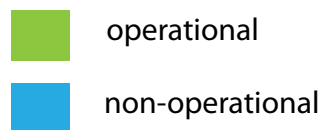
PARC
ATV
System

915 MHz WBFM in
5.8 MHz audio subcarrier

146.415
79.7
intercom

1241.25 MHz VSB out
NTSC standard

2441.5 MHz WBFM in
6.0 MHz audio subcarrier



Circle Diameters Scaled to
Show Relative Wavelengths
Between Equipment

FERRITES FOR HAMS

Ferrite – Toroids, Slip-on, Snap-on

Mix 31, 43, 61, 77 for Baluns/Ununs, RFI/EMI
Quantity pricing for Clubs, DXpeditions

Antenna Balun/Unun - kits or assembled

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E				V		I				C		B
S	A	C	H	E	T		B	A	I	K	A	L
S		L				G		F				A
	R	E	D	S	E	A		F	R	A	N	C
K		A			M		U		R		D	K
H	E	N	N	A		C	H	A	M	O	I	S
A		E		S		H		Y		B		E
N	O	R	T	H	S	E	A		F	E	T	A

Solution to December crossword puzzle

A R A P

イM ヲク ヲA キエインアエクク
ヲA ウD ヨI
ケT ヨI
IE IO
コU
キR

IC ヲク IC
IE
クS
クS

IO エククヨアアエ
ヨI
ウN
ケT



Decode the secret phrase in this logo above and win a patch.
Answers to scope@palomararc.org

December Membership Meeting

2 December
2015

Photographs by KB5MU W5NYV



December 2015 membership meeting was action-packed. The new board was elected (see page 14), life membership for Mike Pennington was approved by membership vote, Al Donlevy was awarded for his many years of service (see page 13), and plenty of food was consumed during the social!





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4CX250B • 4CX250R • 4CX400A • 4CX800A • 4CX1500B

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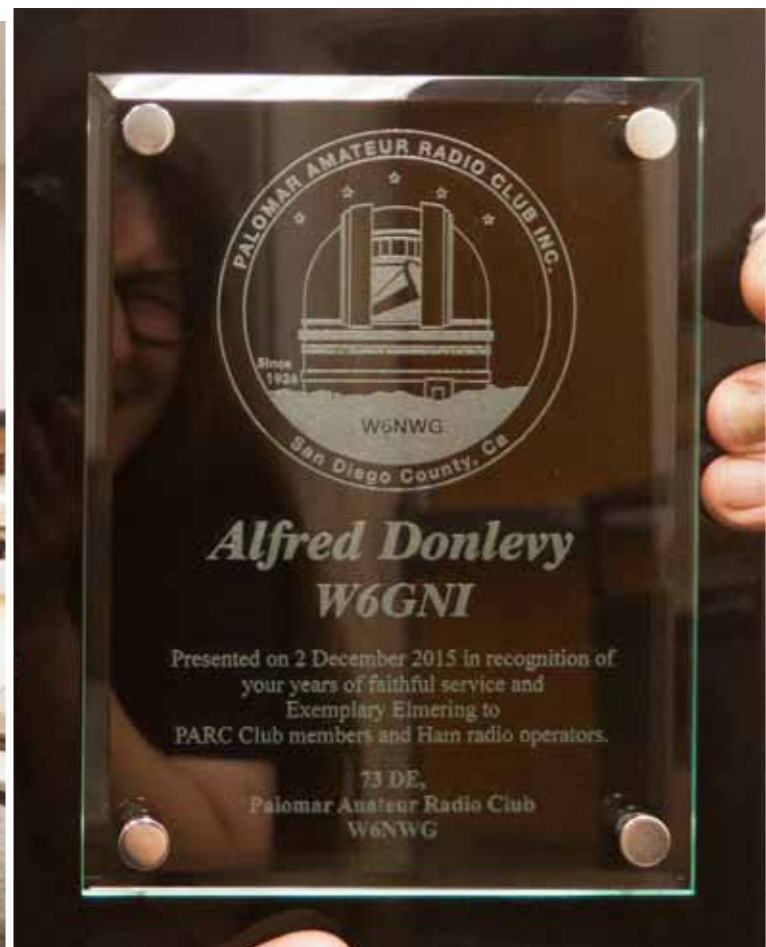
Please
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advertisers.
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of the club is
vital.

{special}
THANKS
to our sponsors

Al Donlevy Honored for Service

2 December 2015

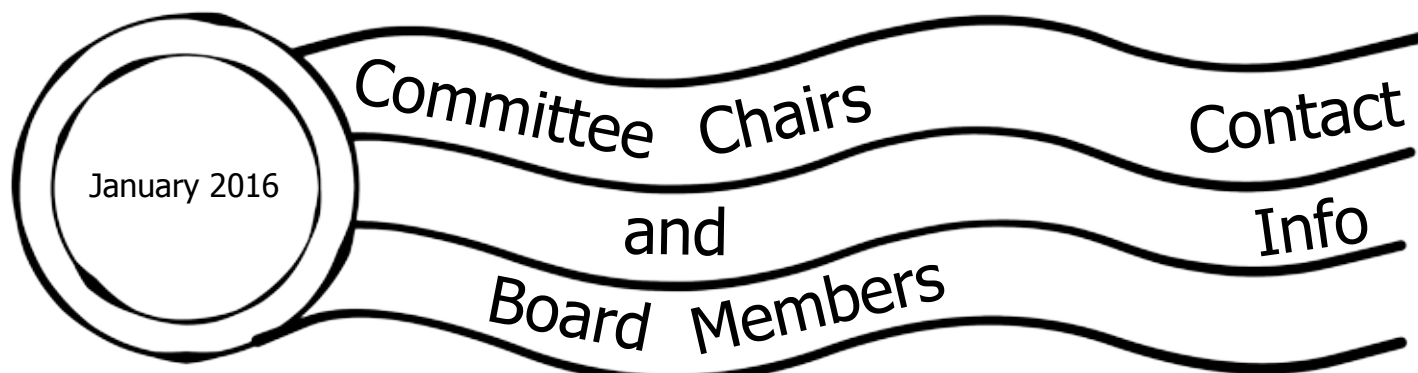
Photographs by W5NYV



The award reads:

"Presented on 2 December 2015 in recognition of your years of faithful service and Exemplary Elmering to PARC club members and ham radio operators.

