

# FEEDBACK

APRIL 2015

## Hams in Space -- Harold "Van" Van Daveer, KØHCV Slow Scan Television from the ISS



SSTV stands for Slow Scan Television. Slow Scan TV is the process of receiving a picture one line at a time over a period of several minutes.

It is a fairly simple process to receive a picture. All you need to do is connect the audio output of your receiver to the input of your soundcard and use a program capable of decoding the picture. This can also be accomplished by holding the computer microphone close to the speaker of the radio. It becomes a little more complicated if you want to

transmit an SSTV picture.

There are several free programs available that allow you to send and receive slow scan pictures using your radio and computer sound card. One of these is MultiPSK. This is a good program because it can decode many different types of data transmissions besides SSTV.

Another one dedicated to receiving SSTV pictures is RX-SSTV by ON6MU. This is a freeware program and works very well.

SSTV can be used on the ham bands and 14.230 MHz on the 20 meter band is designated as an SSTV frequency. You can often find other hams conversing with pictures on that frequency.

*see SSTV on page 10*



## APRIL MEETINGS

**April 10** – VHF Shootout -- Lon Martin, KØWJ (Note 6:00 start time)

**April 24** – Integrating SDR into your Shack - Eddy Paul, KYØF

The Johnson County Radio Amateurs Club normally meets on the 2<sup>nd</sup> and 4<sup>th</sup> Fridays of each month at 7:30 PM at the Overland Park Christian Church (north entrance), 7600 West 75<sup>th</sup> Street (75<sup>th</sup> and Conser), west of the Fire Station.

Much of the membership travels to the Pizza Shoppe at 8915 Santa Fe Drive for pizza buffet and an informal continuation/criticism/clarification of the topics raised at the meeting ... or anything else.

*Leave the church, turn right (west) on 75th. Turn left (south) on Antioch. Turn right (west) on Santa Fe. Pizza Shoppe is just past the Sonic on your left.*

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-> FEEDBACK <-

*A publication of the  
Johnson County Radio Amateur Club, Inc.*

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\* \* \*

**Chip ACØYF and Deb KDØRYE Buckner, Editors**

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***So What Are YOU Doing?***

In December, Herb Fiddick, NZØF faced the problem of remote operation of special event station WW1USA. That Herb solved the problem is hardly news. Rather than stop there, however, he asked himself if there might be someone else who could learn from his experience. The resulting two-part article for FEEDBACK not only introduced the idea of remote operation to many new hams, but has drawn praise from old hands from far beyond Johnson County

A couple of months later, "Van" Van Daveer, KØHCV saw that the International Space Station would be transmitting slow-scan television images to Earth. He offered the images to the FEEDBACK and--with a little urging--was persuaded to introduce the basics of slow scan amateur television to our readers.

Someone is going to show up at the VHF shootout with a homebrew antenna that puts the commercial products to shame. How--and why--did he design it the way he did? Will you understand why? Might there be a ham who doesn't?

The online Universal Licensing Service database shows that the FCC has granted 533 Technician licenses to Kansans since January 1, 2014. Even if you think that someone else knows more about a topic than you do, you know more--and can help--these new hams.

What are you doing? Tell us--and them--about it.



-- **Chip and Deb**

**PRESIDENT'S CORNER**



I want to thank Club vice president, **Aaron Boots, AAØRN**, for stepping up and leading the Club meetings for the last several weeks

while I was busy with Lenten activities. Spring is looking to be busy for everyone with many club activities on the plate. The World War I and Ensor requests and public service events will fill our weekend calendars.

**Lon Baker, KØWJ** has gotten the club shirt project back on track. Special thanks are due to new ham **Alex Plassmeyer, KEØCVD**, for ideas on sourcing shirts and the hams who volunteered for a shirt committee.

**Don Warkentien, WØDEW** is talking about Ensor campfires, again. Keep an ear open on the repeater for his announcements.

