

Vol. 19 No. 10

[www.mvus.org](http://www.mvus.org)

December, 2005

**Club Memorial Call W8KSE 10 & 3.4 GHz Beacon, presently in Repair.**

**Meeting at the Old Country Buffet ! near SR 725 and Yankee Rd. in Centerville**

**X-mas Family Meeting on Fri 30 Dec. 7:30 PM Pictures from the Microwave Update 2005**

### **MVUS Sunday Net**

Our Sunday MVUS net is held every **Sunday at 14:30 GMT** (we stay on GMT year-round, so currently the net is at **9:30 AM** local time). The net frequencies are primarily **144.280 Mc and 28.960 Mc**.

### **Contents**

De N8ZM.....	3
Sunday Morning Net.....	3
This and That.....	4
Tiny Oscilloscope.....	5
Digital Advantage.....	5
Microwave Update Goldstone Tour.....	6
Cerritos, Parking Lot Pictures.....	6
Danger, Beacons, Solar Minimum.....	7
Microwave Update 2005 Photos.....	8/9
Super Regenerative.....	10
Rover in the French Alps.....	10

### **Upcoming Events!**

**Digital Symposium Middletown, Ohio 14 Jan, 2006**

**VHF Sweepstakes, 21, 22 Jan, 2006**

**Microwave Update 2006, 27-29 Oct in Dayton, Ohio**

### **Silent Key**

MVUS Member **Dave Misek, N8NPX**, became a silent key on Oct 23<sup>rd</sup>. He died of a heart attack at age 63. Dave was quite active in community service and organized communications for a number of events. He was a member of AMSAT and was in charge of scheduling the regional Tuesday night AMSAT net. We all will miss him.

## DE N8ZM

Gerd kind of surprised me this month, as we sometimes don't publish Anom Prop in December, but he's the boss on that call. I just write the editorial (?). Actually, other than being really pressed for time, not to mention that I am probably writing this after he has gone to press with the rest of the issue, it is a good opportunity to wish all of you a Happy Holiday Season and a Joyous, fun-filled, full of ham radio New Year. After all, it IS all about 'playing radio', isn't it?

In case you need to practice for New Year's Eve, our Holiday Dinner Party will be on December 30<sup>th</sup> (the night before the big night) at the Olde Country Buffet at 7:00 PM. Bring your family, as this is a social gathering. Radio talk is allowed, but I don't plan to have a formal (did he say formal?) meeting. At the last meeting we tried to show a few pictures from the Microwave Update conference in Cerritos, Ca. but my laptop went on strike. This time Gerd will bring his (new) laptop and will have it all figured out to work nicely with the projector. Let's hope it works! Last I am looking forward to seeing all of you there. But if you can't make it, rest assured we'll miss you.

Coming up in January is the ARRL VHF Sweepstakes, on the 21<sup>st</sup> – 22<sup>nd</sup>. The N8ZM contest crew is planning to operate again from our hilltop northeast of Urbana, weather permitting. Of course, that could mean that it ISN'T so warm that the ground is too wet by the creek and we can't get in or out. But if conditions make the place accessible, **you are welcome** to come up and operate with us anytime during the weekend. Contact me before then and I will give you directions. We really do need **more operators** to help us keep all four bands running. And if you can't make it, we'd appreciate the chance to work your station during the contest. We'll be on 6m, 2m, 220, and 70 cm throughout the weekend. And if we don't get up there, get on anyway and pass out some points! Sending in your log, even for only a few contacts, helps drive the participation numbers up, which helps the League justify continuing these events. The sweepstakes starts at 2:00 PM Dayton time on Saturday, and runs continuously through 11:00 PM Sunday night. Hope to work you then!

Not much news on other fronts, although plans for the 2006 Microwave Update are coming together slowly. Watch this space for further developments.

Until next month, 73! Tom, N8ZM.