73 de Palomar Amateur Radio Club W6NWX"



Current Board of Directors

President	Charlie Ristorcelli, NN3V	(619) 368-7617
Vice President	Joe Peterson, K6JPE	(619) 630-8283
Treasurer	Tom Ellett, W0NI	(858) 546-1148
Secretary	Sandy Pratt, KK6EED	(858) 748-2611
Director #1	Kevin Walsh, KK6FRK	(858) 722-5069 (text welcome)
Director #2	John Walker, AC7GK	(949) 212-5533
Membership Chair	Glen Christensen, KJ6ZQH	(858) 735-1144
Repeater Technical Chair	Mark Raptis, KF6WTN	
Scope Editor	Michelle Thompson, W5NYV	(858) 229-3399 (text welcome)

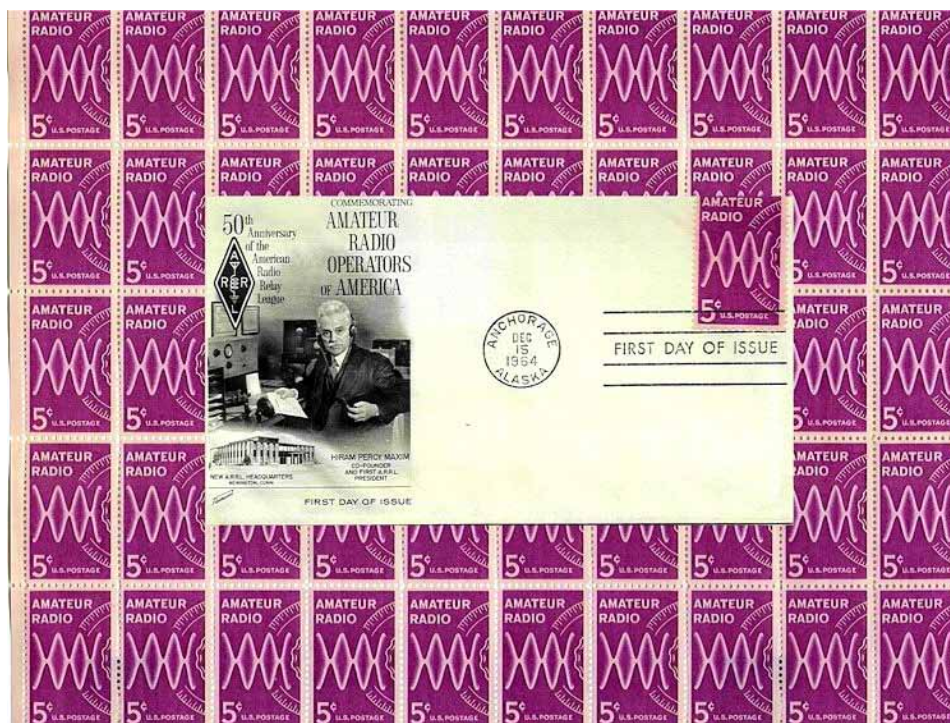
Not on the Board

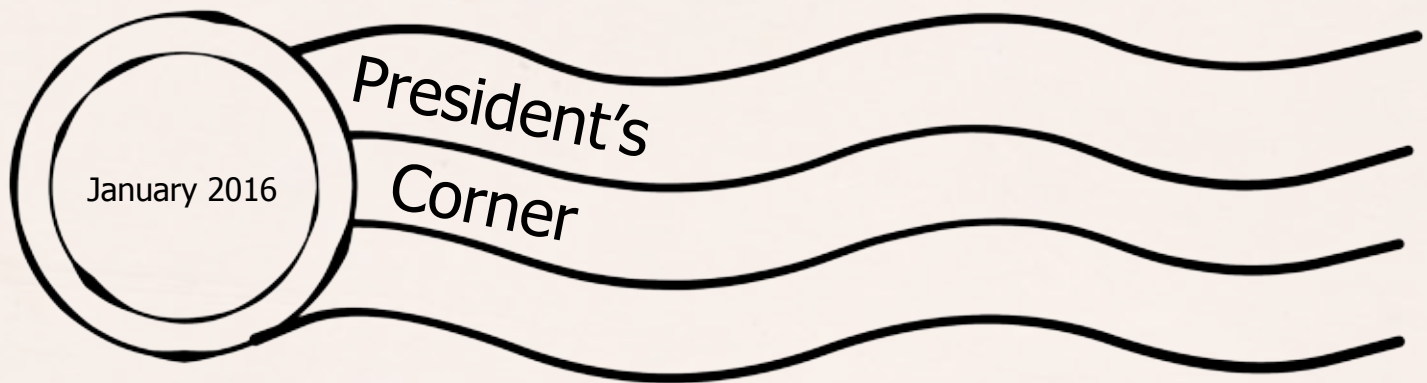
Repeater Site Chair	Dennis Baca, KD6TUJ	(760) 672-0223
---------------------	---------------------	----------------

The board members might have callsign@amsat.org mail aliases.

Committee Chairs

EchoLink	Bernie Lafreniere N6FN	N6FN@niftyaccessories.com
mesh networking	Phil Karn KA9Q	karn@ka9q.net
Operating Day	Tom Martin	k6rcw@amsat.org





Happy New Year to all! Here we are in a brand new year, and many things are possible as we start anew. Yes, it is time for New Year's Resolutions!