**- Bill Gery - WA2FNK**

## LOCAL MEETINGS AND FM NETS

	SUN	MON	TUE	WED	THU	FRI	SAT
AM	<b>0:00 Paul Revere 146.94- (88.5)</b>				11:00 Quarter Century Wireless Assn - RC's Restaurant, 135th & Wornall		07:00 - Santa Fe Trail ARC @ Perkins, Santa Fe E. of I-35, Olathe 09:00 - Ray/Clay ARC - Bargain Town (Hwy 10&13), Richmond, MO
18:00	<b>18:45 Miami County D4 ARES/Paola 147.360- (151.4)</b>	18:30 4th: KCDX Club @ Better Homes & Gardens Realty, 8101 College Blvd, #100 OPKS	<b>JoCo ARES Simplex 146.450</b>				
19:00	<b>Wheat State Net/Paola 147.360- (151.4)</b>	<b>145.47- (151.4) JoCo ECS</b> 1st: Clay Co ARC @ Liberty Hospital (Dialysis Ctr - Lower Level)	<b>JoCo ARES 145.29+ (151.4)</b> 2nd: Indep. FM ARC, St. Matt's UMC, 2415 R D Mize Rd., Indep, MO 3rd: Heart of Amer RC - Red Cross HQ, 211 W Armor, KCMO 3rd: Testing @ Community Christ, 63rd & Manning, Raytown	2nd: Douglas Co ARC @ Douglas Co Fairgrounds Bldg#1 2nd: Wheat State Wireless Assn @ Paola Fire Station	Jayhawk ARS 147.150+ (151.4) 1st: Pilot Knob ARC @ Leavenworth Co Courthouse - Emer. Op. Ctr.	3rd: Santa Fe Trail ARC Meeting and Fun Night @ Faith Technologies, 11086 Strang Line Rd, Lenexa	
19:30	<b>Swap and Shop 145.17- (151.4) Pilot Knob ARC 147.00- (151.4)</b>		<b>JoCo SATERN 145.13- ()</b>	<b>Clay Co ARC 146.79- (107.2) Pilot Knob ARC 147.00- (151.4)</b>	4th: Raytown ARC @ basement of Comm of Christ, 63rd & Manning, Raytown	2nd/4th: JCRAC "Regular Meeting" @ OP Christian Church, 7600 W 75th St. OPKS	
20:00	<b>Douglas Co ARES 146.76- (88.5) Raytown ARC 145.17- (151.4) Clay Co ARC 147.33+ ()</b>	<b>145.13- () KC Assoc of the Blind ARC 147.375+ (156.7) Ray/Clay ARC</b>	<b>Southside ARC 147.12+ () Santa Fe Trail ARC 147.24+ ()</b>	<b>Johnson Co RAC 443.725+ (151.4)</b>	<b>Johnson Co RAC 145.29+ (151.4)</b>	<b>VA Casual/Ham Roundtable 443.500+ (151.4)</b>	
20:30				<b>Jackson Co ARES Digital Training 146.97- ()</b>	Independence RACES 145.31- ()		
21:00	<b>Right Wing Wacko Net 146.97- ()</b>			<b>Swap and Shop 147.09+ ()</b>		2nd/4th: JCRAC "Annex Meeting" @ Pizza Shoppe, 8915 Santa Fe Dr, OPKS	

Local nets, meetings and testing sessions are posted as the FEEDBACK editor becomes aware of them.

A net is "local" if it can be heard on an attic VHF/UHF J-pole near I-435 and US69. Boldfaced type indicates that FEEDBACK heard the net. Plain type indicates that someone reported it to the FEEDBACK or referred to it on Larry's List, but the FEEDBACK has not confirmed its presence.

A meeting is local if the person who prepares the calendar thinks that it is local.

## Johnson County Radio Amateurs Club - March 13, 2015 Meeting Minutes

Meeting Date: Friday March 13, 2015. The meeting Started at 7:30PM.

Attendance: Self introduction with name and call sign. 27 signed the check in sheet. This was followed by the Pledge of Allegiance.

The Minutes from the February 27, 2015 meeting were read and accepted with 1 opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand	\$ 282.11
Checking Account	\$ 530.08
Savings Account	<u>\$ 7,536.26</u>
Total	\$ 8,348.45
Repeater Operating Reserve	\$ 763.87
Memorial Fund	\$ 225.00
Active Members	139

