



# ARES COMMUNICATOR

Information for Scott County Amateurs



July, 2009

Accurate, Reliable Emergency Communications

Volume 9, Number 7

## Antenna Restriction Bill Needs Your Help

ARRL CEO Dave Sumner, K1ZZ wrote an excellent editorial in the July issue of QST setting forth some of the background of antenna restrictions, the help provided by PRB-1 and the continuing problem presented by private Restrictive Covenants prohibiting Amateur antennas.

The editorial outlines a Bill (HR 2160) to bring this matter to the attention of the US Congress. Please take a couple of minutes to read the editorial in QST or on the ARRL Website. The following is from Dave's editorial, please take a minute to look it over.

"HR 2160 will not solve our antenna problems overnight, but it is a meaningful and realistic step in the right direction. Let's pull together to make it happen!

"Whether or not you are now affected by restrictive covenants, the ARRL needs all members to get behind this legislation. More information is in "Happenings" (QST July page 66) and on the Government Relations page on the ARRL Web site. If you are logged into the Members Only section of the ARRL Web site, [www.arrl.org/members-only/](http://www.arrl.org/members-only/), it shows the name and address of your member of Congress and provides a link to a sample letter of support for HR 2160. Please write your Representative (there is no bill on the Senate side yet) and ask that they sign on as a co-sponsor. If you are a constituent of the sponsor or one of the co-sponsors, please drop him or her a note of thanks for their early support.

Chwat & Company, the ARRL's legislative relations consultant, is collecting letters for hand delivery to Congressional offices. Send your letter to Chwat & Co or, if you prefer to send it directly to your Representative, please send them a copy. Any of the following three methods will work: as a signed email attachment to [arrl@chwatco.com](mailto:arrl@chwatco.com), as a fax

Legislation cont'd on page 2

## Hurricane Nets on Watch

The Hurricane Watch Net (HWN) on 14.325 MHz (and beginning with this season, other HF bands) is one of several key players. It serves either the Atlantic or Pacific during a watch or warning period and coordinates with the National Hurricane Center (NHC) in Miami. Frequent, detailed information is issued on nets when storms pose a threat to the US mainland. In addition to hurricane spotting, local communicators may announce that residents have evacuated from low-lying flood areas. Other amateurs across the country can help by relaying information, keeping the net frequency clear and by listening. See the HWN's Web site for more information. The net works closely with the hams at the NHC's Amateur Radio station WX4NHC.

The SATERN Net (Salvation Army Team Emergency Radio Network) provides emergency communication support to the Salvation Army and populations at large. They also handle health-and-welfare traffic. SATERN holds high profile nets on 20 meters (14.265 MHz) during major

Hurricane Nets cont'd on page 2

## ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, July 11th

Digital Monday July 13th

Shakopee Marathon October 3rd

### SELECTED TRAFFIC NETS

Designator	Freq.	Local Times	
MN Phone	3.860Mhz	Noon, 5:30pm	Daily
MN CW	3.605Mhz	6:30pm, 9:50pm	Daily
<b>ARES</b>			
Scott ARES	146.535 S	7:00pm	Monday
Carver ARES	147.165+	8:30pm	Sunday
Bloomington	147.090+	9:00pm	Sunday
<b>Neighboring Nets</b>			
North Dakota	3.937Mhz	6:30pm	Daily
South Dakota	3.870Mhz	6:00pm	Daily
Wisconsin	3.985Mhz	5:30pm	Daily

The ARES COMMUNICATOR is published for the benefit of Amateur Radio Operators in Scott County and other interested individuals.

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Reader submissions encouraged!

## Legislation - cont'd from page 1

to 703-684-7594, or by regular mail to John Chwat, Chwat & Co, 625 Slaters Ln Suite 103, Alexandria, VA 22314.

Congressman John Kline represents Scott County in the House of Representatives. You can contact Congressman Kline's office via email at <http://kline.house.gov/?sectionid=7&iontree=47>.