I know you are all aware of the new members of our Board Of Directors. W0NI (Tom) is our new treasurer, KK6EED (Sandy) our new secretary, KK6FRK (Kevin) our Director #1, and AG7CK (John) our new Director #2. I thank each of them for their willingness to volunteer to serve the needs of PARC.

Speaking of serving PARC, the Board will soon meet to take a thorough review of opportunities to improve and expand the club's activities. Some of the things under consideration will be dependent upon our 501.C.(3) status.

Things of interest to the Board are: identification of activities to give club members greater opportunity to participate in club events, creation of opportunities to attract new hams and young hams to introduce them to the hobby, finding general meeting programs that expand technical awareness of new developments in amateur radio, ways to operate the new modes and hardware appearing in ham radio, etc.

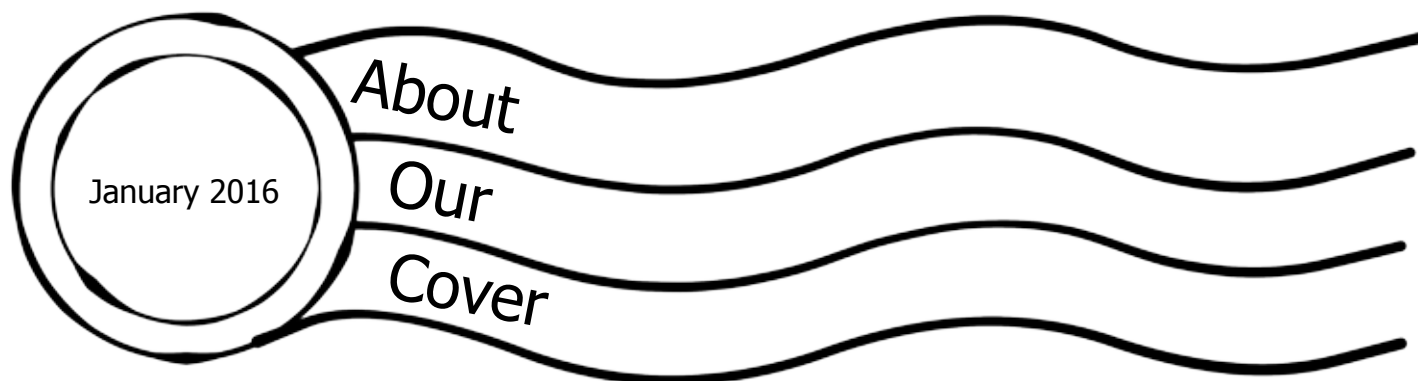
Please think about **what you would like to see at club meetings and activities**. PARC is your club. As your Board of Directors, our objective is to make PARC member meetings and events meaningful and fun for you. Over the next few meetings we will be taking **informal surveys** of opinions and ideas from those of you who attend about what is of interest to you. This is just an effort to have a **better understanding of your interests**.

Our January club program will be of great interest to all hams. K5GS (Gene, who goes by Gus) will tell us about the 2015 Chesterfield Island DXpedition, in which he was a participant.

Whether an avid DXer, or just someone who enjoys ham radio activity, contacting Chesterfield Island is always a great thrill. Chesterfield Islands (also known as Chesterfield Reefs) are uninhabited coral atolls in the Coral Sea located approximately 870 kilometers northwest of Noumea, New Caledonia, a French possession. The archipelago is made up of 11 islets and many reefs. The islands are a loose collection of elongated reefs that enclose a deep, semi-sheltered, lagoon. All of that is a nice way to describe a plot of land in the middle of the Pacific Ocean, about 6,000 miles southwest of San Diego!

Mounting a DXpedition to an uninhabited spot on the planet is not an easy task. The logistics needed to carry out the event are formidable challenges. And by no means are they cheap! Gus will describe the efforts to plan, travel, set up, operate, and depart from a DXpedition that attracts thousands of hams in the ensuing pile ups on the bands. The Chesterfield DXpedition took place in October 2015, and was a tremendous success.

Come and enjoy a firsthand account of one of the thrilling experiences in ham radio!



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DECEMBER 16, 1964

A 5-cent stamp honoring the nation's 250,000 amateur radio operators will be first placed on sale at Anchorage, Alaska, on December 15, 1964.

