

**PIKES PEAK
RADIO AMATEUR
ASSOCIATION
(PPRAA)**



Ø-BEAT

Volume 64 Issue 12

December 2014

Activities/Meetings

- Ham Breakfast
Saturday, Dec 6th., 8-9:30AM at Black Bear Diner, 975-A N. Academy Blvd
- PPRAA Board Mtg
Mon, December 10th
Daniel's Taco
- PPRAA Christmas Party
Wed. December 10th
IHOP 5749 Stetson Hills Blvd
- 10 Meter/2 Meter net
Every Thursday 7:00 pm
28.290 MHz—USB
144.200 MHz-USB

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Christmas Party

Christmas Party
IHOP
5749 Stetson Hills Blvd
December 10th, 7:00 PM

Please join us along with you family at the PPRAA annual Christmas party. There will be no business meeting, just come join the festivities.

Door prizes will be drawn, so make sure you have your membership current so you can win one of the larger prizes.

Ellicott Fire Department

Various PPRAA members have been working on different aspects of the club station met with the Ellicott Fire department to discuss moving the club station to this location.

The fire department's legal council has pre-approved the land use agreement. The station committee measured the area that is being allocated, determined areas to be avoided, as well as discussed the location for tower and antenna sections.

The site includes electric, internet and phone service.

The committee is in the process of additional evaluation including remote access and antenna options.

Pearl Harbor Day—Special Event

December 7th 1941 marks the date the Japanese brought the United States into both the Pacific and European theaters of World War II.



To commemorate this date, PPRAA will be operating a special event station from the Ellicott fire station. The fire station is located at 75 N. Ellicott Highway which is just north of the High School.

Jim WØEM is organizing the event. At the time of this writing, the on-air operation will take place from 9:00 AM until 4:00 PM. At least two radio stations will be in operation.

Please drop by as this will most likely be the home of the PPRAA main club station. A reason this location is an attraction to us is internet access.



Immediate Internet access will allow us to advance the plans for remote station operation capabilities more quickly than originally planned.

The possibility of the Bar 10 location as an auxiliary station dedicated to low band operation 160 and 80 meters is also on the table. With the 20 acres available at Bar 10, minimum electrical interference potential, it is ideal for low band.



PPRAA special event operation.

PPRAA Officers and Board of Directors

PPRAA Board of Directors consists of four elected officers, seven board members, as well the past president (time limit dependent). The Ø-Beat editor is a board appointed position and is also a member of the board.

Officers include:

- ⇒ President
- ⇒ Vice-President
- ⇒ Secretary
- ⇒ Treasurer

To send board member's email, browse to the officers section of our website: <http://ppraa.org/about-ppraa/officers>

President	Raleigh Holcomb	N4HYF
Vice-President	Jim Bishop	KDØKQL
Secretary	Diana Nordstrom	KCØNPP
Treasurer	Pam Scott	WØPRS
Past President	Michael Derbort	KCØELG
Board Member	Dan Martin	KDØSMP
Board Member	Glenn Brodt	N3ULW
Board Member	Jim Rader	KDØNQM
Board Member	Charlie Coyner	KD6CBC
Board Member	Jim Harris	WØEM
Board Member	Virgil Yost	NØXRS
Board Member	Frank Roger	KB3PDT
Ø-Beat Editor	Dan Scott	WØRO

Online Resources

PPRAA Website

<http://ppraa.org>

The PPRAA website is the cornerstone for club related information, events, and technical information.

In addition you can register, pay dues, and submit donations. Donations to the PPRAA college scholarship fund are managed by FAR Scholarship Committee

Facebook / Google+

Follow activities as they unfold, or get reminders of upcoming events.

Links to both Facebook and Google+ social media sites can be found on the PPRAA.org.

Or from each social media site search on: Pikes Peak Radio Amateur Association

PPRAA Forums

The PPRAA forums are intended to allow users to exchange of ideas, ask and answer amateur radio related questions, and plan/discuss upcoming events.

This is a fantastic, but underutilized, tool. Check it out and register at: PPRAA.Forumotion.net

Monthly Activities

Membership Meeting

Held the 2nd Wednesday of the month starting at 7:00.

IHOP
5749 Stetson Hills Blvd
(Just west of Powers Blvd)

Next meeting is
December 10th 7 pm

NOTE: Many show up at 6 pm for kibitzing and grub.