BREAK - OVER



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**“Our soldiers fight not because they hate  
what is in front of them, but because they  
love what is behind them”**

G.K. Chesterton

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### Scott County ARES Contacts

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## Hurricane Nets - cont'd from page 1

hurricanes and has a long history of excellence, discipline and service. Refer to the SATERN Web site for more information.

The Maritime Mobile Service Net (MMSN) meets on 14.300 MHz and is composed of hams that serve and assist those in need of communications on the high seas. According to its Web site, the primary purpose of the net is for handling traffic from maritime mobile stations. The network is recognized by the United States Coast Guard and has an excellent working relationship with that agency. The MMSN has handled hundreds of incidents involving vessels in distress and medical emergencies in remote locations, as well as passing health and welfare traffic in and out of affected areas. They also work closely with the NWS and NHC by relaying weather reports from maritime stations.

The newest member of the big player community, the VoIP SKYWARN and Hurricane Net operates by combining both the EchoLink and IRLP linked repeater networks, while handling critical wide area communications during major severe weather and tropical events. These operations have gained national stature in recent years, making the Net a critical partner with WX4NHC. Whenever tropical weather is posing a threat to the US mainland and certain other areas of interest, the VoIP WX net will be fully operational. See the VoIP SKYWARN and Hurricane Net Web site for more information.

During hurricane events, there are usually two or three regional nets (usually on 40 or 20 meters) that spring to prominence as major key assets to the disaster response on an ad hoc basis. Watch for these nets, as well as the nationally recognized networks described above, this season. Don't transmit on their frequencies unless you are absolutely sure you have something substantive to add, and then only under the direction of the net control station.

BREAK - OVER

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**“Ever notice how people who tell you to  
calm down are the ones that got you  
mad in the first place?”**

Ahm Sari

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## Formal Message Elements – 6th in a Series

### Sending the Message

Transmitting the radiogram for the first time applies both to originated radiograms and radiograms that have been received for relay. Let's assume you have found a station to receive your radiogram, either by your own efforts to find one or as a result of having been told by a net control station to transmit it to WA0XCQ. The net control station would direct the distribution of traffic by saying, "KC0XYZ, call WA0XCQ and pass your one routine Shakopee." The station being called answers first, "This is WA0XCQ ready to copy." You then proceed to transmit your message. An example would go something like this: "Message Follows, number one five, routine, KC0XYZ, eight, Burnsville, Minnesota, two one five one CST, October three one. Mrs. Judy Smith, one nine zero eight Moon Street Northeast, Shakopee, Minnesota, 55394, telephone nine five two two nine eight six four zero eight. BREAK. Mother and Dad arrived home safely Sunday afternoon. Break. Uncle George. BREAK, no more"..

Phone operators use the proword "break" for separation of the address and signature from the text. It is incorrect procedure to use the words "going to" preceding the address and "break and the text" preceding the text.

Radiograms should be sent by voice, not read. That is, reading puts emphasis on certain syllables and words, and this means de-emphasis of others. In transmitting a radiogram by voice, no word or syllable should be de-emphasized. Letting your voice fall at the end of a sentence as would be done in reading is poor practice in voice traffic work, as is letting your voice fall for unaccented syllables. You are not a broadcast announcer. Keep in mind that the receiving operator must put down what you transmit, completely and accurately.

Avoid giving dates as "four, twelve, eighty-eight." Just say "April twelve" and forget the year. (We hope no message will be over a year old! Also, don't say "today's date." Spell all difficult or unusual words (e.g., "Ferrier, I spell F-E-R-R-I-E-R"). If the word is very difficult, unusual, or a group of letters not forming a word, spell it out using ITU phonetics (e.g. "NCOIC, I spell: November, Charlie, Oscar, India, Charlie.") Using phonetics excessively is poor procedure. Usually simply spelling the word is sufficient.

Speak slowly enough to allow the receiving station time to copy the message word for word. If you think you are going too slowly, you should probably slow down even more. Try printing the message yourself as you transmit the information. This, along with on-the-air practice, should give you a feel for the proper speed.