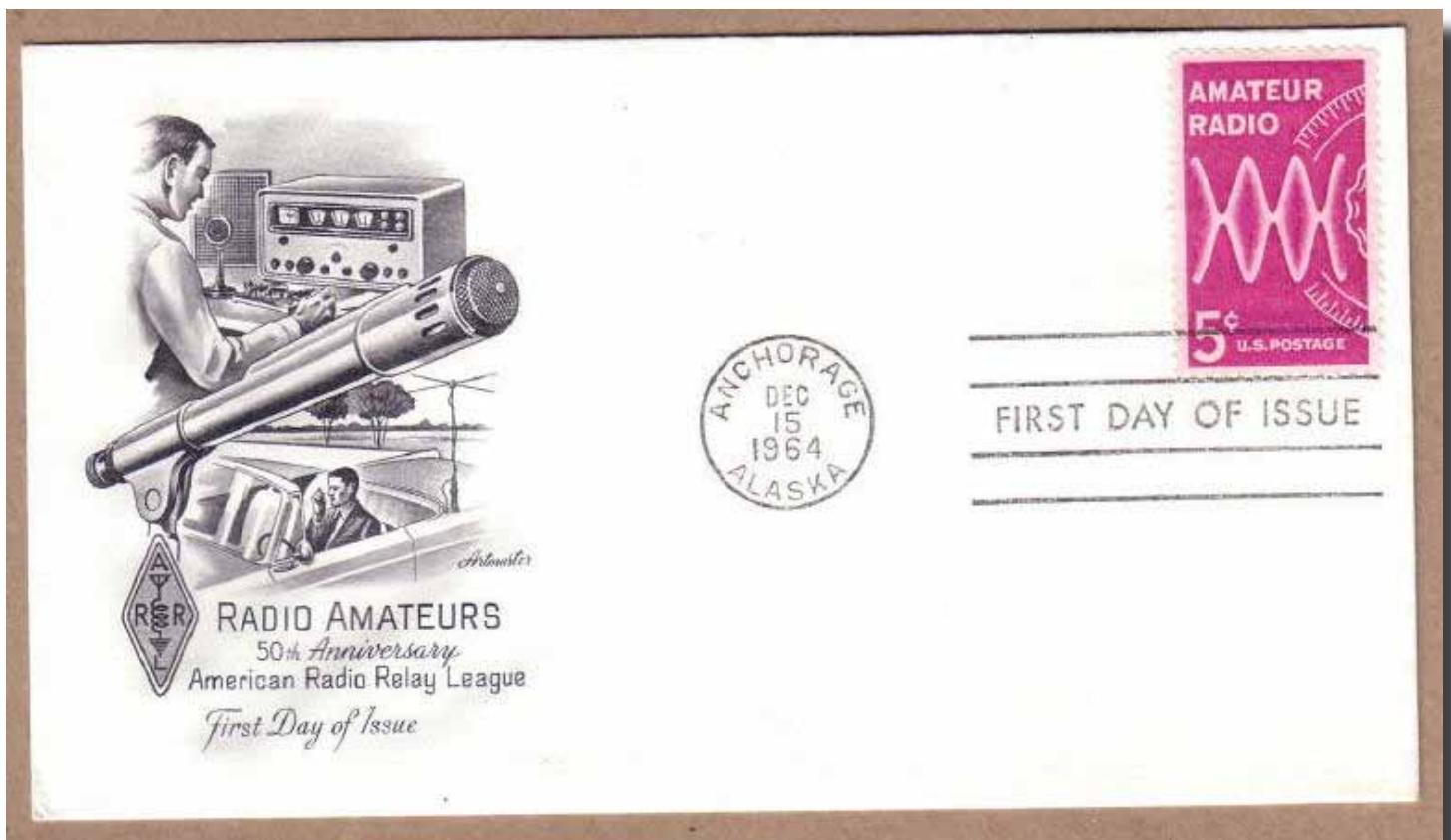
It was in Alaska that the "hams" wrote another chapter in a long public service record by maintaining communications following the recent earthquake. The Amateur Radio commemorative stamp falls on the 50th anniversary of the founding of the American Radio Relay League.

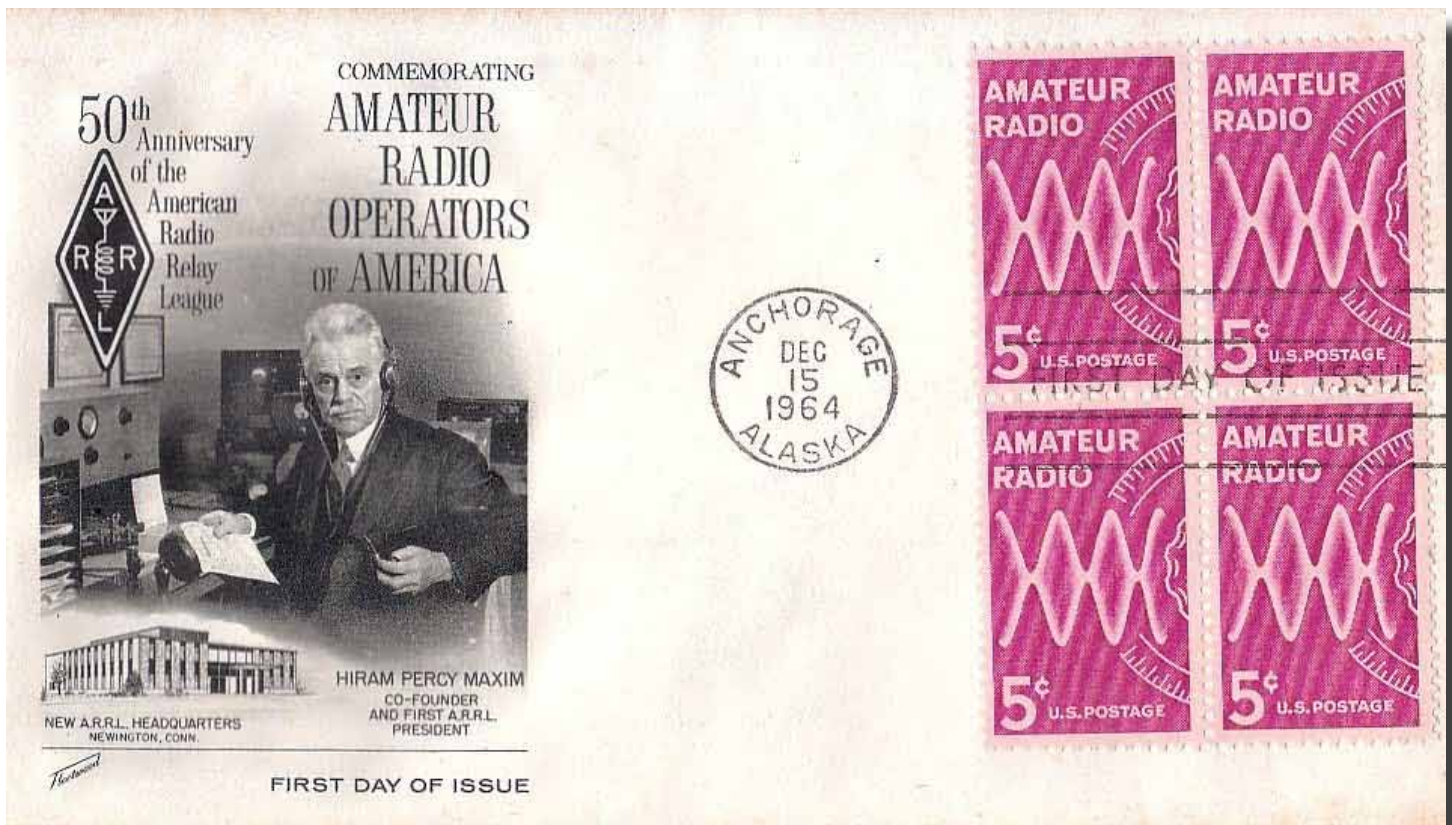
This purple vertical stamp was designed by Emil J. Willett of Hartford, Connecticut. His stylized design combines a radio broadcast wave with a portion of a radio dial. This issue will be printed on the Cottrell presses, issued in panes of 50, with an initial printing of 120 million.