Board Meeting

Daniel's Taco Shop
6:30pm—8:00pm
On the Monday preceding the membership meeting.

The location is:
6817 Space Village Ave
(Just outside the north gate of Peterson AFB)
Board Meetings are open to all members.

Ham Breakfast

Location changes monthly:
Saturday, Dec 6th., 8-9:30AM
at Black Bear Diner, 975-A N. Academy Blvd. Show up anytime between 8:00-9:30 AM

10 Meter/2 Meter Net

Every Thursday at 7pm
Starts on 28.390 USB then transitions to 2 Meter SSB at 144.200 USB.

Meeting Presentation Topics

Last Meeting

Christopher Schroeder, KD0QUI, President of MEREQ spoke about ham radio and weather.

December 10th

Christmas Party
IHOP
5749 Stetson Hills Blvd

January 14th

TBD

AmazonSmile—Shop and support PPRAA

Amazon will donate 0.5% of the price of your eligible AmazonSmile purchases to Pikes Peak Radio Amateur Association whenever you shop on AmazonSmile.

AmazonSmile is the same Amazon you know. Same products, same prices, same service.

Support PPRAA by starting your shopping at smile.amazon.com. To shop at AmazonSmile simply go to smile.amazon.com from

the web browser on your computer or mobile device. You may also want to add a bookmark to AmazonSmile to make it even easier to return and start your shopping at AmazonSmile.

After login, use Pikes Peak Radio Amateur Association for the non-profit to support.

December Activities—

Hello all!

Just some reminders!

The PPRAA Club Breakfast is Saturday, 6 December 2014 at Black Bear Diner, 975-A N. Academy Blvd. All are warmly invited to come on down and join us anytime between 8:00-9:30 AM.

December 7th is Pearl Harbor Day special event station to be held at the Ellicott Fire Station.

December's Club Meeting will be on December 10th, at IHOP on Stetson Hills. This month's meeting will be the annual Christmas party.

Thursday night net,

is at 7:00 PM local time and starts as an HF USB net in the technician portion of the band. The frequency is 28.390.

The net helps the new ham just getting on HF, or the experienced ham testing new equipment.

Other bands that may be used includes 6 meters and 2 meter; all SSB.

Zero Beat

Please submit articles to zerobeat@ppraa.org



PPRAA Board Meeting Minutes—10 November 2014

Call to Order - 6:40pm
Approval of the October board meeting minutes - Pam moves, Jim B. seconds, passes as published in the Ø-beat
December Board Meeting – Do we still want to meet? Jim WØEM motions to

meet, Virgil seconds, passes

2015 Goals and Objectives – Open Discussion? -

Open or confirmation needed on the following positions

- Antenna Jim Harris, WØEM
- Assets Virgil Yost, NØXRS
- Auditing Michael Derbort, KCØELG
- Building Jim Bishop, KDØKQL
- COQP Douglas Nielsen, N7LEM
- E-Mail Reflector John Wishart, NGØI
- Megafest Pam Scott, WØPRS
- Field Day Board
- Historian Diana Nordstrom, KCØNPP
- RF Interference Jim Bishop, KDØKQL
- Legal Dennis Major, NØABC
- Membership Pam Scott, WØPRS
- Public Service Terry Kift, KDØJAX
- Publicity Terry Kift, KDØJAX
- Station Jim Rader, KDØNQM
- Social Networking/Webmaster Douglas Nielsen, N7LEM
- Technical Education Mike Anderson, WV7T
- VE Testing Dan Martin, KDØSMP
- VE Team Liaison to ARRL/VEC Dennis Major, NØABC
- AMSAT Coordinator VACANT
- PPARES Liaison John Bloodgood, KDØSFY
- ARRL Awards Manager Rick Brown, KØSU and Galen Steele, AGØA
- ARRL Section Manager Jack Ciacchia, WMØG
- CCARC Liaison Douglas Nielsen, N7LEM and Mike Derbort, KCØELG
- HamCon Chairman John Maxwell, WØVG and Jeff Ryan, KØRM
- RACES Officer Henry Russell, KCØNAJ

Committee Reports

Treasurer's report - \$14,860.09

Club Station – Usage Process – What should be the process for members to use station? - tabled until station is closer to being done

Antenna committee report - \$70/month for internet access.

Building committee – Status? - Weather station has been installed, will keep checking, appears to be functioning fine.

