

# High-Country Static

August 2017

News and Information Concerning  
 Amateur Radio in Northern Arizona and  
 Beyond

Welcome to the Coconino Amateur Radio Club (CARC) Monthly Newsletter. CARC is a non-profit club devoted to providing communication services to local volunteer agencies and events. Meetings are held the second Thursday of each month at the East side Sizzlers Restaurant Highway 66 at Fanning Dr. Flagstaff, at 7:00PM. All persons interested in amateur radio, whether licensed or not, are welcome to attend.

*Coconino SkyWarn meets 1900 every Monday evening on the 146.98 repeater and at 1930 on the Navajo Mountain CACTUS repeater and 146.480 simplex.*

*Coconino ARES meets 1900 every Wednesday evening on the 146.98 repeater and at 1930 on the Navajo Mountain CACTUS repeater and 146.480.*

## Officers:

President: Tom Shehan KY7WV

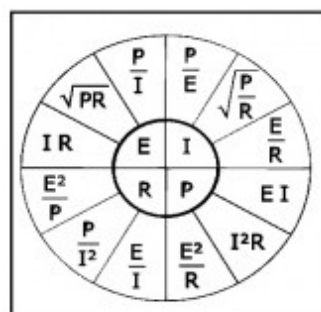
Vice-President:

Secretary: Erv Perelstein, KE7QFI

Treasurer: Pat Traber, KE7QFG

PIO: Vacant

Newsletter: Janice Enloe, KI6WCK



E = voltage I = current  
 R = resistance P = power

## Calendar of Events for 2017:

### August

- 1 National Night Out (First Tuesday in August)
- 5 Toys for Tots/Fat Tire Bicycle Ride
- 12 Big Brothers/Big Sisters
- 27 Arizona Trail Marathon at North Rim

### September

- 4 Williams 10K Labor Day Run
- 23-24 Flagstaff to Grand Canyon 100 Mile Run

### October

- 14 Soulstice Mountain Trail Run
- 21 Amateur Radio License Exams at North Country Health Care
- ?? MARS COMEX

### November

- 11? Girls on the Run

December

2 SkyWarn Recognition Day at NWS Belmont (UTC date)

10? Christmas party

---

## Thank you and Help Wanted:

Thank you to all who have run the Monday and Wednesday night nets:

Flagstaff: Tom KY7WV, Erv KE7QFI, Mike KD8RQV, Bob KF4RKS, Mary Lou Hagan, KG7TPK  
Mike Clever, KD8RQV, Phil Brunner, AE7OH

Page: Eric Kg7UNI, Nancy KG7WKS and Vince WB7UWW

If anyone one would like to help with the nets, please let Tom know. It is good practice for radio skills and the script is written for you to use.

---

## Licensing Exams for 2017:

Remember to bring your HAM license and a copy (if you are upgrading your license), a government issued picture ID, a black ink pen, calculator with memory erased and fifteen dollars (exact change is appreciated).

October 21 Amateur Radio License Exams at North County Health Care

<http://wireless2.fcc.gov/UlsApp/UlsSearch/searchLicense.jsp>

Arizona Newsletter: <http://www.arrl.org>

Tutorials: <http://www.arrl.org/tutorials>

[http://www.arrl.org/exam\\_sessions/flagstaff-az-86004-1221-2](http://www.arrl.org/exam_sessions/flagstaff-az-86004-1221-2)

---

## Next Business Meeting:

Our next business meeting will be August 10, 2017 at the East side Sizzlers at the corner of Highway 66 and Fanning. Dinner @1800 and meeting starts @1900.

---

## Minutes of the Coconino Amateur Radio Club

7/13/2017

Meeting Started: 7:00 pm

Secretary's Report: Since the minutes of the June meeting were published in the newsletter, there was no need to read them. Mary Lou Hagan made a motion to accept the minutes and Bill Hagan seconded the motion. The minutes were approved unanimously.

Treasurer's Report: Pat Traber, our CARC Treasurer, reported that the closing bank balance is \$4,433.70 Membership is 51 members, consisting of 47 paid members and 4 lifetime members. Betty Gerlak moved to accept the Treasurer's Report and Ken Held seconded the motion. The report was approved unanimously.

President's Report: After Introductions, Tom Shehan, our CARC President, announced that Jack Lunsford from the Amateur Radio Council of Arizona, (ARCA), presented the HAM of the Year Award for 2017 to Joe Hobart. He discussed the many activities Joe either sponsored or supported to further HAM Radio in Flagstaff and Arizona. Many thanks from the CARC to Joe for his hard work and dedication to HAM Radio.