Collectors desiring first day cancellations may send addressed envelopes, together with remittance to cover the cost of the stamps to be affixed, to the Postmaster, Anchorage, Alaska 99501. Postage stamps and personal checks will not be accepted in payment of the new issue. The envelope to the Postmaster should be endorsed "First Day Covers 5¢ Amateur Radio Stamp." Orders for covers must not include requests for uncanceled stamps. Requests must be postmarked not later than December 15, 1964.



Here are some examples of “first day covers”, or mail with the collectible stamp, cancelled on the first day of issue. This is often done using commemorative paper.





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January 2016

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It's a project that allows anyone to receive postcards (real ones, not electronic) from random places in the world. [Learn more.](#)

How does it work?

1. Request an address and a Postcard ID
2. Mail a postcard to that address
3. Receive a postcard from another postcrosser!
4. Register the Postcard ID you have received
5. Go to number 1 to receive more postcards!

[Create your free account](#)

What is happening now?

LesleyLuo received a postcard from taatjat

CBB sent a postcard to U.S.A.

kate0707 uploaded the postcard US-3742629

DENISEMT sent a postcard to Japan

Nuro4ka received a postcard from Elisavetats

ninetails received a postcard from Hauer

liuking received a postcard from yaliteng4

CBB sent a postcard to Taiwan

Postcrossing Blog

Snoopy exhibition at the Singapore Philatelic Museum

With love from Snoopy, Charlie Brown and the Peanuts gang is the name of the most recent exhibition at the Singapore Philatelic Museum.

[Read more & comment](#)

Postcrossing Stats

597,693 members
212 countries
225 postcards/hour
33,232,455 postcards received
489,501 postcards traveling
104,443,390,591 miles traveled
4,194,269 laps around the world

[More stats](#)

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Mark (bikeroo), U.S.A.
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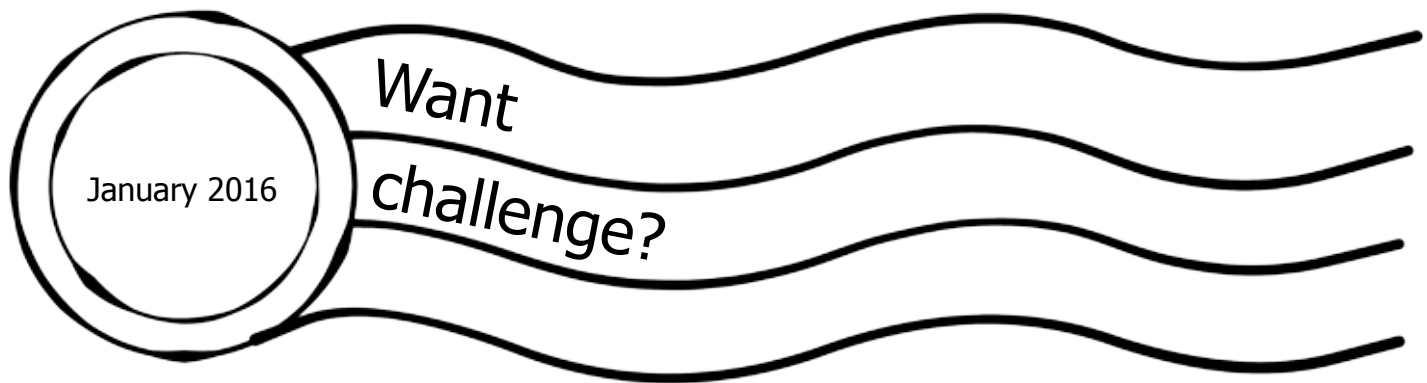
LK-7917



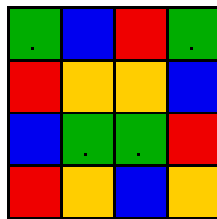
BY-1770263

[Go to the postcards gallery](#)

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Stamp Folding Puzzle #1



Fold this 4×4 sheet of stamps into a 2×2 square showing the four

- green squares
- yellow squares
- blue squares
- red squares

A Visit To The Amazing Commercial Antenna Farm by John Rotondi W6JBR

Sandia Crest Electronic Site Photo Essay

John Rotondi, W6JBR(/5)

Article and photographs ©2015 John B. Rotondi

This past October, during a visit to see my good friend Larry, AE5CZ, in Albuquerque, New Mexico, I had the great pleasure of getting an up-close and personal tour of the huge secure commercial antenna facility that covers the top of Sandia Crest, known to the FCC as the 'Sandia Crest Electronic Site'. Larry is on the Board of the Upper Rio FM Society¹, which has one of their hub repeaters hosted in the shack of the local PBS affiliate, KNME, Channel 5.

It was truly with breathless anticipation (possibly from the high elevation?!) that I looked forward to this literal high point of my visit.

This site is the "highest elevation major tower site in America"² at an altitude of 10,680 feet—that is over 2 miles above sea level!