### The MUD 2006 Committee:

Tom Holmes, N8ZM, Tholmes@who.rr.com

Mike Schulsinger, N8QHV, N8QHV@ARRL.net

Gerd Schrick, WB8IFM, WB8IFM@AMSAT.org

Steve Coy, K8UD, K8UD@AMSAT.org

Tony Emanuele, WA8RJF, TonyE\_kdi@sbcglobal.net

# Merry Christmas & a Happy New Year !

## This and That 12-05

- **1920s Hunting.** Hunters were delighted. The new automobile made it possible to reach superb hunting areas in style. A picture in Field and Stream (Oct 2005) shows a duck hunting party where two gentlemen are dressed with shirt and tie. We've come a long way since then. Have we? [Gerd, WB8IFM]
- **BRT.** The GEARVAKf Laboratories have come up with a new technology to complement the present BPL (Broadband over Power Line) craze. This "BRT" System (Broadband over Railroad Tracks) not only would deliver broadband to hitherto unserved remote areas but also provide some welcome revenue for the struggling railroads. One rail will transmit the signal while the other rail would receive customers WiFi. Signals. An ARRL spokesman, who wished to remain anonymous, commented: "With BPL on the overhead lines and BRT emitting RF from the tracks and acting as a ground plane, the entire HF spectrum will be unusable throughout the US. I can't think about a more irresponsible use of the rail lines."  
[ GEARVAKf newsletter, 18 Nov, 2005]
- **Flea at MIT.** This catchy phrase caught my eye, so I picked up the flyer. If you happen to be in Cambridge, Mass, there is a flea market during the summer months every third Sunday. This is a joint venture by the Harvard Wireless Club, the MIT Electronics Research Society, the MIT UHF Repeater Association, and the MIT Radio Society. Had to be a "classy" event! [Gerd, WB8IFM]
- **The Engineer Speaks.** "All questions should start with "what if?" and ... if it ain't broke, take it apart and reassemble it anyway..." [Parker Co. ad]
- **Smoke and Mirrors.** With the rising scarcity and high cost of fuel we all need to lower the thermostat. And we need to wear a nice woolen sweater to keep us comfortably warm. Guess what: reasonably priced woolen sweaters are extremely hard to find. It is hard to believe, with rows and rows of clothing: sweaters come only in cotton and synthetics. The great variety is all smoke and mirrors. [Gerd, WB8IFM]
- **A Lady's Car.** Volvo's 2004 YCC concept car, which was designed for and by women, has a hood that only opens for service staffers, washable seat covers and a wastebasket. [Sarah A Webster]
- **64 Years Later.** It's been that long since the attack on Pearl Harbor. From the 16 million Americans who served in WW2, an estimated 3.5 million survive. Of those 1,025 die every day on average. In 10 years time they will be all gone. [Deptmt. of Veterans Affairs]
- **NEOs.** (Near Earth Objects): Potentially Hazardous Asteroids (PHAs) are space rocks larger than approximately 100m that can come closer to Earth than 0.05 AU. None of the known PHAs is on a collision course with our planet, although astronomers are finding new ones all the time.  
[SpaceWeather]
- **BIG Antenna.** The highlight of the 2005 Microwave Update Conference was a bus tour to the NASA Deep Space Facility at Goldstone. The star of that site is its 70m (210') dish used mostly to communicate with Mars probes. The antenna is massive weighing in at 16 million pounds.
- **What's Next in Digital Cameras?** More mega pixels, of course, whether you need them or not. But how about a build-in GPS? You would add to the time stamp that tells you when you took the picture, while another stamp gives you the coordinates where you took the picture! Anything else?
- **Mishaps in the Home.** Everybody knows the most dangerous place to be is in an automobile. But what about the home? "According to the National Safety council, 16,200 people died from falls in 2003, and 13,900 died from unintentional poisoning. About 2,600 died from fires that year." [James Cummings]

## Elan's Tiny Oscilloscope Measures Up for Scandinavia

FAREHAM, UK -- (MARKET WIRE) -- 07/11/2005 -  
- The newly launched miniature USB oscilloscope, USBScope50, has taken Scandinavia by storm. Designers of the product, Elan Digital, report that they have been inundated with enquiries and initial orders from distribution companies in Denmark, Sweden, Finland and Norway and are now planning to ramp up production of the USBScope50.