Vice President's Report: Sandy Meadowcroft, our CARC Vice President, reminded us that this would be her last meeting as Vice President because she and Bob were moving to Prescott this coming week. We thanked Sandy and Bob for all the work they have done for CARC over the past years and wished them luck in their new home in Prescott.

Old Business: The first discussion item was a review of this year's Field Day. Ron Gerlak, the FD coordinator, presented the scores that our challenger clubs submitted:

Oro Valley Radio Club ---	5,554
Cochise Radio Club-----	5,316
CARC-----	5,930

Ron will try to pick up the challenge cup  
for the August meeting.

Ron thanked all members who participated, (39 in all). He said there were no safety incidents, (thanks to Bob Meadowcroft's planning), and he thanked Northern Arizona DX Club who, along with our SSB contestants, brought our SSB numbers up to 30% higher than our challengers.

Pat Traber gave us a review of the Munds Park Run. She said things went very well and thanked our members for assisting.

Sandy reminded us that the position of Public Information Officer for CARC is still unfilled and she once again asked for volunteers. She reminded us that the position can be shared to reduce the burden on one person and that ARRL has an online class for the PIO position. Nominations should be sent to Sandy or Tom.

Janice told us that the CPR Training is on hold because her management people are up in the air about how to continue. She will let us know if/when they get their problems resolved.

Tom told us that the Memo to Race Directors has been edited and is finished. He will sign, scan and send the memo to race directors and to club members. He has used the memo on two races now and race directors have had positive comments about its use.

Tom directed our attention to Presentations for our monthly meetings. He is planning on providing a talk on power supplies. Erv is still working with DX Engineering to provide a presentation, via the internet, on Station Grounding and Antennas. Joe is planning on providing a presentation on Software Defined Radios (SDR). Tom asked anyone else who would like to make a presentation to please contact him to add them to the schedule. Janice suggested that we hold off on presentations for the summer because of lower attendance due to vacations. All agreed to offer presentations from October thru April.

Tom told us that the new CARC trailer is still awaiting work. He told us that we used the new trailer (as is) for the first time during Field Day and it was a big help. The first meeting of the CARC Trailer Build-Out Committee is scheduled for 7/22 at 1:00 pm at Tom's house. Ken offered to help with planning as he has professional experience designing radio layouts.

50/50 Drawing: Mary Lou won the 50/50 raffle. Lena Wallen won the drawing for a free lunch.

New Business: Tom reminded us that we need nominations for Vice President to fill Sandy's vacant office and that one very important task of the VP is to arrange for presentations before or after our meetings. Tom said he wanted to open elections up to members who do not attend meetings so that they can vote by email. It was questioned whether the CARC By-Laws allow this. Pat and Sandy will review the By-Laws and report back. Pat said we may have to change the By-Laws if email voting is not currently allowed.

Schedule:

## July

22 Amateur Radio License Exams - North Country Health Care, Eric Community Room. Joe coordinating.

23-27 MARS/Amateur Radio Exercise - Erv coordinating

## August

5 Toys for Tots/ Fat Tire Bicycle Ride, Ron and Mike Clever coordinating. Ron organized a test of communications at all radio locations which was very successful.

12 Big Brothers Big Sisters Half Marathon, Bob Meadowcroft coordinating.

27 AZ Trail Marathon at North Rim, Tom coordinating. Still need additional member coverage. Tom said HF on 60 meters worked well there.

## September

4 Williams Labor Day 10 K Run - we are supporting race management in Williams.

23-24 - Flagstaff to Grand Canyon 100 Mile Run, Bill Smith Coordinating.

## October

7 Soulstice Run, Bob Meadowcroft or replacement coordinator needed.

21 VE Testing at North Country Health Care, Eric Community Room, Joe coordinating.

## November

? Girls-On-The-Run. Need a coordinator.

ARES Report: Joe reminded us that now we are in the heart of the fire and monsoon season, we should be checking our backup power; battery, solar, generator, etc., as a very important part of being disaster ready.

Joe reported that the Cactus Repeater, on Navajo Mt., has been repaired so the 7:30 pm northern Skywarn and ARES nets will start again.

Boundry Fire - Joe thanked all stations that monitored the Elden Repeater during the fire, especially Ron Gerlak who spent almost every night on site for CERT and monitored the repeater to call if he needed any assistance. Robert Morse put up his portable tower to help with communications. Thanks to all who participated.

Joe said that Mark Christian ordered an HF antenna from Alpha-Delta that is supposed to receive 75m, 60m, and 40m with no tuning required. He will report on the success of that antenna when he receives and tests it.

There being no further business, Betty moved and Ron seconded a motion to adjourn. Passed unanimously.

Meeting Ended: 8:35 pm

Presentations: No additional presentations this month.

---

## **Congratulations Joe**

Our very own Joe Hobart, W7LUX was named the ARCA Arizona Ham Operator of the Year.