Located in central New Mexico overlooking the City of Albuquerque 5000 feet below, this vast site is home to the single largest wireless communications hub in the state. It allows all of the business, telecom, and commercial radio and TV broadcasters (and ham repeaters) unparalleled coverage of not only the immediate Albuquerque metropolitan area, but most of the State of New Mexico.



It is also notable as having the second highest RF field strength (V/m) in the US, exceeded only by Mount Wilson in Los Angeles, which I have also had the pleasure to visit. This site had RF Exposure Hazard Warnings posted due to the ground level field strength greatly exceeding FCC permissible limits for human exposure, so our visit was restricted to 30 minutes or less. This RF field not only affects living tissue, but also inanimate objects, as I will explain later. We parked outside the security gate, then made our way inside the locked compound. The site is quite impressive, with towers, transmitter buildings, and generators as far as the eye can see. After our tour of the antenna farm, we came across an unsuspecting victim of the high RF levels, out in the parking lot.

1 Visit the Upper Rio FM Society home page at: <http://www.urfmsi.org/wp/>

2 You can find out more about the world-class Sandia Crest Electronics Site at: <http://www.fybush.com/site-of-the-week-11162012-sandia-crest-albuquerque-2011/>

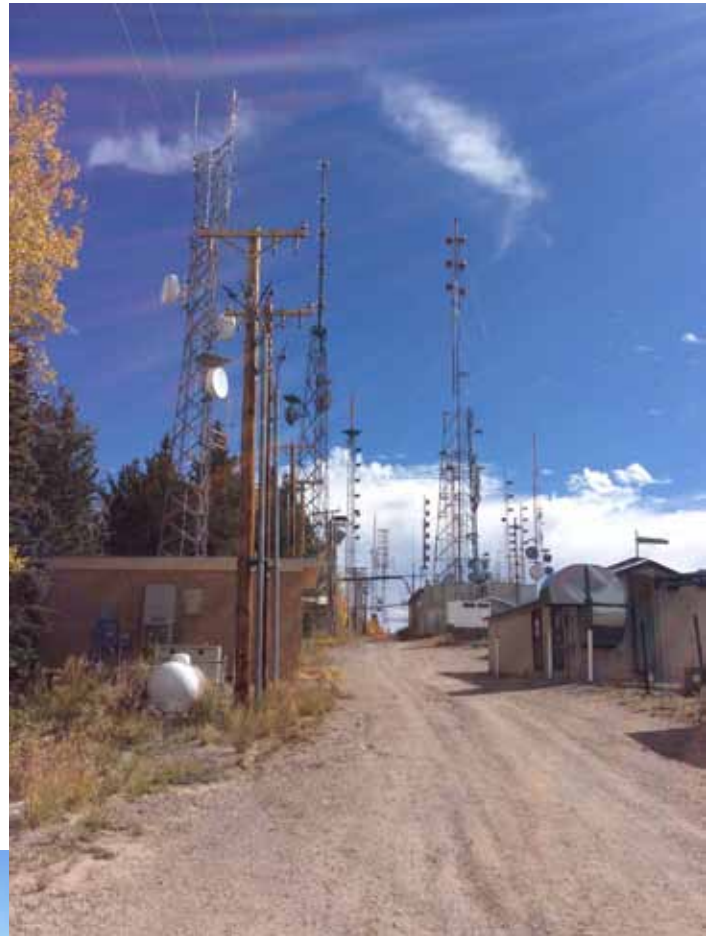
The owner of a Tesla electric vehicle was locked out of his vehicle. The extreme RF field energy prevented the vehicle computer from accepting door open commands from his key fob, and there is no backup mechanical key/lock in this advanced vehicle! To make matters worse, the specialized flatbed tow truck required to move the vehicle out of the RF field, had been called away to a serious highway crash, so this gentleman and his wife had to wait over 4 hours for AAA to get them out of there. Luckily, there is a restaurant at The Crest, so no one would starve or suffer from exposure. Other than this issue, he described the Tesla in glowing terms, having traveled cross country utilizing the free Tesla Supercharging Stations en route.

Of course, as hams, Larry and I wondered how much RFI/EMI the Tesla might generate, that could interfere with our ham radio communications?

Neither of us show any ill affects from our RF exposure, and, other than my very sore neck from trying to look up at the towers, no hams were injured in this adventure. There are a total of 31 towers on site, with the tallest at 285 feet.³



3 Information from: Sandia Peak Electronics Site, Study of Radio Frequency Exposure Conditions ©2013 Hammett & Edison, Inc. : https://licensing.fcc.gov/cdbs/CDBS_Attachment/getattachment.jsp?appn=101637874&qnum=5300©num=1&exhcnun=2