Will check 11/11. Still working on inside covers for windows

Electrical committee – Status? - Awaiting temperature report for batteries, working on putting together a document for a report and bill of services

Legal (Land Use Agreement) - Still waiting for landowner

signature. Contacted Ellicott FD to see if there is an alternative since this has been taking so long - 5 acres offered, has power lines along one side, has power and internet, smaller space than at the ranch, limit the agreement to 3 years pending FD board approval for renewal

Megafest 2015 – CMRG donation - Jim R is still working on the information, CMRG has approved their donation

Field Day committee - Board is, perhaps have venture scouts involved/camping out there

Electronic Media -

COQP - Results are in, will be published on the website Wednesday, more participants this year, definitely more in-state. 1909 unique call signs, 131 in-state. Dan WØRO, moves to cover 3 plaques, Charlie KD6CBC seconds, club approves

Asset committee - Repeater parts appear to be missing, may be misplaced within the station

Scholarship Fund- Where are we? - The Fund for the 2015 school year is complete. Need to begin collection for 2016.

Zero Beat - Published on the website for November, please send any articles or ideas to the editor at zerobeat@ppraa.org

ARES- Thanksgiving Dinner and Christmas Dinner for the Salvation Army. Go to PPARES.net to sign up

Technical Education – WV7T rejoining and taking over tutoring, if classes return, will require \$30 deposit, see WV7T for more information

New Business

CCARC Meeting – Results - Amazon Smile account for PPRAA established: buy on Amazon through Smile, some money comes to the club.

-Repeater book submission process has been fixed,

-New printing for the repeater maps: 9x12 and will be cheaper and better will be available for sale after the 1st of the year.

-VHF Central States Meeting in Westminster on July 23-26.

Special Event – Tomorrow - Food budget voted by email:

Christmas Party - at IHOP. Michael D. KCØELG, motions not to exceed \$200 for a door prize, Charlie KD6CBC, seconds, board passes

Unfinished Business

HAM Breakfast? Do we have conflicts? Black Bear Diner, 975-A N. Academy Blvd, Saturday, 6 December 2014

Around the table

Next board meeting: December 8th. Location: Daniels Taco Shop

Adjourned - 8:20pm - Diana moves, Pam seconds

PPRAA General Meeting Minutes—12 November 2014

Call to Order - 6:58pm

Approval of the October general meeting minutes - Dan WØRO moves, Jim R. KDØNQM seconds, passes as published in the Ø-beat

2015 Goals and Objectives – Open Discussion? - A special event station a month

Committee Position Changes:

Auditing Michael Derbort, KCØELG
 Building Jim Bishop, KDØKQL
 Field Day Board
 Historian Diana Nordstrom, KCØNPP
 RF Interference Jim Bishop, KDØKQL
 Publicity John Bloodgood, KDØSFY
 Technical Education Mike Anderson, WV7T
 AMSAT Coordinator VACANT
 PPARES Liaison John Bloodgood, KDØSFY
 HamCon Chairman John Maxwell, WØVG and Jeff Ryan, KØRM

By-Law Review -

Change 1: Unanimous rejection
 Change 2: Unanimous approval
 Change 3: Unanimous approval
 Change 4: Unanimous approval
 Change 5: Unanimous approval
 Change 6: Unanimous approval
 Change 7: Unanimous approval
 Change 8: 7 for, 13 against, rejected by club for further consideration
 Change 9: 18 for, 2 against, approved by the club
 Change 10: Unanimous approval

Committee Reports

Treasurer's report - \$14,860.09

Club Station – Usage Process – What should be the process for members to use station? - tabled until station is closer to being done

Antenna committee report - Currently on hold pending station location discussion, antenna locations have been marked, \$70/month for internet service. Need to purchase equipment for radios to make remote contact work. Doug, N7LEM moves to reimburse Jim H, WØEM, for the price of the part needed, Michael D. KCØELG, seconds, club approves

Building committee – Status? - Weather station has been installed, will keep checking, appears to be functioning fine. 200W heaters will not be big enough.

Electrical committee –

Status? - On hold, pending Station Location Discussion

Legal (Land Use Agreement) - Still awaiting for landowner signature. Contacted Ellicott FD to see if there is an alternative since this has been taking so long - 5 acres offered, has power lines along one side, has power and internet, smaller space than at the ranch, limit the agreement to 3 years pending FD board approval for renewal

COQP - Results are in, will be published on the website Wednesday, more participants this year, definitely more in-state. 1909 unique call signs, 131 in-state.