### MESSAGE FOLLOWS

15 Routine KC0XYC 8 Burnsville, MN 2151CST Oct 31  
Mrs. Judy Smith  
1908 Moon Street N.E.  
Shakopee MN 55394  
952 298 6408

BREAK

Mother and Dad arrived home  
Safely Sunday afternoon

BREAK

Uncle George

BREAK NO MORE  
OVER

BREAK - OVER

### LITTLE KNOWN NAVAL HISTORY

The U.S.S. Constitution (Old Ironsides), as a combat vessel, carried 48,600 gallons of fresh water for her crew of 475 officers and men. This was sufficient to last six months of sustained operations at sea. She carried no evaporators (i.e. fresh water distillers!)

However, let it be noted that according to her ship's log, "On July 27, 1798, the U.S.S. Constitution sailed from Boston with a full complement of 475 officers and men, 48,600 gallons of fresh water, 7,400 cannon shot, 11,600 pounds of black powder and 79,400 gallons of rum."

Her mission: "To destroy and harass English shipping."

Making Jamaica on 6 October, she took on 826 pounds of flour and 68,300 gallons of rum.

Then she headed for the Azores, arriving there 12 November. She provisioned with 550 pounds of beef and 64,300 gallons of Portuguese wine.

On 18 November, she set sail for England. In the ensuing days she defeated five British men-of-war and captured and scuttled 12 English merchant ships, salvaging only the rum aboard each.

By 26 January, her powder and shot were exhausted. Nevertheless, although unarmed she made a night raid up the Firth of Clyde in Scotland. Her landing party captured a whisky distillery and transferred 40,000 gallons of single malt Scotch aboard by dawn. Then she headed home.

The U.S.S. Constitution arrived in Boston on 20 February, 1799, with no cannon shot, no food, no powder, no rum, no wine, no whisky, and 38,600 gallons of water.

**GO NAVY!!!**

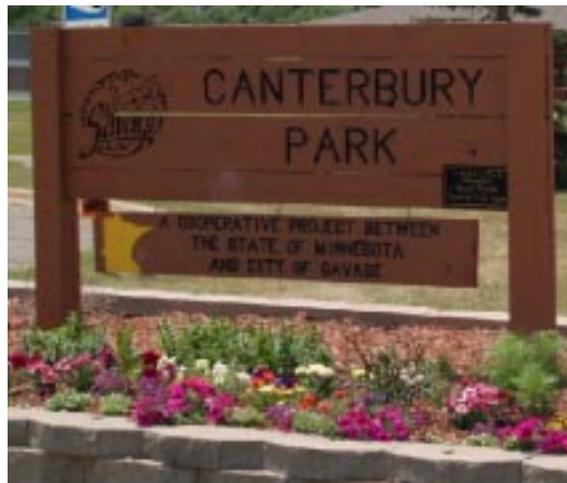
BREAK - OVER



The Field Day picture gallery shows a good time was had by everyone! The weather cooperated and the bands were as good as they get during this stage of the Solar Cycle. If you missed the fun, circle the last weekend in June 2010 and plan on joining the fun next year!



The picnic shelter made nice shade for two stations for the contest. Jeff, AC0DH (left), and Bob, KB0FH, (right) operate the two transceivers used for the exercise. (NOPI photo)



Canterbury City Park in Savage located at 13440 Inglewood Ave, was the site of Scott ARES Field Day Operation for 2009. (W0NFE photo)



Tony, KC0YHH, takes time for a smile while searching for new stations. (K0LEJ photo)



Bob, KB0FH, consults the log to check for 'dupes' during the contest action. (K0LEJ photo)



Jeff, AC0DH, put his portable HF / VHF / UHF station to the test during the weekend. (K0LEJ photo)



Taking a break from the action is Dan, N0PI, who decided that Sunday mornings cooler temps made the jacket feel welcome. Dan is operating tailgate portable. (K0LEJ photo)



