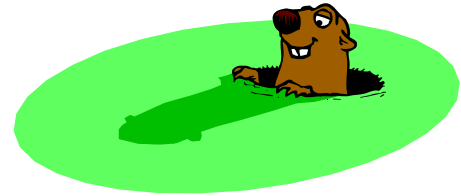


FEBRUARY MEETING

As voted on at the January meeting, this month's regular club meeting will be held on **SUNDAY FEBRUARY 7th at 2 P.M at the NIKE Base Clubhouse.** We hope to see some of you that find it difficult to attend a Thursday evening meeting.

All interested in amateur radio are invited to attend. Neither club membership nor an amateur radio license is required. We look forward to seeing everyone there!



US HAM RADIO GROWS - ELECTS WOMAN PRESIDENT

Amateur Radio had two history-making events in January.

The ARRL, the national association for Amateur Radio, elected Dr. Kay Craigie, N3KN, of Blacksburg, Virginia, as the organization's new President. She is the first woman to hold the top position.

The ARRL also celebrated year-end reports that there were over 30,000 new American Amateur Radio licensees in 2009, capping five years of continuous growth in the hobby.

"All the way back to the ARRL's founding in 1914, Amateur Radio has always existed in a challenging environment. The ARRL will continue meeting today's challenges so hams can continue to serve the public, explore technology and have fun on the bands," she said after the election.

First licensed in 1983, "I was a computer hobbyist

before becoming a ham, so I enjoy exploring digital communications and the many applications of computers in Amateur Radio,"

Craigie has been ARRL Section Manager for Eastern Pennsylvania, Atlantic Division Director and a Vice President. She has served on committees of the ARRL Board of Directors and worked on the League's Enforcement Task Force in cooperation with the FCC. Craigie was instrumental in creating the ARRL Education & Technology Program supporting schools in teaching science and wireless technology.

"When we do what benefits kids," she says, "ham radio will benefit in the long run, too. Ham radio is great for kids. It introduces them to modern commu-

(Continued on page 2)

HAPPY FEBRUARY BIRTHDAY!

Sandy Halik KC2LGK
Bob Koster KA2WYE



tions technology not in a passive couch-potato way but in an active way through discovering how things work and how this technology can be used to help others when there's a disaster."

Craigie also chaired the National Emergency Response Planning Committee, which made recommendations on ham radio responses to emergencies in the US. Dr. Craigie's FCC callsign is N3KN and she lives in Blacksburg, Virginia, with her husband Carter Craigie, N3AO. She earned her PhD from the University of Pennsylvania in Philadelphia.



Dr. Kay Craigie N3KN

On the air, Craigie enjoys talking to radio amateurs internationally and is also involved with SKYWARN® weather spotting through the National Weather Service Forecast Office in Blacksburg. Her husband likes to carry a compact ham radio station in a backpack with him on the Appalachian Trail and operate his radio from scenic mountain spots.

According to Allen Pitts, Media & PR Manager of the ARRL, "It really should not be a surprise to anyone that Amateur Radio is growing in the US or that Mrs. Craigie is our President. The technical and communication skills of radio amateurs, both men and women, are considerable and Amateur Radio is the place to learn about wireless communication in the modern world." Craigie adds, "Amateur Radio is a high-tech activity for the whole family. It offers something for people with all sorts of interests."

—ARRL News



STARS has been designated a Special Service Club by the ARRL.

SUCCESSFUL VE SESSION

STARS conducted a very successful VE session on Saturday January 16th at Hamburg Youth Center. Six candidates upgraded or earned new licenses.

STARS member **Jon Hall KC2QKB** upgraded to General Class.

Michael Duff N2LFA upgraded to Extra and earned the call sign **AC2CK**.

Walter Constantine (a previous licensee) passed the Technician and General tests. His new call is **KC2WLY**.

New Technician licenses were earned by: **Jonathan Kiddy KC2WLV**, **Nicole Gerber KC2WLW**, and **Joseph Bobak KC2WLX**.

As provided by our by-laws, those that pass tests at a STARS VE session are awarded non-voting Associate memberships for 2010.

Congratulations to all!

The VE team led by John Crawford KB2VWC consisted of Scott KB2KOL, Jim N2TFA and Judy N2TEZ.