### Old Business:

- Repeater Update – The Last part of the new 2m Repeater arrived and has been installed.
- VHF Indoor Shootout is being planned for the 1<sup>st</sup> meeting in April. Tentative start time is 6:00 PM. More details to follow.
- Field Day 2015 – June 27-28, 2015. The organization team is looking at having Club members wear matching shirt so they can easily be identified by visitors.
- Club Shirt Update – **Lon Martin, KØWJ** gave a short presentation on some information he collected. Lon reported an order of 50 shirts would cost \$27 each. This would include name and call sign embroidered on the left side of the shirt and using the current Club Logo Patch attached on the right side. Shirts would be safety yellow in color. Single shirts orders would jump to \$42 each. A discussion followed and the following idea was put together.
  - The color safety yellow was not popular and Teal was a more popular choice (Blue, Black and Red were also brought up as possibilities).
  - All shirts should have a pocket and be a T-shirt, Polo Shirt, and Button Down Shirt.
  - Using the Club's Logo Patch was a good idea but some felt it might feel stiff or cause wrinkles after repeated washings. Some wanted the option of an embroidered Club Logo.
  - Have standard name tags made with members Call Sign and Name.
- After this discussion **Alex Plassmeyer, KEØCVD** (a new Ham and making his first visit to our meeting) offered to help source shirts for the Club. The club accepted his offer through a unanimous vote. An update will be provided at the next meeting. Thank you Alex.

### New Business:

- None.

### Reports:

- 6 m – None.
- 10 m SSB Roundtable – 4 participated on March 12.
- 440 Wheat Shocker net – 17 check-ins on March 11 and 22 check-ins on March 4.
- 2m Wheat Shocker net – 26 check-ins on March 12 and 25 check-ins on March 5.
- Licenses Anniversary – None
- Birthday's – None
- Silent Key's – None
- HF Activity – Island off the coast of Australia.

### Announcements:

- Ararat Shrine April 18, 2015.
- Hamclass.org Technician Class April 4 and 11 at the Wyandotte County EOC.
- ECS Protocol Training March 14.
- Olathe Marathon April 18, 2015.
- MS Walk April 11, 2015.
- Campfire at Ensor on Saturday March 14.
- Watch Larry's List for upcoming events.

Business meeting adjourned at 8:16 PM

### Program:

- The Program for this meeting will be "The Lost art of modifying Radios" by **Dennis Baker KEØQM**.

Submitted by **Ted Knapp, NØTEK**, Secretary.

## *Johnson County Radio Amateurs Club - March 27, 2015 Meeting Minutes*

Meeting Date: Friday March 27, 2015. The meeting started at 7:30PM.

Attendance: Self introduction with name and call sign. 43 signed the check in sheet. This was followed by the Pledge of Allegiance.

The Minutes from the March 13, 2015 meeting were read and accepted with 1 opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand \$ 330.11 / Checking Account \$ 370.04 / Savings Account \$ 7,536.26 / Total \$ 8,236.41

Repeater Operating Reserve \$ 768.87 / Memorial Fund \$ 225.00

Active Members 140

### Old Business:

- Repeater Update – Both are working well! As a reminder the new 2m Repeater has a 3 minute timeout feature. This repeater no longer has a courtesy tone so you must wait until the repeater drops (makes that “Ker-chunk” sound) before Keying the mike so it can re-set itself.
- VHF Indoor Shootout is April 10, 2015 at 6:00 PM inside the Church (our regular meeting location). Rules and more information are available on the website.
- Field Day 2015 – June 27-28, 2015. Looking for someone to organize/arrange the Food. Also, is there any interest in a Fox Hunt sometime that weekend? See **Jay Greenough, WJØX** if interested.
- Club Shirt Update – **Alex Plassmeyer, KEØCVD** gave a presentation on what he has found. Teal colored shirts over all three styles are hard to find. Navy or Gray are easier to find in all three style options. Cost for the “blank” T-shirts are in the \$5 to \$6 range, Polo shirts are in the range of \$7 to \$14 and Button-down shirts are in the range of \$9 to \$14. Screen print and/or embroidered Logo will cost extra depending on the number of shirts ordered. After a short discussion it was suggested that a small team be organized to make a final recommendation to the club. Team members will be **Alex Plassmeyer KEØCVD**, Emily Klein (Alex's girlfriend who works for a shirt distributor), **Lon Martin KØWJ**, **Eddy Paul KYØF**, and **Cal Lewandowski KCØCL**.
- WW1USA Special Event Station May 9-10, 2015. **Herb Fiddick, NZØF** reported that currently the Santa Fe Trail Club is organizing this event however the leader needs to withdraw. Herb was wondering if our Club would take the lead for this date. We would then either trade with them on our event in December or another group would take the December event. As a reminder, the May event is Mother's Day weekend. After a short discussion it was agreed upon to take this event.