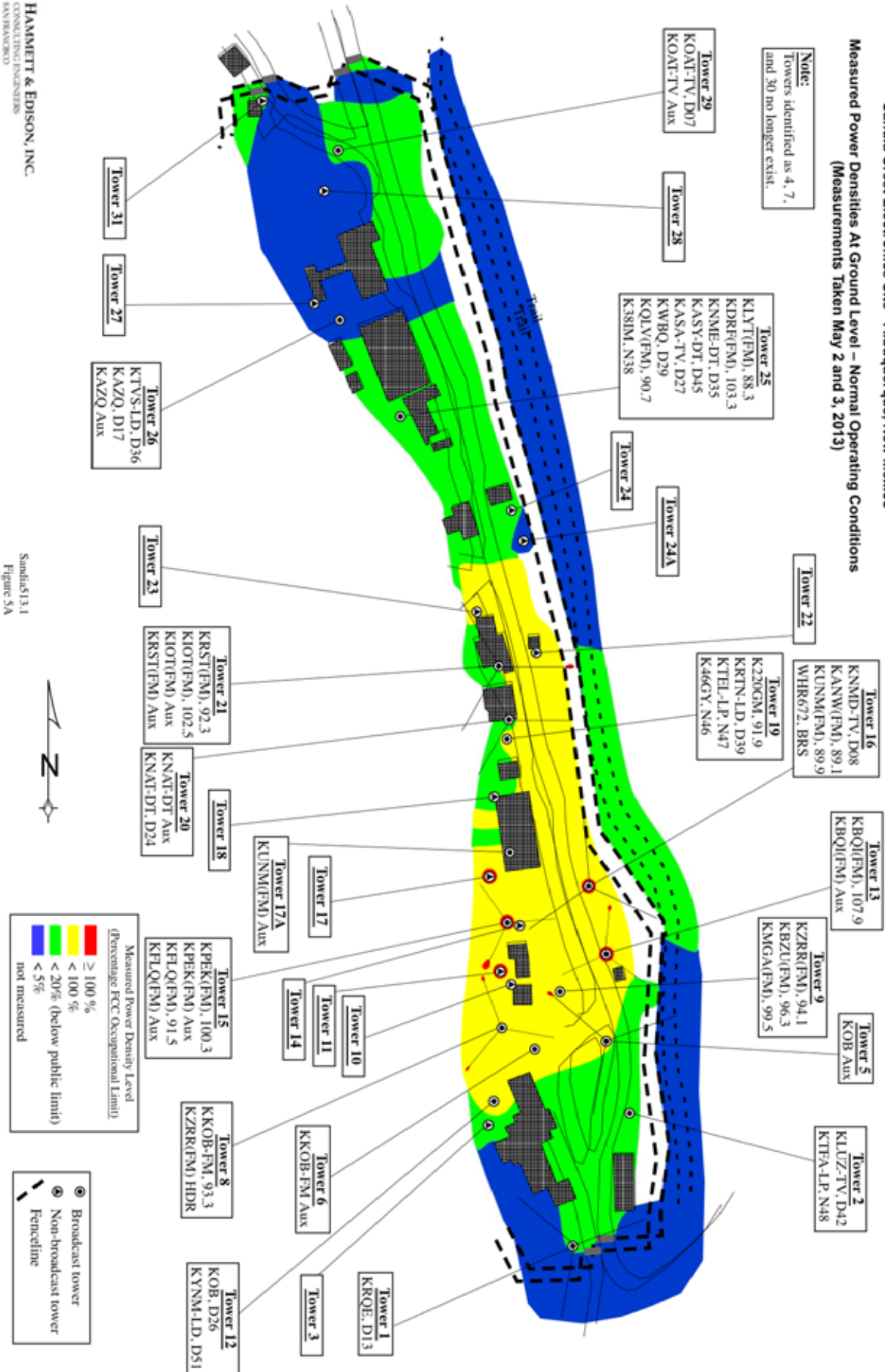




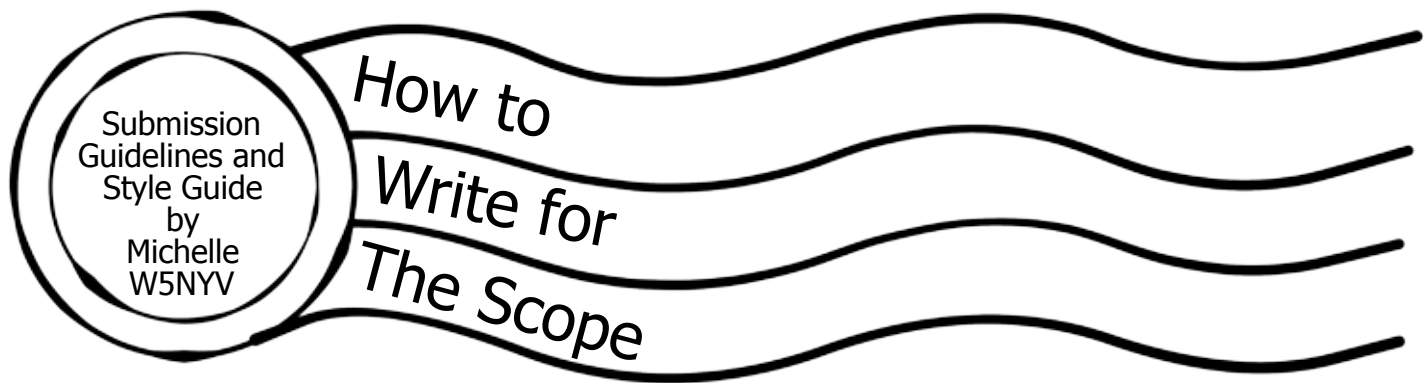
Sandia Crest Electronics Site • Albuquerque, New Mexico

Measured Power Densities At Ground Level – Normal Operating Conditions
(Measurements Taken May 2 and 3, 2013)

Note:
Towers identified as 4, 7,
and 30 no longer exist.







Submission Guidelines

Article submissions in most modern file formats are accepted. Plain text in the body of an email, with attached full resolution photographs, is most preferred. Dropbox and several other file transfer services are supported.

Sending a fully-formatted PDF, so that the author can control formatting and exact wording, is also accepted. We use Tahoma font for body text, but will accept PDFs with other fonts. If any editing is necessary, then it will be negotiated with the author, and will then be the responsibility of the author.

For 2016, the Scope theme is postal marks and radio-related stamps. Postal theme artwork is welcome! Scans of amateur radio stamps, stories about stamps in general, interesting or quirky postal marks, fun things to do with the mail, puzzles about stamps, interesting stamp-related narratives, stories about current mail technology, QSL cards, QSL bureaus, and QSL collections are all very highly desired throughout 2016.

We want to publish articles about amateur radio and amateur radio related events and interests. Amateur radio covers a very broad swath of subjects. Contesting, technical experiments, narratives about the hobby, stories about how you became a ham, suggestions for an interview, ideas for more puzzles and games, experiences in community service, emergency communications, tours and travelogues of places of interest to amateur radio operators, mobile installation articles, ham shack articles, good operational practices, ideas for what PARC should be doing in 2016, and many other subjects are what we want to print in the Scope every month.