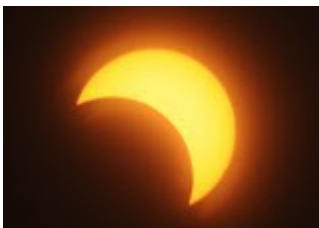
---

## **Solar Eclipse Watchers Will Gather Data from Coast to Coast**

**David Wagman**

U.S. scientists highlighted research projects that will take place across the country during the August 21 solar eclipse. The research may advance knowledge of the sun's magnetic field and its effects on Earth's atmosphere and land.

Experts at the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the National Center for Atmospheric Research (NCAR) [discussed](#) how scientists plan to deploy an array of technologies and methodologies during the eclipse.



"This total solar eclipse across the United States is a unique opportunity in modern times, enabling the entire country to be engaged through modern technology and social media," said Carrie Black, a program director in NSF's Division of Atmospheric and Geospace Sciences. "Images and data from as many as millions of people will be collected and analyzed by scientists for years to come."

"This is a generational event," agreed Madhulika Guhathakurta, NASA lead scientist for the 2017 Eclipse. "This is going to be the most documented, the most appreciated, eclipse ever."

The scientific experiments will take place along the path of totality, a 70-mile-wide ribbon where the moon will completely cover the sun; it stretches from Oregon to South Carolina.

Viewers in any one location may experience the total eclipse for as long as two minutes and 40 seconds. It will take about an hour and a half for the eclipse to travel across the sky from the Pacific Coast to the Atlantic.

For scientists, the celestial event is a rare opportunity to observe the solar corona, the sun's outer atmosphere, which is usually obscured by the sun's bright surface.

Many scientific questions focus on the corona: Why is it much hotter than the sun's surface? What role does it play in spewing large streams of charged particles, known as coronal mass ejections, which strike Earth's atmosphere and can disrupt GPS systems and other sensitive technologies?

Black says that during the eclipse the moon will align exactly with the sun's surface and enable observations of the entire corona, including regions that are rarely detectable.

Obtaining observations from the ground will play a particularly important part in the experiments, she says, because more data can be transmitted than would be possible from space-based instruments.

In addition to focusing ground-based instruments on the sun, scientists will also deploy aircraft to follow the eclipse, increasing the amount of time they can make observations.

An NCAR research team, for example, will use the NSF/NCAR Gulfstream-V research aircraft to take infrared measurements for about four minutes, helping scientists better understand the solar corona's magnetism and thermal structure.

Scientists at the Southwest Research Institute in Boulder, Colo., will use visible and infrared telescopes on NASA's twin WB-57 airplanes to enable a unique look at both the solar corona and Mercury for about eight minutes. The goals are to better understand the movement of energy through the corona and to learn more about the composition and properties of Mercury's surface.

During the eclipse, scientists will also study Earth's outer atmosphere, the ionosphere, a region of the atmosphere containing particles that are charged by solar radiation. Disturbances in the ionosphere can affect radio waves. Because the eclipse blocks energy from the sun, scientists can study the ionosphere's response to a sudden drop in solar radiation.

For example, a Boston University research team will use off-the-shelf cellphone technology to construct a single-frequency GPS array of sensors to study the ionospheric effects of the eclipse. This project could lay the foundation for using consumer smartphones to help monitor the outer atmosphere for disturbances caused by solar storms.

In another experiment, a Virginia Tech team will use a network of radio receivers and transmitters across the country to observe the ionosphere, while researchers at the University of Virginia and George Mason University will use transmitters broadcasting at low frequencies to probe various regions of the ionosphere.

Citizen scientists are expected to play a major role in making valuable observations during the eclipse. "This is a social phenomenon, and we have a significant opportunity to promote this and do all the science we can," Guhathakurta said. Black added, "What makes this an even more valuable opportunity is that everyone has access to it."

The Citizen Continental-America Telescopic Eclipse (CATE) Experiment by the National Solar Observatory, for example, will rely on volunteers from universities, high schools, informal education groups, and national labs for an eclipse "relay race." Participants spaced along the path of totality will use identical telescopes and digital camera systems to capture high-quality images that will result in a dataset capturing the entire 93-minute eclipse across the country.

And a project led by the University of California, Berkeley, will assemble a large number of solar images, obtained along the eclipse path by students and amateur observers, to create educational materials as part of an "Eclipse Megamovie."

"As these projects show, the eclipse will place the sun firmly in the forefront of the national eye," said Scott McIntosh, director of NCAR's High Altitude Observatory. "This is a unique opportunity to communicate the fact that our star is complex, beautiful and mysterious. At the same time, it's more critical than ever to study it, as solar activity can pose significant threats to our technologically driven society."