### New Business:

- **Larry Woodworth, WØHXS** manager of the Ensor Park and Museum has asked the Club if we would be available to be Ensor Tour Guides as the Museum would like to expand the number of guides available to give tours to the public. After a short discussion a motion was made, seconded and a subsequent unanimous vote followed.
- The Club owns an Automatic Antenna Tuner that is no longer working properly. This Tuner will need to be used for the WW1 event in May. It was suggested that we purchase another Tuner. After a short discussion a motion was made to purchase a new Turner (not to exceed \$300). The motion was seconded and a subsequent unanimous vote followed.

### Reports:

- 6 m – None.
- 10 m SSB Roundtable – 5 participated on March 26.
- 440 Wheat Shocker net – 21 check-ins on March 25 and 18 check-ins on March 18.
- 2m Wheat Shocker net – 24 check-ins on March 26 and 27 check-ins on March 19.
- HF Activity – CW on 17m to Cuba, democratic Republic of Congo.

### Announcements:

- Ararat Shrine April 18, 2015.
- Hamclass.org Technician Class April 4 and 11 at the Wyandotte County EOC.
- Olathe Marathon April 18, 2015.
- MS Walk April 11, 2015.
- ECS Net Control Training March 27.
- WIAW WAS Award applications are now available on the ARRL website.
- Watch Larry's List for upcoming events.

Business meeting adjourned at 8:23 PM

### Program:

- The Program for this meeting was a presentation and demonstration on Raspberry Pi by **Aaron Boots AAØRN**.

Submitted by **Ted Knapp, NØTEK**, Secretary.

## Hambone and the DED -- Jaimie Charlton, ADØAB

"Dude, what are you doing? You know you're not supposed to be prowling around in Uncle Elmer's stuff without his permission!", shouted Hambone, causing Dude to jump like a startled cat.



"Don't sneak up on me like that. You almost scared me into the middle of next week, and I do have Uncle's permission, sort of. I asked him if he had a USB charging cord for my phone. He said he did and I could help myself to it down here in his workshop. That's what I'm doing. So, there!"

"Dude, the charging cords are over by the window, so why are you poking around here?", asked Hambone.

"Well, I, I, didn't see them," replied Dude, grasping for a better reason to be looking through his Uncle's private cabinet. "But I noticed this door was unlocked so I thought they might be in here. Look, some of this stuff is so ancient. This box of weird stuff is marked 1965. Do you suppose Uncle had a pet dinosaur back then?" He added trying to change the subject.

"No, I didn't! And who said you boys could go through my stuff?" Boomed the large voice of their Uncle Elmer who just walked into his workshop.

Looking like they both just discovered a zombie ghost, Dude spoke first. "I was just looking for that charging cord you said I could have."

"And where did I say the cords were?"

"By, by the window. I must have missed them," stuttered Dude, unpersuasively.

"But Uncle, what is this box full of weird parts for?" Asked Hambone after an awkward silence. Both boys had learned from experience the best way to deflect their Uncle's wrath is to ask him a technical question.

***The project was called Shadow Light but we mostly called it D.E.D.***

"Well, that is what's left of a top secret project that actually began during the Cold War and lasted well into the 1960s," explained Uncle Elmer, taking the bait and settling onto his workbench stool.

"The project was called *Shadow Light*, but we mostly called it D.E.D. Towards the end, we actually had moved from the theoretical physics to a working model and were even making plans to put it into production. But then one day we were informed that the project had been discontinued, all funding stopped. We were ordered to destroy all models and documents, collect our final paychecks and leave.

We followed our orders except I managed to save a few parts and papers in this shoebox.

"But Uncle, what did DED do?" pleaded Hambone.

"What did DED do, what did DED do. That's fun to say," added Dude.

Ignoring Dude's attempt at humor, Elmer continued. "Originally, *Shadow Light* was a stealth project. It was based on some principles of coherent electromagnetic radiation discovered by Albert Einstein. But it wasn't until the early 1950s that the mathematical basis for masers was discovered and physical units actually built. After that, the scientific community exploded with ideas involving coherent extremely high frequency waves. One of those ideas was a means of creating artificial darkness so hence the name, Shadow Light. But, the final prototype looked a lot like an oversized diode so we renamed it DED for Dark Emitting Diode. Unfortunately, it also augured the fate of the project."

"Uncle," interrupted Hambone, "what's a maser?"