Articles that misrepresent a person, subject, or event will not be printed. Articles that are attack pieces, demean groups or individuals, or ridicule others will not be printed. The editorial staff

of the Scope, in coordination with the Palomar Amateur Radio Club Board of Directors, has the final say on what is published in the club newsletter. Being a member of the club does not guarantee that a submitted article will be published. No payment is given in exchange for any article. Copyright remains entirely with the original author.

Style Guide

Time: Use 24-hour time in the following format.

"We started the event at 9:00am and began tear down at 16:00pm."

Name and Call Sign: Name is followed by call sign with no commas.

"Michelle Thompson W5NYV began writing the article."

After the first name and call sign is listed in an article, the style is to shorten it to first name and call sign with no commas.

"Michelle W5NYV was writing all day."

Do not use ellipses unless you know exactly how to use ellipses.

Ellipses... are not... the same thing... as a comma... or a pause...

Capitalization should be used for proper nouns. Proper nouns are the names used for an individual person, place, or organization. They are spelled with initial capital letters. For example, Michelle, New Mexico, and Boston Red Sox.

"And... that's it! That's All there is To It!"

What's the next step? Write an article, or propose one. If you need help, just ask! Mail to: scope@palomararc.org

Software Defined Radio Bits

1 January 2016

Want to help experiment with BladeRF and ATV? Let the club know! Write board@palomararc.org

Imagine an automated RDF system on Palomar. Is this one possible set of hardware that could do it?



Michelle Thompson

December 22 at 11:45am · San Diego, CA

After having worked with the BladeRF for a (very) brief time, I've come to the conclusion that it cannot be (easily) used for the project originally intended. Here's the BladeRF website:

<http://nuand.com>

The BladeRF is a full-duplex SDR (28MHz bandwidth) that operates from 300MHz - 3.8GHz. I would have to have substantial additional circuits to use it at 5GHz/10GHz for Phase 4.

This lead me to ponder how it could be used for PARC.

The bands it's best suited for may be the ones that we are coordinated for ATV. Our ATV system is currently not fully operational. If we used something like the BladeRF as the heart of a revamped ATV system, and incorporated as much of the current system as possible, then with some effort, we may be able to have a much more functional ATV system online.

I haven't worked out all the details by any stretch, but I was curious if anyone in the group would want to collaborate on this project (or cheerlead! encouragement is volunteer fuel!).

I have one volunteer so far, but he won't be free for several more months. Like many of you, I'm not free myself until mid-January.

I'm thinking to support "old-school" ATV while at the same time providing a way for digital ATV at the same time. This would be essentially the same sort of thing that we have with the automatic mode selection on the new Fusion repeaters. The goal could be to allow everyone to play, regardless of the type of equipment they had knocking around.

While this is a nontrivial programming challenge, it's not so huge or ambitious that it can't be done.

Anyway, if you guys could share your thoughts on this possible direction for our ATV frequencies, it would be greatly appreciated.

#bladerf



Nuand | bladeRF Software Defined Radio

bladeRF - low-cost, professional USB 3.0 Software Defined Radio

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DECEMBER 23, 2015

SIGNAL DIRECTION FINDING WITH AN RTL-SDR, RASPBERRY PI AND REDHAWK

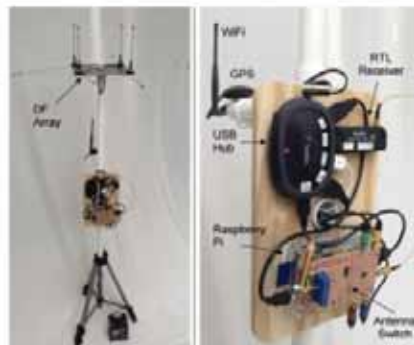
Something we missed posting about from last year was [this presentation](#) on "Redhawk", a direction finding system built out of a Raspberry Pi, an RTL-SDR and four antennas on a 4-way switch running software created with REDHAWK. REDHAWK is a visual DSP development platform that can be considered similar to GNU Radio or some parts of MATLAB. The authors write:

"The Redhawk team has used a Raspberry Pi as the basis for a networked RF sensor capable of supporting spectrum monitoring, signal intercept and direction finding (DF) operations.

Several Redhawk sensors are deployed in a distributed sensor grid, wirelessly tethered to a command and control (C2) laptop. The system has the following key features and capabilities:

- A simple operator interface to configure the sensors
- Fading meter and PSD displays to monitor the spectrum for signal activity
- Demodulate FM signals from target FRS radios and play audio on selected channels
- Perform coarse DF on target emitters
- Display a map of the surrounding terrain that is annotated with the positions of the sensors, the target emitter and calculated lines of bearing (LOB) to the target. The map provides a PF Common Operating Picture (COP) which can be viewed on WiFi enabled tablets or smartphones.

Each Redhawk sensor can determine the bearing of transmitted signal. By combining several networked Redhawk sensors at different locations they are able to pinpoint the actual location of the transmitter on a map.



The Redhawk System



Lines of bearing combined from three different Redhawk sensors

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Scope Volume #48 Issue #1 (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084.

POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084 and at additional mailing offices. Dues are \$20 per year or \$35 per year for a family. Dues include a subscription to Scope.

You can join or renew your membership, find a repeater listing, find contact information for the board all on the club's web site <http://www.palomararc.org>

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Featured Program:

At 7:30pm on 6 January 2016, Palomar Amateur Radio Club will have a program. K5GS (Gene, who goes by Gus) will tell us about the 2015 Chesterfield Island DXpedition, in which he was a participant.

Come at 7pm to socialize. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

Sign up for the PARC Email Lists:

<http://www.palomararc.org/mailman/listinfo>