The next scheduled VE Session is Saturday March 20th. Contact John KB2VWC for more information.

2010 CLUB OFFICERS

President:	Wayne Carpus W2ZDP
Vice President:	Jim Starr N2TFA
Treasurer:	Jack Cullum KB2ESM
Secretary:	Keith Patterson KC2DGC
Financial Secretary:	Judy Levan N2TEZ
Director:	Ken Pokigo KC2AYK
Director:	John Crawford KB2VWC

Clubhouse Chair:	Don Niles K2PMC
Telstar Editor:	Judy Levan N2TEZ
Webmaster:	Marc Fruth N2UBT

NOAA SCIENTIST FINDS CLUE TO PREDICTING SOLAR FLARES

For decades, experts have searched for signs in the sun that could lead to more accurate forecasts of solar flares — powerful blasts of energy that can supercharge Earth's upper atmosphere and disrupt satellites and the land-based technologies on which modern societies depend. Now a scientist at NOAA's Space Weather Prediction Center (SWPC) and her colleagues have found a technique for predicting solar flares two to three days in advance with unprecedented accuracy.

The long-sought clue to prediction lies in changes in twisting magnetic fields beneath the surface of the sun in the days leading up to a flare, according to the authors. The findings will be published in *Astrophysical Journal Letters* next month.

"For the first time, we can tell two to three days in advance when and where a solar flare will occur and how large it will be," said lead author Alysha Reinard, a solar physicist at SWPC and the Cooperative Institute for Research in the Environmental Sciences, a partnership between NOAA and the University of Colorado.

The new technique is already twice as accurate as current methods, according to the authors, and that number is expected to improve as they refine their work over the next few years. With this technique, reliable watches and warnings should be possible be-

fore the next solar sunspot maximum, predicted to occur in 2013. Currently, forecasters see complex sunspot regions and issue alerts that a large flare may erupt, but the when-and-where eludes them.

Solar flares are sudden bursts of energy and light from sunspots' magnetic fields. During a flare, photons travel at the speed of light in all directions through space, arriving at Earth's upper atmosphere—93 million miles from the sun—in just eight minutes.

Almost instantly the photons can affect the high-orbiting satellites of the Global Positioning System, or GPS, creating timing delays and skewing positioning signals by as much as half a football field, risking high-precision agriculture, oil drilling, military and airline operations, financial transactions, navigation, disaster warnings, and other critical functions relying on GPS accuracy.

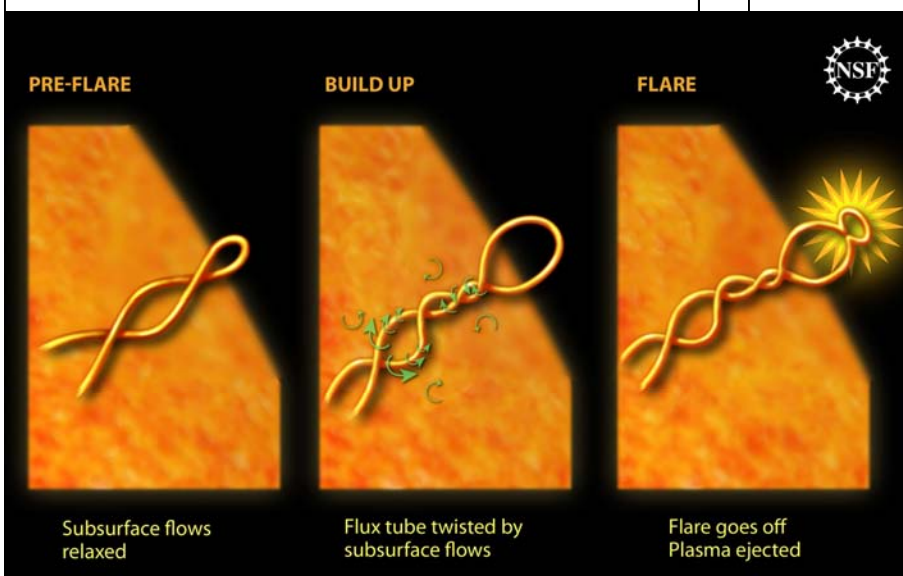
"Two or three days lead time can make the difference between safeguarding the advanced technologies we depend on every day for our livelihood and security, and the catastrophic loss of these capabilities and trillions of dollars in disrupted commerce," said Thomas Bogdan, director of SWPC.