"Oh, a maser is the precursor of the laser. It amplifies very short microwaves using the same principle as lasers use to amplify light.

The War Department saw military applications for artificial darkness and put together a team of about 10 engineers and scientists, including me, to make it work. We were civilians, but we might as well have been in the military for all the rules we had to follow.

Our thinking at the time was since light is really just very short radio waves, we should be able to cancel it out by supplying radio waves of the same frequency but 180 degrees out of phase."

"That doesn't sound too hard."

***see Hambone on page 7***

**from Hambone on page 6**

"It was and is. Remember, a working laser hadn't been invented yet so we were trying to work well ahead of the actual science. We started by trying to make objects invisible to radar microwaves. The idea was a receiver inside a target, such as an airplane, would detect the enemy's radar signal. Our Shadow Light transmitter would then emit a pulse of the same frequency and strength, but 180 degrees out of phase and cancel the reflection. That proved to be easier said than done."

"Why was that?" asked Dude.

"First, it was very difficult to accurately determine the frequency and phase of the incoming radar pulse. Sure, we could get close, but not close enough. Even when we did identify the signal, it was difficult to configure our transmitter to generate a similar, but out-of-phase, signal fast enough. We had plenty of samples because the Russian radars sent steady streams of pulses. But, since each lasted only a few microseconds and changed frequency, we had way less than 0.05 microseconds to identify and cancel it. If we took any longer than that, enough of the pulse was reflected back for the radar to see us.

We tried other schemes such as ground-based wave cancellers as well as anticipatory and delayed pulse generators. These last two were somewhat successful and enjoyed some deployment. They did not hide the target, but made it difficult to determine its location."

"But Uncle Elmer, these parts don't look like radar parts," observed Hambone.

"They aren't," replied Elmer. "We thought we were at an impasse, our goal of invisibility, even if only to radar, was beyond our reach. Then, out of the blue, we received a scientific paper, of sorts. The name of the author was redacted as were any identifying footnotes and references. But, it completely changed the course of our project. The original document was destroyed, but my notes here give some idea what it contained.

It explained that although we normally think of light--yes, we are talking about light not microwaves--as electromagnetic waves, it can also be thought of as tiny particles called photons. I know this is common now, but it wasn't back then. The paper explained that although all photons travel at the same speed, they have different energies depending on their electromagnetic wave frequency. They also have a property called *spin*. Spin would prove useful because it always has a magnitude of +1 or -1 sometimes called up or down. This gave the project a whole new direction.

**Just like Harry Potter's invisibility cloak, exclaimed Dude.**

We thought that rather than try to cancel out a microwave reflection, we could actually make the target optically invisible by capturing or canceling photons."

"Wow! Just like Harry Potter's invisibility cloak," exclaimed

Dude.

"Not exactly. On paper at least, we found a way to cause a dark area, or shadow, by capturing and negating photons. After a lot of experimentation, we were able to build a working prototype that looked a little like a spotlight. That's where the project's name came from. But this was not very useful in broad daylight."

"Why is that?" asked Dude.

"Well, you couldn't see the target, but you knew it had to be inside that black cloud-like shadow area. We found, however, it was effective in the jungle where the Viet Nam war was fought. Snipers loved it. Here. Look at these photos."

"That's amazing!" Said Hambone. "These pics are the same as the other ones except there are soldiers everywhere. Hey, there you are."

"I didn't know you were in Viet Nam," exclaimed Dude. "You were so much skinnier, then."

"Yes, we discovered that shadow light was very effective at hiding men and equipment by creating natural looking shadows in a jungle environment. It also worked well in buildings and anywhere that you might expect to find natural shadows."

"But Uncle, I still don't understand how it works," asked Dude as he studied the parts in the shoebox.

"The secret lies in the quantum physical effect called *entanglement*. Entanglement is a condition that can be made to exist between two or more subatomic

**See HAMBONE on page 8**

**From HAMBONE on page 7**

particles, such as photons, in which they act as if they were a single entity or *singlet*. That is, anything you do to one is immediately felt by the other. No one knows exactly the mechanism behind entanglement, but the effect does not weaken with distance and acts faster than the speed of light." After pausing for dramatic effect, Elmer continued.