An officer from the Savage City Police Dept. stopped by to meet and greet on Saturday. The Dan Patch Days festivities were taking place at the same time. Our site proved to be non-threatening and everyone left smiling. (N0PI photo)



Some of the information available for visitors included a display of the ARRL's latest literature explaining Amateur Radio and emergency communications. (K0LEJ photo)



Chris Weldon, standing, Scott County Emergency Director, stopped by the to introduce himself and check out the operation. Chris originated a message from the Field Day site to test our traffic handling ability. Jeff, AC0DH, transmits the traffic via 2M to Bob, W0NFE, for delivery. (NOPI photo)



Young visitors at the Field Day site took turns making a QSO on two meters. Heidi and Jimmy got the scoop from Jeff, AC0DH. Hmm, are there license exams in the future? (K0LEJ photo)

## Field Day Video on

The ARRL started the Field Day video postings with a 30sec promo.

<http://www.youtube.com/watch?v=YQx2O9VuZts>

The Raytown (Missouri) Amateur Radio Club received some great coverage. Their President Barb, green shirt in the video interviews, did a very professional job explaining exactly what Field Day is all about. A club member, Jerry, NF9L, compiled the TV coverage their Field Day received in a series of live remotes.

This is a compilation of the FOX TV coverage done on the Sunday morning of Field Day weekend.

<http://www.youtube.com/watch?v=y3gRWG-EUGU>

This video was produced by a Raytown member and includes some of the Fox News coverage.

<http://www.youtube.com/watch?v=sr80I5ggOXo>

The Orange County Amateur Radio Club produces a nice documentary on the contest.

<http://www.youtube.com/watch?v=RCYwAHfJ16Q>



Larry, K0LEJ, discusses the digital modes while searching for new contacts. (W0NFE photo)