Reinard and NOAA intern Justin Henthorn of Ohio University pored over detailed maps of more than 1,000 sunspot groups, called active regions. The maps were constructed from solar sound-wave data from the National Science Foundation's Global Oscillation Network Group.

Reinard and Henthorn found the same pattern in region after region: magnetic twisting that tightened to the breaking point, burst into a large flare, and vanished. They established that the pattern could be used as a reliable tool for predicting a solar flare.

"These recurring motions of the magnetic field, playing out unseen beneath the solar surface, are the clue we've needed to know that a large flare is coming—and when," said Reinard. Rudi Komm and Frank Hill of the National Solar Observatory contributed to the research.

—NOAA News



Subsurface flows relaxed

Flux tube twisted by subsurface flows

Flare goes off Plasma ejected

WHAT YOU MISSED IF YOU MISSED THE LAST MEETING

(Excerpts from the regular January STARS meeting)

President Wayne, W2ZDP: encourages members to volunteer as elmers and try something different than their usual mode of operating such as one of the new digital modes.

Secretary Keith, KC2DGC:

A technician license training class will begin 12 Jan 10 at the Vigilant Fire Hall in West Seneca.

Financial secretary Judy, N2TEZ:

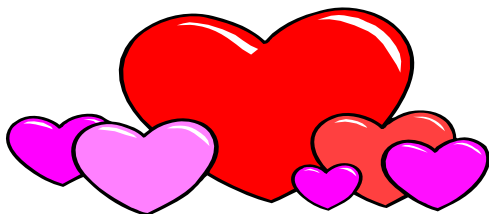
New club QSL cards have been purchased. Club rosters will be distributed next month.

Director Ken, KC2AYK: reported on two Wesley Church Youth Group amateur radio demonstrations held in December which will continue in February.

Nike Base Chairman Don, K2PMC: confirmed the North Evans Fireman's facility for our 2010 Field Day.

Motion: Keith Patterson to reschedule the February meeting date for those who normally would be unable to attend to Sunday the 7th at 2:00 PM at the Nike Base. Second: Jack Cullum KB2ESM Motion carried.

Joe Claus KB2JBD reported on the ARRL scholarship application process for Kyle Clever KC2RQO. Motion: Bob Koster KA2WYE to have Secretary KC2DGC, NIKE Base Chair K2PMC and Financial Secretary N2TEZ write letters of recommendation, on behalf of the club, for Kyle Clever KC2RQO scholarship. Second: Joe Claus KB2JBD. Motion carried.



ARRL SENDS HAM AID TO HAITI

Even though the communications infrastructure in earthquake-ravaged Haiti is being rebuilt, there is still need for Amateur Radio communications. To assist in this effort, the ARRL's Ham-Aid program is providing equipment for local amateurs to use.

On Friday, January 22, the League sent a programmed Yaesu VHF repeater with a microphone, as well as ICOM handheld transceivers, Yaesu mobile 2 meter rigs with power supplies and Kenwood mobile 2 meter rigs. Comet antennas, Larsen mobile antennas with magnet mounts, coax and batteries were also included in the package that was shipped to the home of the President of the Radio Club Dominicano (RCD) for distribution. Most items were donated by their manufacturers; the repeater and power supplies were purchased several years ago using post-Hurricane Katrina grant funds.

"In the horror of this tragedy, there still are stars and the cooperation between the ARRL, IARU Region 2 and the Radio Club Dominicano and has been bright," said ARRL Media and Public Relations Manager Allen Pitts, W1AGP. "It was donations from our members and friends that began the Ham Aid program in Katrina's aftermath. Now once again, that sharing between hams will provide help in another worst-case incident. ARRL members and donors need to know that their gifts will be used very well indeed."

The ARRL Ham Aid Fund welcomes your contribution! In 2005, the ARRL established the Ham Aid Fund to accept contributions in support of Amateur Radio's response to Hurricane Katrina and hams responded generously to help ARRL send equipment to the affected area.

The easiest way to get your donation to work is to give via credit card on the ARRL's secure Web site. Checks may be made payable to ARRL Ham Aid and sent to 225 Main St, Newington CT 06111.