Asset committee - Tube radio was lent out, unknown location. Found a tube radio not on asset list. If you dropped club assets at the club station, please let Virgil, NØXRS know

Scholarship Fund- Where are we? - The Fund for the 2015 school year is complete. Need to begin collection for 2016.

Zero Beat - Published on the website for November, please send any articles or ideas to the editor at zerobeat@ppraa.org

ARES- Thanksgiving Dinner and Christmas Dinner for the Salvation Army. Go to PPARES.net to sign up

Technical Education – WV7T rejoining and taking over tutoring, if classes return, will require \$30 refundable deposit, see WV7T for more information

Upcoming Event - Pearl Harbor Special Event Station, Dec 7. Keep an eye on the Club Reflector for more information

Next General meeting: December 10th. Location: IHOP
 NO BUSINESS CONDUCTED, CHRISTMAS PARTY

Adjourned - 8:00pm

Free Stuff



ISOTRON 2011/5/10

Free Stuff!

By Dan Romanchik, KB6NU

I'm a sucker for free stuff. Below, you'll find links to a free transistor amplifier design program, a free printed circuit board design program, and a free tutorial on antennas. All of these look to be worth a look.

TransistorAmp I.I

This is free software for designing bipolar transistor amplifiers. I found the link to this software (<http://en.transistoramp.de/>) on the AMRAD mailing list. Phil, MIGWZ, who posted the link, says, "A transistor circuit that I'm developing needed a 5x voltage gain stage. I could have thrown in a single op amp with split power rails and all that DIL8 real estate, but a single transistor stage would suffice. Trouble is, I'm an EE by inclination, not training, and all those calculations - working out those capacitor reactance values - well, I don't do them often enough for them to be easy. And I want voltage gain, not current. And then I found Transistor Amp I.I."

"It's a nice piece of software," says Phil, "It installs easily and did the job for me quickly and easily. Oh, and when I built the circuit for real - voltage gain of 5x!"

[[NOTE: A screen shot of the software that you can use for the article can be found at [http://www.kb6nu.com/wp-](http://www.kb6nu.com/wp-content/uploads/2014/11/specify-common-base-circuit.png.....Dan)

[content/uploads/2014/11/specify-common-base-circuit.png.....Dan](http://www.kb6nu.com/wp-content/uploads/2014/11/specify-common-base-circuit.png.....Dan)]]

Altium CircuitMaker

CircuitMaker (<http://www.circuitmaker.com>) is a free printed circuit board design tool for hobbyists, people like you and me. Maxfield Parrish of EETimes says, "one key aspect of CircuitMaker is its intuitive and easy-to-use interface -- all of the important 'stuff' is presented in an easily accessible manner in a ribbon at the top of the display. Another major consideration is that Altium has decided to make CircuitMaker all about 'Community,' so users can easily share ideas and designs, comment on designs and offer suggestions for improvement, and generally help each other along the way."

Free antenna tutorial

For a limited time, Rohde & Schwartz and the IEEE Communications Society are offering a free tutorial on Antenna Basics (<http://www.comsoc.org/form/tutorial-registration-antenna-basics>). This tutorial explains the basic functionality of an antenna, starting with Hertz's antenna model. It also includes a short introduction to the fundamentals of wave propagation, the important general characteristics of an antenna and parameters, such as antenna gain, radiation pattern, bandwidth or VSWR. A more detailed explanation of the functionality of some selected an-

tenna types (e.g. dipole or monopole) is also given.

Maik Reckeweg, Product Manager Antennas, Rohde & Schwarz GmbH, Munich, Germany, who is responsible for all the company's monitoring, measurement and communications antennas is the tutorial's.

The video is kind of dry, but I think Reckeweg does a pretty good job of discussing antenna basics. The video is also accompanied by a white paper that delves into these topics a little more completely. Overall, there's a bit more math than in most amateur radio discussions of antennas, but this makes the discussion a little more comprehensive.

When not scouring the Internet for free stuff, you'll find KB6NU working on updates to his "No Nonsense" study guides, working CW on 40m, or blogging about amateur radio at www.kb6nu.com.

Broadband—Hamnet.org end of Linksys support

Written by administrator
(<http://www.broadband-hamnet.org/>)

Friday, 31 October 2014 22:29

The Broadband-Hamnet Core Team announces the end of support for the Linksys WRT54G series of firmware effective April 30, 2015. The version of firmware that is then current for use on WRT54G series will remain on the Broadband-Hamnet.org website and may continue to be used, but there will be no further updates, bug fixes, or support after April 30, 2015. This means is that a WRT can still be used well after

this date, but likely will not be able to connect to any newer firmware for newer devices.