"Our scheme was to generate a flood of entangled photon pairs of various energies or wavelengths. Then, strip away one photon from each pair leaving a flood - okay, half a flood - of unpaired photons. The unpaired photons were directed towards the area we wanted to shadow. Because these lone photons were previously paired, they "wanted" to be paired again. Consequently, they would be attracted to the ambient light photons and entangle them. The result would be new pairs of photons with new energies. New energies translate into new wavelengths. We selected our entangling photons such that the energies of the new pairs put them into the ultraviolet wavelengths which are invisible to the human eye."

"That is so cool," exclaimed Hambone. "But, why did your unpaired photons want to link up with the ambient light photons?"

"The secret is the spin. Paired photons have opposite spins so, our newly unpaired photons would attract and attach themselves to ambient photons of the opposite spin."

"I guess the law of opposites attract goes deeper than the birds and the bees," said Dude.

Ignoring his little brother and getting serious, Hambone asked, "How exactly did you create the entangled photon-pairs?"

"That was not easy. When we received that mysterious paper, we also received about a hundred of what appeared to be transparent crystals. We discovered that when a beam of coherent light entered one side of a crystal, it emerged as two beams of entangled photon-pairs from the other. One beam contained only +1 spin photons and the other beam contained only photons with spin of -1.

***I've never seen anything this cool, replied Hambone.***

We never determined the origin of the crystals or exactly their composition. They appeared to be birefringent calcite, but we could never quite pin down some impurities. One thing we did notice is that with use, the crystals lost their beam splitting properties.

The final prototype was pretty simple. That little laser diode and the crystal were mounted on this tiny frame so the laser's light passed through the crystal and then through that spatial modulator which is really just a small LCD display without the backlight. The modulator worked by itself and was powered by the same source as the laser diode. That piece of black plastic was used to absorb one output beam and thus create the unpaired photons. The lens just spread out the photons to make the dark area larger.

Oh, look at the time, I've got to go to a meeting. Please put this stuff away and lock the cabinet." Said Elmer as he dashed out of the workshop. Hambone started to put the parts back in the shoebox when Dude stopped him. "Hey, let's see if we can make this work."

"No, Uncle Elmer said to put it away and that's what I'm going to do."

"It won't hurt to just play with it a little. Let's just see if this old-time laser diode still lights. I'll get some batteries." Said Dude

"Well, okay," said Hambone, curiosity getting the best of him. "Be careful not to break anything." The excitement of doing something behind their uncle's back drove the boys to a heightened frenzy of wiring, soldering and assembling. After an hour, they had more or less rebuilt their uncle's shadow light and were ready to test it.

"Put the batteries in, Hambone, I can hardly wait to see this thing work."

"This is going to be so fun, I've never seen anything this cool," replied Hambone as he shoved a couple of D cells into the old battery holder.

"Look!" shouted Dude, "the laser shines green and the modulator is doing something."

"Yeah, but what?" replied Hambone. "I don't see any shadow anywhere, but it looks like the modulator is displaying something. Oh no, it says,"

APRIL FOOL  
- Uncle Elmer



## *JCRAC holds its first-ever VHF antenna shootout on April 10*

JCRAC will hold its first of what it expects to be annual VHF "shootouts" before its April 10 meeting. The event is open to any licensed ham who can bring a 2m handi-talkie [HT] that he can tune to transmit at 146.43 MHz.

A "shootout" is an antenna test or competition. Those interested in a "test" can--within the limits of the rules--learn about the effectiveness of any homebrew or commercial antenna they may have in comparison to the original issue "rubber duck". Those interested in a "competition" will be comparing the results of their best designs against similarly inclined hams.

Organizer **Lon Martin, KØWJ**, told the club that, as a mechanical matter, the club would run the output of an HT directly into an Agilent 8920 RF test set to determine its power output relative to a one watt standard. Then, with antenna affixed, participants will send a signal from the HT to the receive site, which will measure signal strength. The highest signal strength, as adjusted by the normalization handicap will be declared the winner.

Martin went on to say that he had had enough experience with JCRAC club members that he felt he needed to establish a set of rules.

**-- JCRAC FEEDBACK --**

### **Official VHF Shootout Rules**

1. Any radio regardless of power output.
2. Any antenna that is sufficiently supported by the radio. No hand-held antennas of any kind. Counterpoises may be used as long as they are solely supported by the radio.
3. You may orient the antenna any way you want.
4. When asked to transmit, you will depress the PTT button for five seconds at which time the receive site will record the received signal strength.
5. The highest recorded signal strength will be declared the winner.