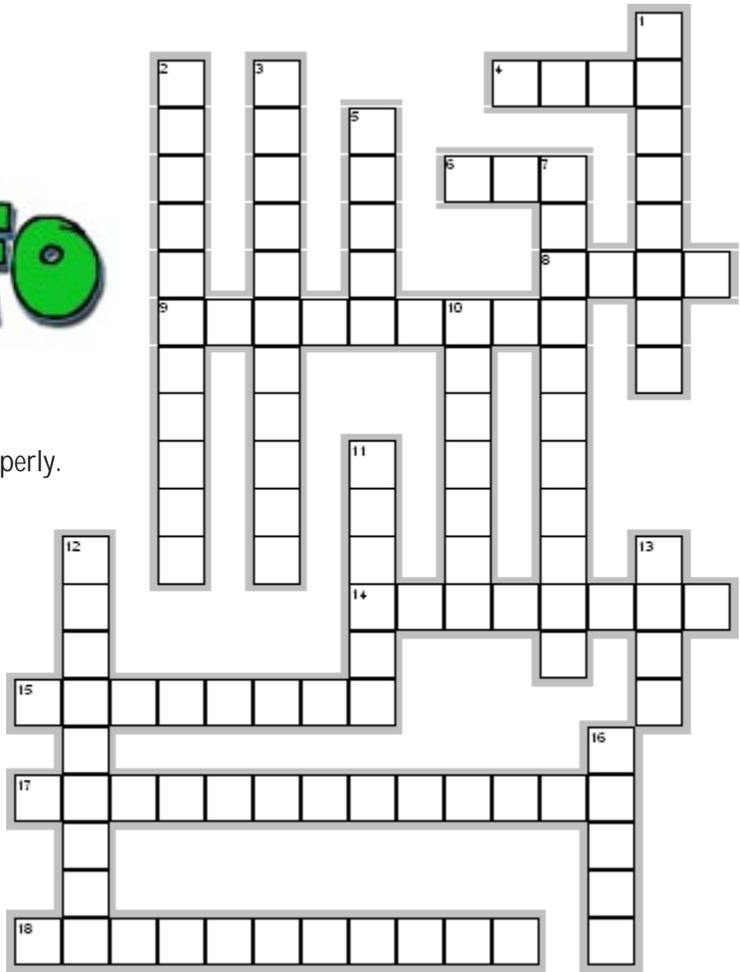
# RF INFO

## Across

- World Administrative Radio Conference at which frequency allocations are determined.
- Very low-power operating (less than 5 watts on CW and 10 watts (peak) on phone).
- Antenna made from a long, thin metal rod.
- Reduce in strength
- A signal so strong that circuits begin to operate improperly.
- Cable used to transfer radio-frequency energy (between Xcvr and antenna).
- A device for connecting a computer to a radio.
- The receiver's ability to detect weak signals.

## Down

- Monitor a range of frequencies or a set of memory channels for activity.
- Communication method that exchanges characters instead of voice or Morse Code.
- A receiver's ability to receive only the desired signal and reject all others.
- Stands for "balanced-to-unbalanced", provides a transition from parallel wire feed lines or antennas to coaxial feed lines.
- A device that changes ac power into dc power.
- A radio that can operate on AM, SSB, CW, Digital, and FM.
- A simple wire antenna 1/2-wavelength long with feed line attached in the middle.



- A measure of how easily power can be transferred into a load or through a feed line.
- Antenna's ability to receive or transmit energy in a preferred direction.
- Electronic device that generates Morse code elements.

## CQWW Adds New "Xtreme" Category

A new "Xtreme" category is being added to the CQ World Wide DX Contest to encourage the development of new technologies in amateur radio communications in general and contesting in particular. According to CQ WW Contest Director Bob Cox, K3EST, this new category has been established to allow amateurs to participate in the CQ WW contest while experimenting creatively with Internet-linked stations and other new technologies.

"Contesters are often early adopters of new technologies," said Cox, "and we want to encourage this as a continuation of ham radio's pioneering spirit. However, many of these technologies are not currently permitted in any existing CQ WW categories. The Xtreme category will allow these stations to compete, but only with other stations using new technologies."



Scoring for logs submitted in the new category will be a mix of standard CQ WW scoring plus a more subjective score for level of innovation and originality, as determined by a panel of judges on the CQ WW Contest Committee. The highest-scoring entries in the single-operator and multi-operator categories will win the John Kanzius, K3TUP, Memorial plaques, sponsored by Tim Duffy, K3LR. Kanzius, a prominent contester, was also an experimenter who developed a potentially ground-breaking approach to cancer treatment in the course of his own, ultimately unsuccessful, battle with the disease.

The new category will take effect with the 2009 CQ World Wide DX Contest this fall. Complete details of the Xtreme category are on the CQWW page of the CQ magazine website, <http://www.cq-amateur-radio.com>.

## VHF LINGO

### Crossword Solution

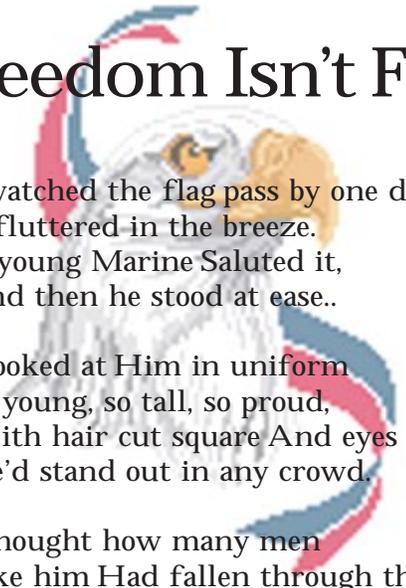
#### Across

3. DUPLEX—Transmitting on one frequency and receiving on another in the same band.
4. SCANNING—Monitor a range of frequencies or a set of memory channels for activity.
8. FEEDLINE—Cable used to transfer radio-frequency energy from transceiver to antenna.
11. IMPEDANCE—Opposition to ac current flow by a circuit, feed line, or antenna.
15. OVERLOAD—A signal so strong that circuits begin to operate improperly.
16. ALLMODE—radio that can operate on AM, SSB, CW, digital modes and FM
17. PACKET—Amateur digital data system that communicates using VHF and UHF frequencies.
19. BEAM—Antenna with gain primarily in one direction.
20. WINLINK—System for sending and receiving email via Amateur Radio.
21. BATTERYPACK—Several battery cells connected together to act as a single, larger battery.
22. POWERSUPPLY—Device that changes ac power into dc power.