—ARRL News

ENGINEERED METAMATERIALS ENABLE REMARKABLY SMALL ANTENNAS

In an advance that might interest Q-Branch, the gadget makers for James Bond, the National Institute of Standards and Technology (NIST) and partners from industry and academia have designed and tested experimental antennas that are highly efficient and yet a fraction of the size of standard antenna systems with comparable properties. The novel antennas may be useful in ever-shrinking and proliferating wireless systems such as emergency communications devices, micro-sensors and portable ground-penetrating radars to search for tunnels, caverns and other geophysical features.

NIST engineers are working with scientists from the University of Arizona (Tucson) and Boeing Research & Technology (Seattle, Wash.) to design antennas incorporating metamaterials—materials engineered with novel, often microscopic, structures to produce unusual properties. The new antennas radiate as much as 95 percent of an input radio signal and yet defy normal design parameters. Standard antennas need to be at least half the size of the signal wavelength to operate efficiently; at 300 MHz, for instance, an antenna would need to be half a meter long. The experimental antennas are as small as one-fiftieth of a wavelength and could shrink further.

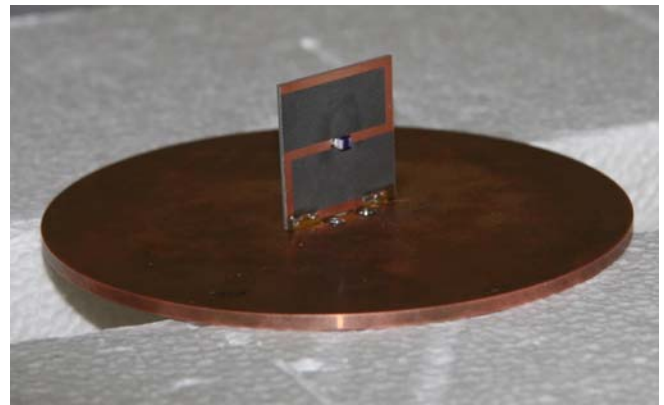
In their latest prototype device,* the research team used a metal wire antenna printed on a small square of copper measuring less than 65 millimeters on a side. The antenna is wired to a signal source. Mounted on the back of the square is a "Z element" that acts as a metamaterial—a Z-shaped strip of copper with an inductor (a device that stores energy magnetically) in the center (see photo).

"The purpose of an antenna is to launch energy into free space," explains NIST engineer Christopher Holloway, "But the problem with antennas that are very small compared to the wavelength is that most of the signal just gets reflected back to the source. The metamaterial makes the antenna behave as if it were much larger than it really is, because the antenna structure stores

energy and re-radiates it." Conventional antenna designs, Holloway says, achieve a similar effect by adding bulky "matching network" components to boost efficiency, but the metamaterial system can be made much smaller. Even more intriguing, Holloway says, "these metamaterials are much more 'frequency agile.' It's possible we could tune them to work at any frequency we want, on the fly," to a degree not possible with conventional designs.

The Z antennas were designed at the University of Arizona and fabricated and partially measured at Boeing Research & Technology. The power efficiency measurements were carried out at NIST laboratories in Boulder, Colo. The ongoing research is sponsored by the Defense Advanced Research Projects Agency.

—NIST News



This Z antenna tested at the National Institute of Standards and Technology is smaller than a standard antenna with comparable properties. Its high efficiency is derived from the "Z element" inside the square that acts as a metamaterial, greatly boosting the signal sent over the air. The square is 30 millimeters on a side. Photo: C. Holloway/NIST

LAST CHANCE: HAVE YOUR RE- NEWED YOUR MEMBERSHIP?

We'll be updating and distributing 2010 rosters in March. Don't forget to renew your membership.

A renewal application was included in the November and December Telstar. Send the completed application along with your dues check made payable to STARS to:

Judy Levan N2TEZ
120 University Blvd.
Depew, NY 14043-2874

FEBRUARY SPECIAL EVENTS

Feb 1-Feb 8, 1900Z-1900Z, Washington, PA. Washington Amateur Communications, W3C. Washington County, Pennsylvania Sportsmen Show. 21.285 14.280 7.260. QSL. www.wacomarc.org

Feb 2, 1000Z-1400Z, Marion, OH. Marion Amateur Radio Club, WW8MRN. Celebrating "Buckeye Chuck Ground Hog Day". 146.550 14.240 7.240 3.860. Certificate. bjh4c22@verizon.net