"We are getting an unprecedented level of interest in this product, particularly from Scandinavian countries which appear to be more open to new concepts," says Julian Barnard, Elan's Managing Director. "And of course because of the low cost and portability, it means that every engineer can have one." The use of USB interface means that there is no need for an external power source plus the USBScope50 is compatible with all laptops, desktops and even embedded PCs.

The USBScope50 is the first fully isolated, full-function, single-channel oscilloscope, which is smaller than a marker pen. By clipping two (or more) USBScope50s together they form a dual/multi channel device thanks to a unique synchronisation feature.

This miniature scope features 100MHz analogue bandwidth, 50Msamples/sec one-shot acquisition and 1 Gsamples/sec equivalent time sampling (for repetitive waveforms) and is compatible with any standard scope probes. The unit comes with easy to use USBScope software for Windows.

Elan Digital plan to launch a series of miniaturised test and measurement products in the near future.

For further information visit

[elandigitalsystems.com/usb/usbscope50.php](http://elandigitalsystems.com/usb/usbscope50.php)



### Along Comes Digital or the Digital Advantage (Internet)

**Digital** cell phones use the **same radio technology** as **analog** phones, but they use it in a different way.

Analog systems do not fully utilize the signal between the phone and the cellular network -- analog signals cannot be compressed and manipulated as easily as a true digital signal. This is the reason why many cable companies are switching to digital -- so they can fit **more channels within a given bandwidth**. It is amazing how much more efficient digital systems can be.

Digital phones convert your voice into binary information (1s and 0s) and then compress it. This **compression** allows between three and 10 digital cell-phone calls to occupy the space of a *single* analog call. (Since voice quality is not a major concern in ham communication, it seems that we've got at least a 10db=2 S-units advantage over the present analog signal!. Editor)

Many digital cellular systems rely on **frequency-shift keying** (FSK) to send data back and forth over AMPS. FSK uses **two frequencies**, one for 1s and the other for 0s, **alternating** rapidly between the two to send digital information between the cell tower and the phone.

**Clever modulation and encoding schemes are required** to convert the analog information to digital, compress it and convert it back again while maintaining an acceptable level of voice quality. All of this means that digital cell phones have to contain a lot of processing power!



**Ground Station to Mars / a 70 m (210') Dish**



**Microwave Update Tour Group, Thu 27 Oct 2005**



**Antennas in the Parking lot (Cerritos, CA)**



**The Mother of a Rover (multi op no problem)**

## Dangerous Living (From "Space Weather")

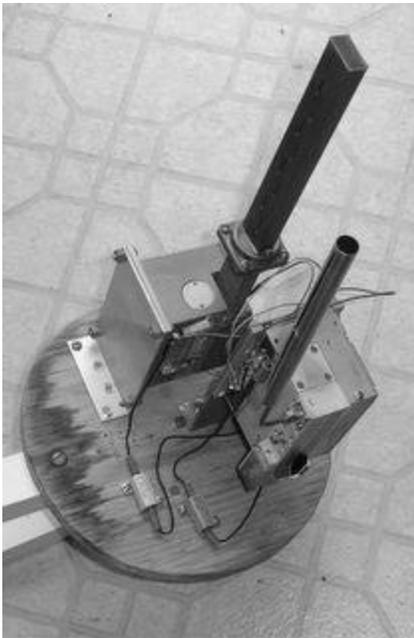
On 14 Dec 2005 there were **749** known Potentially Hazardous Asteroids  
**December 2005 Earth-asteroid encounters**

ASTEROID	DATE (UT)	MISS DISTANCE	MAG.	SIZE (meters)
2005 XA8	Dec. 5	0.6 LD	15	~35 m
2005 XX	Dec. 9	2.2 LD	18	~20 m
2005 WC1	Dec. 14	7.9 LD	15	~370 m

Notes: **LD** is a "Lunar Distance." 1 LD = 384,401 km, the distance between Earth and the Moon.