#### Down

1. SUBAUDIBLE—Audio frequencies below the usual communication range of 300 – 3000 Hz.
2. TRUNKING—VHF/UHF systems used by commercial and government agencies, sharing a few channels among many users by using computers to control the radio's frequencies.
5. ARES—Amateur Radio Emergency Service, sponsored by the ARRL's Field Organization
6. GAIN—Antenna's ability to concentrate received or transmitted energy in a preferred direction.
7. AUTOMOTIVEADAPTER—device that plugs into a vehicle lighter socket and supplies power to a radio or electronic device.
9. SIMPLEX—Transmitting and receiving on the same frequency.
10. GROUNDPLANE—A conductive surface that acts as an electrical mirror. A ground plane antenna is an antenna that requires a ground plane to operate.
12. POLARIZATION—Orientation of radio waves with respect to the surface of the Earth (vertical, horizontal)
13. AIRBAND—VHF channels for aviation air-to-air and air-to-ground communications
14. ECOMM—Abbreviation for "emergency communications".
18. MONITOR—Listen without transmitting or disable a radio's squelch to listen for weak signals.

## Freedom Isn't Free



I watched the flag pass by one day,  
It fluttered in the breeze.  
A young Marine Saluted it,  
And then he stood at ease..

I looked at Him in uniform  
So young, so tall, so proud,  
With hair cut square And eyes alert  
He'd stand out in any crowd.

I thought how many men  
Like him Had fallen through the years.  
How many died on foreign Soil  
How many mothers' tears?

How many pilots' planes shot down?  
How many died at sea  
How many foxholes were soldiers' Graves?  
No, freedom isn't free

I heard the sound of Taps One night,  
When everything was still,  
I listened to the bugler Play  
And felt a sudden chill.

I wondered just how many times  
That Taps had meant 'Amen,'  
When a flag had draped a Coffin.  
Of a brother or a friend.

I thought of all the Children,  
Of the mothers and the wives,  
Of fathers, sons and Husbands  
With interrupted lives.

I Thought about a graveyard  
At the bottom of the sea  
Of unmarked graves in Arlington.  
No, freedom isn't free.

*Happy Independence Day*

## Deep Solar Minimum

The sunspot cycle is behaving a little like the stock market. Just when you think it has hit bottom, it goes even lower.

Last year, 2008, was a bear. There were no sunspots observed on 266 of the year's 366 days (73%). To find a year with more blank suns, you have to go all the way back to 1913, which had 311 spotless days. Prompted by these numbers, some observers suggested that the solar cycle had hit bottom in 2008.

Maybe not. Sunspot counts for 2009 have dropped even lower. As of March 31st, there were no sunspots on 78 of the year's 90 days (87%).

It adds up to one inescapable conclusion: "We're experiencing a very deep solar minimum," says solar physicist Dean Pesnell of the Goddard Space Flight Center. "This is

more than 200 years. The current solar minimum is part of that pattern. In fact, it's right on time. "We're due for a bit of quiet—and here it is," says Pesnell.

But is it supposed to be this quiet? In 2008, the sun set the following records:

A 50-year low in solar wind pressure: Measurements by the Ulysses spacecraft reveal a 20% drop in solar wind pressure since the mid-1990s—the lowest point since such measurements began in the 1960s. The solar wind helps keep galactic cosmic rays out of the inner solar system. With the solar wind flagging, more cosmic rays are permitted to enter, resulting in increased health hazards for astronauts. Weaker solar wind also means fewer geomagnetic storms and auroras on Earth.