Feb 4-Feb 10, 1800Z-1800Z, Honolulu, HI. United States Islands Awards Program, N7I. 16th Anniversary of the US Islands Awards Program. 28.460 14.260. QSL. www.usislands.org

Feb 5, 1400Z-2300Z, San Angelo, TX. San Angelo Amateur Radio Club, W5QX. Celebrating National Weatherman's Day. 14.241 7.241. Certificate. www.w5qx.org

Feb 5-Feb 7, 2359Z-2359Z, Istanbul, Republic of Turkey. TCSWAT, TC10VF. The 10th Anniversary of the Volunteer Fire Department. All Bands. QSL. QSL www.ta0u.com/2010/Eng/Calendar.html

Feb 6, 1500Z-2100Z, Virginia Beach, VA. US Coast Guard Auxiliary, W4Z. 18th Annual Polar Plunge Benefiting Special Olympics. 14.254 7.254. QSL. ge@flotilla57.com

Feb 6-Feb 7, 1600Z-2100Z, Milan, OH. The Thomas Edison Memorial Radio Club, NI8G. Celebrating Edison's birthday in Milan OH. 21.340 14.240 7.240 3.840. QSL. ni8n1@yahoo.com

Feb 7-Feb 14, 0000Z-0000Z, Petal, MS. Petal Pow-Wow, WOW. Pow-Wow. Native American Event. 14.230 7.230 7.030 3.930. QSL. petalpow-wow.webs.com

Feb 13, 1700Z-2359Z, San Diego, CA. USS Midway (CV 41) Museum Radio Operations Room, NI6IW. Women Marines Birthday and Presidents Day. SSB 14.320 7.250 CW 14.060 7.055 RSK-31 7.070 D-STAR 2m/70cm SOCAL rpters. QSL. kk6fz@arrl.net

Feb 19-Feb 21, 2300Z-2300Z, Catasauqua, PA. TDF Radio Club, W3G. 278th Anniversary of George Washington's birthday. 18.130 14.226 7.180 3.880. QSL. www.ka3kdl.com

Feb 19-Feb 21, 2300Z-2100Z, Laredo, TX. Laredo-Hams Amateur Radio Club (W5LRD), W5W. Washington's Birthday Celebration Association. 14.325 7.260. QSL. www.LaredoHams.com

Feb 19-Feb 22, 2200Z-2359Z, George, WA. Eastern Washington DX Club, W7G. George Washington's Birthday. 18.135 14.250 7.225 3.880. QSL. w7bjn@nwi.net

Feb 20, 1400Z-2200Z, Leavenworth, KS. Kickapoo QRP Amateur Radio Club, W0EBB. 6th Annual "Freeze Your Keys" Winter Operating Event. 14.285 14.060 7.285 7.040. QSL. w0ebb@juno.com

Feb 20, 1500Z-2200Z, Waterloo, IA. Five Sullivan Brothers Amateur Radio Club, W0FSB. 65th Anniversary of the Battle of Iwo Jima & the Flag Raisings. 21.240 14.240 7.240. Certificate. t-mc-nulty@msn.com

Feb 20-Feb 21, 1500Z-2100Z, Alexandria, VA. Mount Vernon Amateur Radio Club, K4US. Commemoration of George Washington's Birthday. 28.415 14.280 7.240 7.035. Certificate. www.mvarc.com

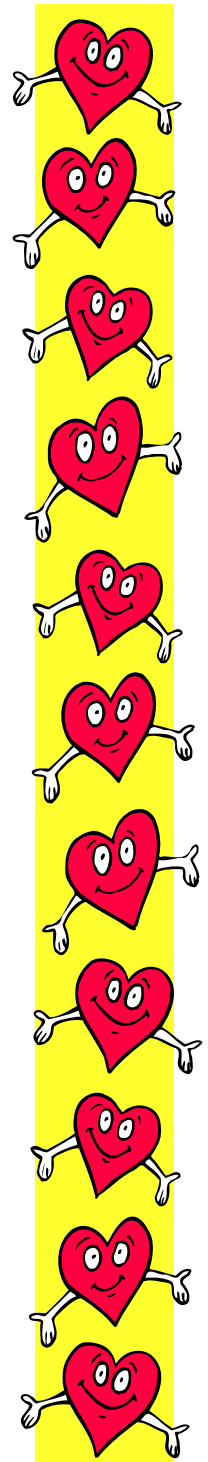
Feb 21, 0100Z-0500Z, Olathe, KS. Marshall Ensor Memorial Organization, W9BSP/W9UA. CW - 1930s W9UA Transmitter built by MH Ensor, W9BSP. 1.904 1.896. QSL. www.ensorparkandmuseum.org