- This has not been an easy decision to reach, but there are some very compelling reasons to stop creating new firmware for the WRT54G series. The firmware for the WRT54G has grown to the point that we are out of memory.
- The OpenWRT software, upon which the Broadband-Hamnet firmware is based, has dropped support for the WRT54G series.

- The hardware design itself is showing its age and not lending itself to implementing features found in the newer hardware designs.

- It takes much more time and effort to implement features on the WRT54. In many cases kernel modifications and code from newer versions of OpenWRT must be incorporated into the older code to maintain compatibility between the WRT54G and the Ubiquiti products.

Given that a working node can be deployed much easier, less expensively, and with significant-

ly better performance with a Ubiquiti node, it only makes sense to move in that direction for the future.

The WRT54G has served us well for a number of years and will likely continue to be used for several more. The Broadband-Hamnet Core team sees the benefit in offering multiple hardware platforms, so we are exploring options and expect to offer hardware alternatives in the future.

Phonetic Alphabet

By Bob KØNR

Stu W0STU just posted an article on HamRadioSchool.com about the use of phonetic alphabets. I had previously posted a Shack Talk article on the same subject.

The "standard" phonetic alphabet is the ITU alphabet but I am starting to think that we might need to get a little more creative on our use of phonetics. Why not innovate in this area, just like we innovate on the technical front? Towards that end, I was reminded of his phonetic alphabet listed over atnetfunny.com:

A	Are	H	Hoe	N	Nice	U	Understand?
B	Bee	I	I	O	Owe	V	Vie
C	Cite	J	Junta	P	Pseudonym	W	Why
D	Double-U	K	Knot	Q	Queue	X	Xylophone
E	Eye	L	Lye	R	Rap	Y	You
F	Five	M	Me	S	Sea	Z	Zero

Even this creative alphabet can be improved on. For example, I think H should be Honor. What do you think?
73, Bob

The article is a re-post from bob's most excellent blog "The KØNR Radio Site". Bob's blog is stuffed with intriguing, humorous, and technical articles. Bob is a log time member of PPRAA.

Phonetic Alphabet—Partial Call Signs

I enjoyed the satyr of Bob's post. It made me think of the difficulties I have understanding cutesy call phonetics, or "cutesy calls". On 2-meters/440-cm it might be somewhat comical and/or acceptable. On HF SSB DX it is generally annoying listening to a person trying to use cutesy phonetics. I have a difficult time understanding why a cutesy call-sign station does not realize the DX station is asking "again please" the US station because they really do not understand cutesy. On the other hand I really do enjoy the cutesy exchange when the DX station says "no contact, QRZ?"!

One thing I have found though is that not everyone in the world actually understands my pronunciation of the ITU phonetics. For example I find that contacts to South America using Whiskey Zero Romeo Oscar does not work as well as Whiskey Zero Radio Ocean. While into Asia or Europe, Whiskey Zero Romeo (or Radio) Ontario works best.

I tend to think the ITU phonetics might better be named the I'ish TU phonetics. In the US where it is "I" and not "I'ish" I use the ITU phonetics verbatim (assuming I don't inadvertently use the non-standardized standard computer related phonetic). My call "WØRO" without phonics I find works well with DX.

While I am on the soapbox about call-signs, there is one practice that bothers me on HF but not so much on VHF/UHF FM. That is the practice of partial call-signs. There are reasons why the full call-sign is considered a best practice, and "no" I don't think full cutesy call-signs mentioned above fall into the best practice here either.

Partial calls during VHF/UHF net check-in, in my opinion can add to the efficiencies of the net. Of course the net control operator needs to be aware that each station must identify themselves. The burden is on the person checking in to fully identify, but there is a secondary and unofficial burden on the net control operator to allow time for full identification.

On HF the above is also true about partial calls. But, it may be that you are never heard by the receiving station and therefore no chance to fully identify. Or the receiving station chooses someone else to work. In either case you may never get a chance to fully identify without causing interference (QRM).

A full call should be used on Single Side Band (SSB). Unlike FM where you only hear one station at a time and brevity really is needed for efficiency, on SSB the full call is needed for efficiency.