### **Jay Greenough, WJØX -- JCRAC Field Day Coordinator** **Field Day is June 27-28 at Shawnee Mission Park**

As the largest single weekend of Amateur Radio annually in the US, Field Day has something for everyone. There are new experiences for even the veteran operator – from new digital modes to explore to new antennas and equipment to try to making new friends with visitors on Field Day. The combination of “tried and true” plus “new and different” is what makes this event special.

We encourage all Field Day 2015 participants to try something new this year. Challenge yourself and be adventurous. Have you always wanted to try to contact an amateur satellite but never quite got around to it? Plan and work one of “the birds”.

Are you rusty on passing traffic or hosting VIPs to your Field Day QTH? There is no better time to polish those skills than the fourth full weekend in June.

There are no rule changes for Field Day 2015 which means we can be even more creative with

station operations, layout, display, etc. The Public Relations and Publicity bonuses are excellent opportunities for us to carry the message of Amateur Radio to our local communities. We can once again use the GOTA station to help teach newly licensed amateurs how to be active on the air.

We want to reach out to community youth groups – such as Girl/Boy Scouts or other youth organizations – to promote Field Day as an education opportunity. The more we promote that Amateur Radio is alive, well and FUN, the greater the return YOUR investment of time.

Between now and Field Day we will be reviewing, discussing and looking for your ideas for Field Day. We need to determine which and how many stations, layout, teams for each station plus food and greeting tent. Come and join in being a part of the planning group for one of our largest events of the year.

**from ISS on page 1**

When I found out via Larry's List that the International Space Station was going to be transmitting SSTV pictures I set about getting ready to receive them. This required two different actions. First, I needed to know when the ISS would be in range and second have my radio connected to my soundcard and an appropriate SSTV program running.

I have several satellite prediction programs but for tracking the ISS I went to the ISS website at <http://www.issfanclub.com/>. This website has current information on space station activities as well as a tracking screen and pass prediction information.

Once I knew when to expect the space station to be within range I tuned my transceiver to 145.800 in FM mode and started the RX-SSTV program on the computer. It starts automatically when it hears the SSTV signal.

Several different things can happen at this point. If the ISS is already transmitting a picture when it comes into range the RX-SSTV program will start receiving the picture. However you will only decode the bottom portion of the picture. If the ISS starts transmitting once it is within range, you will begin receiving the picture from the beginning. But unless the station remains in range for the duration of the picture you may only get the first portion of the picture.

So the optimum conditions would be for the ISS to pass directly overhead since this would give you the longest possible reception window. Then it would



be best if they started transmitting once they just came into range. This would give you the best possible conditions to receive the complete picture.

There are many different SSTV modes and unfortunately the ISS used a mode (PD180) that requires 3 minutes to transmit one picture. This makes it difficult to get a complete picture unless the optimum conditions described above are met.

I was lucky that these conditions were met on one pass and I was able to copy a complete picture. On subsequent passes these were not met resulting in getting the first part of one picture and the last part of another. You can see for yourself how these conditions affect reception of the picture.

There are two callsigns assigned to the ISS. NA1SS and RS0ISS. The SSTV pictures were sent using the RS0ISS callsign as can be seen in the pictures.

There also is a packet digipeater aboard the ISS that operates on 145.825 Mhz FM. Generally you can digipeat APRS and packet data through this station on any pass where the station is within range and see the results on <http://www.ariss.net/>. I have even had packet conversations with other stations in the US via this digipeater. But that is for another article.



**-- JCRAC FEEDBACK --**

FRIDAY	SATURDAY	SUNDAY
APRIL 3	4 Missouri QSO Party -->	5 <-- Missouri QSO Party
10 Ozarkcon QRP Conference Stone Catle Hotel, Branson, MO www.ozarkcon.com	11 Ozarkcon  MS Walk - Sporting Park Herb Fiddick	12 Yuri Night HMS Beagle, Parkville MO
17	18 Olathe (Garmin) Marathon Herb Fiddick/Dennis Smeltzer  Shrine Ham Bash - KCMO  VE Testing @ 9am - JoCo Library, 151st and Antioch	19
24 Independence/EJC CERT Basic Training (Day 1 of 4)	25 Independence/EJC CERT Basic Training (Day 2 of 4)  W5YI Testing @ 9am Mid-Continent Library - Blue Springs 850 NW Hunter Drive	26
MAY 1	2 Bull Creek Bike Bash, Springhill, KS Steve Rainey	