Feb 24, 1600Z-2200Z, Mesa, AZ. Sunlife/Venture Out Amateur Radio Clubs, W7Z. Third Annual Snowbird Field Day. 21.225 18.125 14.325 7.125. QSL. billmaynard@mac.com

Feb 27, 1500Z-2300Z, Kent, OH. Portage County Amateur Radio Service, K8BF. 5th Annual Freeze Your Acorns Off (FYAO) QRP Special Event. 21.283 14.283 7.183 3.883 EchoLink Node KC8RKV. Certificate. www.portcars.org

FEBRUARY CONTESTS

NCCC Sprint Ladder	0230Z-0300Z, Feb 5
Vermont QSO Party	0000Z, Feb 6 to 2400Z, Feb 7
10-10 Int. Winter Contest, SSB	0001Z, Feb 6 to 2359Z, Feb 7
FYBO Winter QRP Sprint	1400Z-2400Z, Feb 6
Minnesota QSO Party	1400Z-2400Z, Feb 6
British Columbia QSO Party	1600Z, Feb 6 to 0759Z, Feb 7
AGCW Straight Key Party	1600Z-1900Z, Feb 6
Delaware QSO Party	1700Z, Feb 6 to 2359Z, Feb 7
Mexico RTTY International Contest	1800Z, Feb 6 to 1759Z, Feb 7
North American Sprint, CW	0000Z-0400Z, Feb 7
New Mexico QSO Party	1500Z, Feb 7 to 0300Z, Feb 8
ARCI Fireside SSB Sprint	2000Z-2359Z, Feb 7
ARRL School Club Roundup	1300Z, Feb 8 to 2400Z, Feb 12
NAQCC Straight Key/Bug Sprint	0130Z-0330Z, Feb 10
NCCC Sprint Ladder	0230Z-0300Z, Feb 12
YLRL YL-OM Contest	1400Z, Feb 12 to 0200Z, Feb 14
CQ WW RTTY WPX Contest	0000Z, Feb 13 to 2400Z, Feb 14
SARL Field Day Contest	1000Z, Feb 13 to 1000Z, Feb 14
Asia-Pacific Spring Sprint, CW	1100Z-1300Z, Feb 13
Dutch PACC Contest	1200Z, Feb 14 to 1200Z, Feb 15
KCJ Topband Contest	1200Z, Feb 13 to 1200Z, Feb 14
Louisiana QSO Party	1500Z, Feb 13 to 0300Z, Feb 14
OMISS QSO Party	1500Z, Feb 13 to 1500Z, Feb 14
FISTS Winter Sprint	1700Z-2100Z, Feb 13
North American Sprint, SSB	0000Z-0400Z, Feb 14
SKCC Weekend Sprint	0000Z-2400Z, Feb 14
Classic Exchange, Phone	1400Z, Feb 14 to 0800Z, Feb 15
AGCW Semi-Automatic Key Evening	1900Z-2030Z, Feb 17
NCCC Sprint Ladder	0230Z-0300Z, Feb 19
ARRL Inter. DX Contest, CW	0000Z, Feb 20 to 2400Z, Feb 21
Run for the Bacon QRP Contest	0200Z-0400Z, Feb 22
SKCC Sprint	0000Z-0200Z, Feb 24
NCCC Sprint Ladder	0230Z-0300Z, Feb 26
CQ 160-Meter Contest, SSB	2200Z, Feb 26 to 2159Z, Feb 28
REF Contest, SSB	0600Z, Feb 27 to 1800Z, Feb 28
Mississippi QSO Party	1500Z, Feb 27 to 0300Z, Feb 28
North American QSO Party, RTTY	1800Z, Feb 27 to 0600Z, Feb 28
High Speed Club CW Contest	0900Z-1100Z, Feb 28 and 1500Z-1700Z, Feb 28
North Carolina QSO Party	1700Z, Feb 28 to 0300Z, Mar 1



CLUB MEETINGS

Club meetings are held on the first Thursday of the month at 7:00PM at either the Hamburg Youth Center (Prospect and Hawkins Avenues) or the NIKE Base Clubhouse. Everyone is welcome. Board meetings are held on the fourth Thursday of the month at the Nike Base Club Station at 7:30PM and are open to all club members.