Consider a HF net check-in with this exchange:

"Check-ins please"

<wait a couple seconds of seemly nasty QRM>

"Thank you, I have: ka9iab, kb0ppm, w0ro"

On a VHF you may hear:

Net control: "Check-ins please"

checkin1 "iab"

checkin2 "ppm"

checkin3 "w0ro"

Net control "iab please"

checkin1 "thank you, this is ka9iab"

checkin2 "this is kb0ppm"

Net control "net recognizes ka9iab, kb0ppm, w0ro"

Net-control proceeds to request the full call for each partial call unless net control knows that each station will have a chance to fully identify within 10 minutes from the time the station checking in first tried transmitting (not the time net control was able to first understand the station).

If you are unfamiliar with SSB operation you need to be aware that with SSB you can hear many calls at the same time; unlike FM. Therefore the most effective communication is to always use your full call. In a DX, or contest pile up, partial calls are handled last. The reason is simply the speed of the exchange. The DX station simply saying "ka9iab 59" is much quicker than the exchange "station ending with iab"; "ka9iab"; "ka9iab 59".

Using the full call-sign is also underscored in many ARRL publications and presentations as well as other organizations and governments around the world. One such ARRL presentation is: "Ethics and Operating Procedures for the Radio Amateur" where one bullet item states: "Identify yourself with your FULL call-sign, not just the suffix, it is illegal to use just the suffix"

73,

Dan

WØRO

Need More Stuff to fill all the pages!

December Contest Corner

The follow is a select list from <http://www.hornucopia.com/>.

There are many more contests available on the site. I find the 8-day contest calendar useful. Thirty minutes, an hour or the full contest time is a great way to perfect a new operating mode, digital setup, or completely loose yourself if it becomes addicting.

Links to rules, where to submit logs, and other contest specific information can be found on this site.

Selected contests from 8-Day Calendar that can be found at: <http://www.hornucopia.com/contestcal/contestcal.html>

Date	Contest	Time
Dec-5	ARRL 160 Meter	2200Z(5th)-1600Z(7th)
Dec-6	ARRL EME	0000Z(6th)-2359Z(7th)
Dec-7	Ten-Meter RTTY	0000Z-2400Z
Dec-7	CQC Great Colorado Snowshoe run	2100Z-2259Z
Dec-13	ARRL 10-Meter	0000Z(13th)-2400Z(14th)
Dec-21	ARRL Rookie Roundup—CW	1800Z-2359Z
Dec-22	Run or the Bacon QRP	2100Z-0300Z
Jan-3	ARRL RTTY Roundup	1800Z (3rd)-2400 (4th)
Jan-3	EUCW 160	2000Z (3rd)-0700 (4th)



VE Testing Colorado Springs (PPRAA)

Pikes Peak Radio Amateur Association (PPRAA)

When:
Feb, Apr, Jun, Aug, Oct, Dec
2nd Saturday at 9 AM

Location:
Colorado Technical University (CTU)
4435 North Chestnut
Colorado Springs, CO 80907

Directions:
<http://ppraa.org/ve-testing>
or contact:
Dan Martin
VE@PPRAA.org



VE Testing Woodland Park (MARC)

MOUNTAIN AMATEUR RADIO CLUB (MARC)

When:
Jan, Mar, May, Jul, Sep, Nov
1st Saturday at 10 AM

Location:
Woodland Park
Woodland Park Library-
Community Meeting RM
218 East Midland Avenue

Directions:
<http://www.nx0g.org/ve.html>
or contact
Wes Wilson (KØHBZ)
k0hbz@arrrl.net
Call (719) 687-8758



Applicants will need the following items:

1. A valid PHOTO ID, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).
2. Your FRN or SOCIAL SECURITY NUMBER (now required – this includes children).
3. Your CURRENT ORIGINAL amateur radio license (if any) and a PHOTOCOPY for the VE Team to keep.
4. The CURRENT ORIGINAL CSEs you have and a PHOTOCOPY for the VE Team to keep.
5. Cash, Check or Money Order for \$15 (standard ARRL VE Fee). Checks and money orders should be made out to ARRL. This covers all exams you wish to take at this VE session.

NOTE: PPRAA and MARC VE Team policy, as with many VE

Teams, is to not allow same day retests on failed exams.