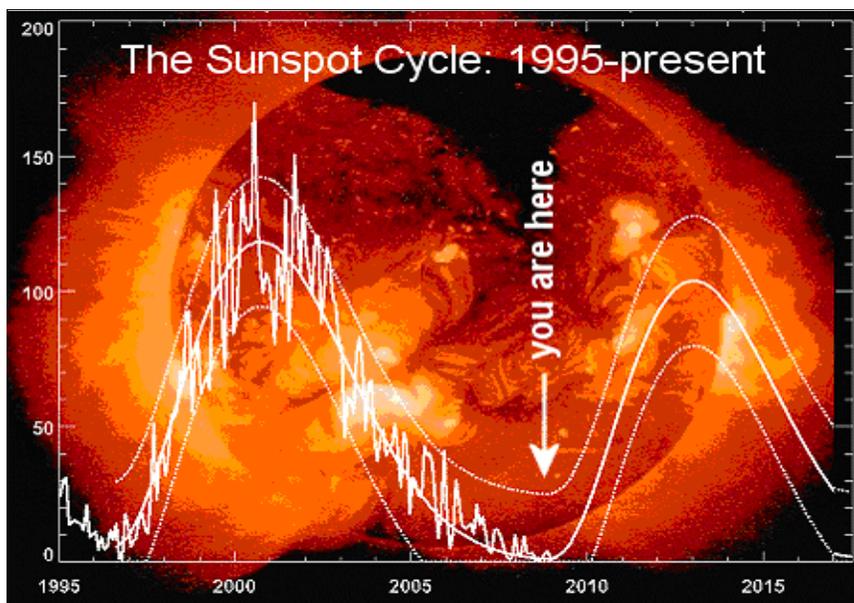
A 12-year low in solar "irradiance": Careful measurements by several NASA spacecraft show that the sun's brightness has dropped by 0.02% at visible wavelengths and 6% at extreme UV wavelengths since the solar minimum of 1996. The changes so far are not enough to reverse the course of global warming, but there are some other significant side-effects: Earth's upper atmosphere is heated less by the sun and it is therefore less "puffed up." Satellites in low Earth orbit experience less atmospheric drag, extending their operational lifetimes. Unfortunately, space junk also remains longer in Earth orbit, increasing hazards to spacecraft and satellites.

A 55-year low in solar radio emissions: After World War II, astronomers began keeping records of the sun's brightness at radio wavelengths. Records of 10.7 cm flux extend back all the way to the early 1950s. Radio telescopes are now recording the dimmest "radio sun" since 1955: [plot](#). Some researchers believe that the

lessening of radio emissions is an indication of weakness in the sun's global magnetic field. No one is certain, however, because the source of these long-monitored radio emissions is not fully understood.

All these lows have sparked a debate about whether the ongoing minimum is "weird", "extreme" or just an overdue "market correction" following a string of unusually intense solar maxima.

"Since the Space Age began in the 1950s, solar activity has been generally high," notes Hathaway. "Five of the ten most



The sunspot cycle from 1995 to the present. The jagged curve traces actual sunspot counts. Smooth curves are fits to the data and one forecaster's predictions of future activity.

the quietest sun we've seen in almost a century," agrees sunspot expert David Hathaway of the Marshall Space Flight Center.

Quiet suns come along every 11 years or so. It's a natural part of the sunspot cycle, discovered by German astronomer Heinrich Schwabe in the mid-1800s. Sunspots are planet-sized islands of magnetism on the surface of the sun; they are sources of solar flares, coronal mass ejections and intense UV radiation. Plotting sunspot counts, Schwabe saw that peaks of solar activity were always followed by valleys of relative calm—a clockwork pattern that has held true for

## Solar Minimum - cont'd from page 9

intense solar cycles on record have occurred in the last 50 years. We're just not used to this kind of deep calm."