CLUB NETS

STARS WB2EZU Memorial HF net meets at 10AM local time on Saturdays on 3.925 MHz +/- QRM. Bob Lehning WA2YSJ is usually the net controller.

STARS Sunday morning RagChew Net at 9:30AM on 28.380 Mhz.

Across

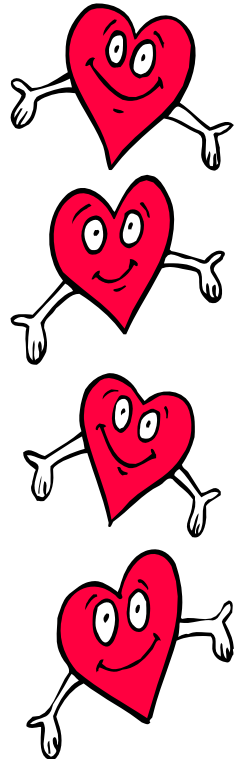
- 1. CA company, started in AZ*
- 5. Sens., IMD, selectivity, e.g.
- 9. With 20, 61 and 76 across, the theme of this puzzle, and the * clues
- 14. PJ6 place
- 15. Inductor
- 16. Put out
- 17. Tester type
- 18. Magazine contents
- 19. G-land elevators
- 20. See 9 across
- 23. Animate
- 25. Porcelain, etc.
- 29. Kind of code
- 30. TN company, with 53 across*
- 32. Windows predecessor
- 33. Immediately
- 34. GM Gaelic
- 36. Hi-____
- 38. Crunch maker
- 40. 5N currency
- 42. Tower ring
- 44. Lifted, so to speak
- 45. Coastal features
- 47. Browning, ham, or Grissom, not
- 49. ____ of measure
- 50. However, on CW
- 51. Part of NIB, on eBay, say
- 53. See 30 across
- 55. Lt.'s inferior, in the Navy
- 56. Passings on
- 59. NORs' cousins
- 61. See 9 across
- 63. Transplant, in a way
- 66. Operates, as in a multi-multi
- 67. Wise men
- 71. Kind of pad
- 72. Xmtd, opp.
- 73. Hammer part
- 74. ____ pole
- 75. GM island
- 76. See 9 across

Down

- 1. Bal. mod. prod.
- 2. QTC test
- 3. Pertaining to, on CW
- 4. Civil rights org.
- 5. Quickly run
- 6. Partner of circumstance
- 7. CA company*
- 8. Replicated
- 9. FCC does it, to a 2-year vacant call sign
- 10. OT discrimination?
- 11. ABC followers
- 12. Professional suffix
- 13. Older OMs, or YLs for that matter
- 21. Connector label, often
- 22. Soldering implement

1	2	3	4		5	6	7	8		9	10	11	12	13
14					15					16				
17					18					19				
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	23	24					25					26	27	28
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			61					62						
63	64	65				66					67	68	69	70
71						72					73			
74						75					76			

- 23. Toothy fish
- 24. Permittivity symbol
- 26. Performed a canticle, e.g.
- 27. IA company*
- 28. Candies
- 29. IL company*
- 31. On-air group
- 35. "____ he drove out of sight..."
- 37. "599 HR - FB ____ OM"
- 39. QR followers
- 41. Where most verticals are fed
- 43. ENN, for example, with "numbers"
- 46. Horizontal location, during a contest off-time, perhaps
- 48. What a ham does before identifying
- 52. Hi-Z low-Z interfaces, say
- 54. Subway alternative
- 57. Prefix for a Seoul man, or YL for that matter
- 58. Four over four, for example
- 60. Mythological SV YL
- 62. Little pistol view of a big gun?
- 63. Rprt.
- 64. CO company*
- 65. 70's rock?
- 68. CA company, originally in WA*
- 69. SK company*
- 70. Keyboard key



Solution in Next Month's Telstar