PPRAA – Colorado Springs testing only:

Anyone passing their Technician Class examination at a PPRAA test session will receive a free year's membership to the Pikes Peak Radio Amateur Association

Japanese Satellites Carry Ham Radio Payloads - Deep Space

Two Japanese Satellites Will Carry Ham Radio Payloads into Deep Space this Month

Two Amateur Radio satellites, Shin'en 2 (Abyss 2) and ARTSAT2: DESPATCH, will be heading into deep space this month. The satellites will hitch a ride with the Japan Aerospace Exploration Agency (JAXA) Hayabusa 2 asteroid mission, which is scheduled to launch on November 29.

A 17 kg, 50 cm diameter polyhedron, Shin'en 2, developed by Kyushu Institute of Technology and Kagoshima University, will be the first satellite to carry an Amateur Radio Mode J linear transponder into deep space. The inverting SSB/CV transponder uplink will be 145.940 to 145.960 MHz (LSB), and the downlink will be 435.280 to 435.260 MHz (USB). It also will include a CW beacon on 437.505 MHz and WSJT telemetry on 437.385 MHz.

"For confirming the operational status of the spacecraft in deep space, the know-how of the Moon-reflecting communication technology can be applied. By using an Amateur Radio service transponder, amateur stations can communicate with each other when the spacecraft is in near-Moon orbit," a pro-

ject outline on the Shin'en 2 website explains. "Beyond this distance, signal detection by Morse code and telemetry data transmitted from the spacecraft will be performed." The Hayabusa 2 project is expected to help pave the way for future lunar rover missions.

Hayabusa 2 will make a round trip to the C-type asteroid 1999 JU3, arriving at the asteroid in mid-2018. It then would survey and take samples of the asteroid before departing in December 2019, and return to Earth in December 2020.



Shin'en 2 will be placed into an elliptical orbit around the Sun between Venus and Mars. Its inclination will be almost zero, which means Shin-En2 will stay in the Earth's equatorial plane. The distance from the Sun will be between 0.7 and 1.3 AU (an astronomical unit is 149,597,871 km).

The ARTSAT2:DESPATCH "art project" satellite -- a 1U CubeSat -- is a joint project by

students at Tama Art University and Tokyo University. It will carry a 30 kg "deep space sculpture" developed using a 3D printer, plus an Amateur Radio payload -- a CW beacon at 437.325 MHz. At its maximum operational distance, it will be some 3 million km (1.86 million miles) from Earth about a week after launch. -- Thanks to AMSAT-UK

The Shin'en 2 satellite during assembly and testing.
[Courtesy of Kyushu Institute of Technology/



Kagoshima University]

**PIKES PEAK RADIO
AMATEUR
ASSOCIATION**

Send membership application to:

Pikes Peak Radio Amateur
Association, Inc..
P.O. Box 16521
Colorado Springs, CO 80935

General Questions:
ppraa@ppraa.org

ØBeat:
zerobeat@ppraa.org



ppraa.org

Get Radio Active, get on the air!

Membership Application:

Date: ____ / ____ / ____ New Membership: Yes / No

Name: _____

Address: _____

City/State/Zip: _____

Call: _____ Class: ____ Phone # (____) _____

Email: _____

Are you a ARRL member: Yes / No

Additional Family Members:

Name1: _____ Call: _____ Class: ____ ARRL Member: Yes / No

Name2: _____ Call: _____ Class: ____ ARRL Member: Yes / No

Name3: _____ Call: _____ Class: ____ ARRL Member: Yes / No

____ \$15.00 Full Member

____ \$10.00 Full Member over 65

____ \$18.00 Family Membership

____ \$12.00 Family Membership over 65

\$____ Membership Amount

\$____ Scholarship Fund Donation

\$____ PPRAA General Fund Donation

\$____ Total

2015 Scholarship Fund

There are multiple ways to donate to the PPRAA Scholarship Fund.

1. Use the form found on this page and send it, along with a check to PPRAA.
2. On the PPRAA web site you can donate via PayPal
3. At club meetings
4. Directly to the our scholarship fund.

Make checks to:
PPRAA Scholarship

The scholarship fund can be reached at:

FAR Scholarship Committee
P.O. Box 911
Columbia, MD 21044

Ø- Beat Banner

Photo by Dan—WØRO

The Ø-Beat banner picture was taken of Pikes Peak from Garden of the Gods with Kissing Camels in the foreground..

The theme of the banner is Pikes Peak. If you would like to submit pictures for the Ø-Beat banner, please send them to:
zerobeat@ppraa.org

Please Include "[Ø-beat]" as part of the subject line.