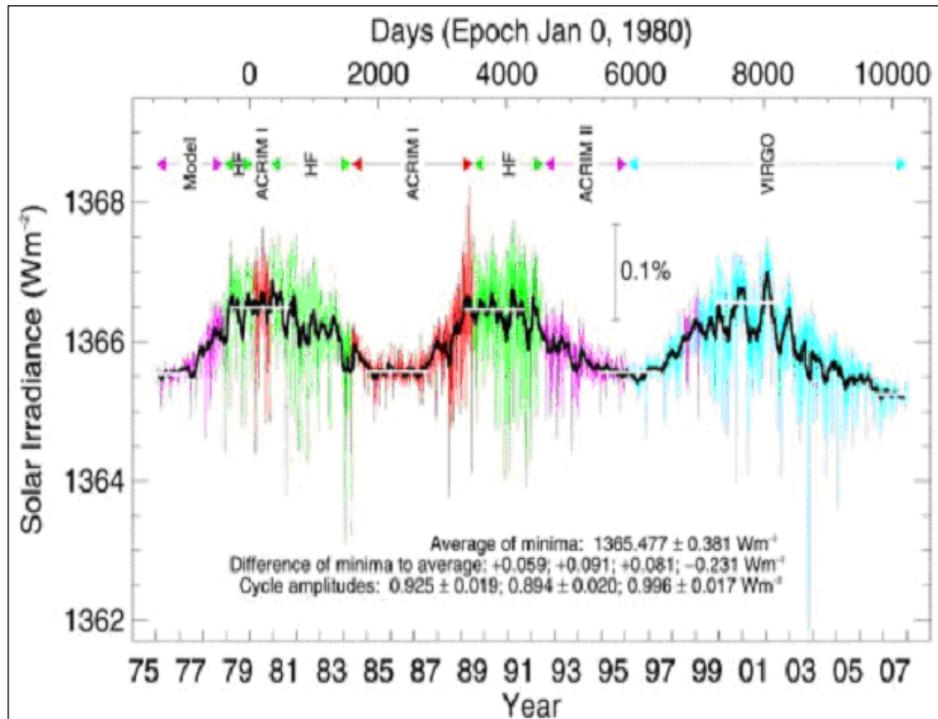
Deep calm was fairly common a hundred years ago. The solar minima of 1901 and 1913, for instance, were even longer than the one we're experiencing now. To match

will be. Pesnell has surveyed the scientific literature and prepared a "piano plot" showing the range of predictions. The great uncertainty stems from one simple fact: No one fully understands the underlying physics of the sunspot cycle.

Pesnell believes sunspot counts will pick up again soon, "possibly by the end of the year," to be followed by a solar maximum of below-average intensity in 2012 or 2013.

But like other forecasters, he knows he could be wrong. Bull or bear? Stay tuned for updates.

BREAK - OVER



Space-age measurements of the total solar irradiance (brightness summed across all wavelengths). This plot comes from researcher C. Fröhlich.

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**"If you don't chase your dreams, who will?"**

Ella Quince

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those minima in terms of depth and longevity, the current minimum will have to last at least another year.

In a way, the calm is exciting, says Pesnell. "For the first time in history, we're getting to see what a deep solar minimum is really like." A fleet of spacecraft including the Solar and Heliospheric Observatory (SOHO), the twin STEREO probes, the five THEMIS probes, Hinode, ACE, Wind, TRACE, AIM, TIMED, Geotail and others are studying the sun and its effects on Earth 24/7 using technology that didn't exist 100 years ago. Their measurements of solar wind, cosmic rays, irradiance and magnetic fields show that solar minimum is much more interesting and profound than anyone expected.

Modern technology cannot, however, predict what comes next. Competing models by dozens of top solar physicists disagree, sometimes sharply, on when this solar minimum will end and how big the next solar maximum



## ARES Breakfast

Saturday July 11th  
7:30AM  
Perkins Restaurant  
Savage, MN

## NECOS Schedule July 2009

6 Jul KC0YHH Tony  
13 Jul NOPI Dan  
20 Jul WONFE  
27 Jul KB0FH Bob  
3 Aug KC0YHH Tony  
10 Aug NOPI Dan