1 LD also equals 0.00256 AU (Earth-Sun). **MAG** is the visual magnitude of the asteroid on the date of closest approach.

### Beacon Progress Report



#### MVUS Beacons

The beacons: 10 GHz and 3.4 GHz are still being worked on by Brad, K4EFD, while John, N8VZW, worries about getting power to the units. John also made brackets to mount the beacon to the side of a #25 Rohn Tower. We are considering mounting the beacons on the **Dayton ARA's ATV tower**, which is south of Dayton.

At **EM79VO**

**asl 995', top ant at 1150'**

### Solar Minimum [NASA]

Actually, solar minimum, the lowest point of the sun's 11-year activity cycle, isn't due until 2006, but forecasters expected 2005, the eve of solar minimum, to be a quiet year on the sun.

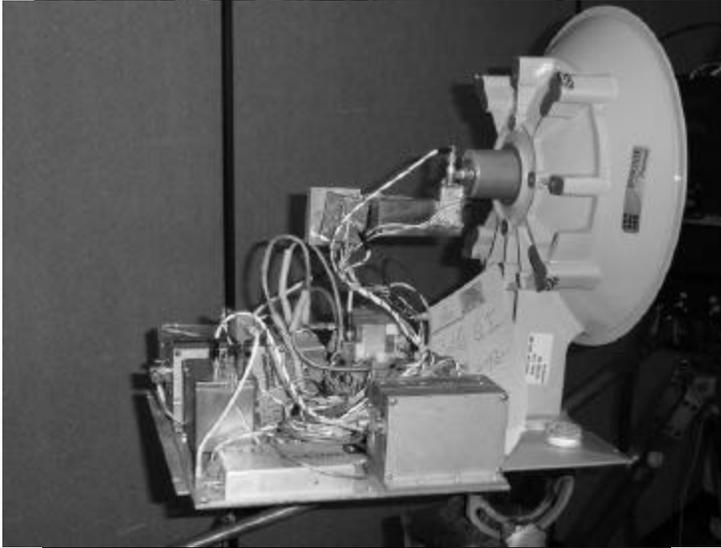
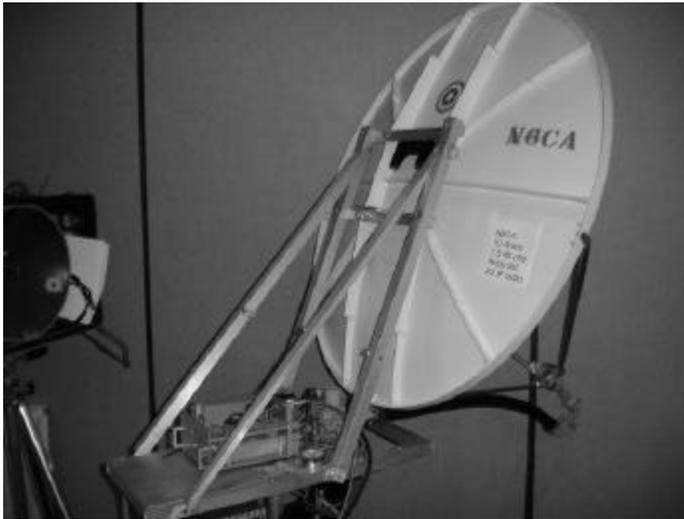
It has not been quiet. 2005 began with an X-flare on New Year's Day--a sign of things to come. Since then we've experienced 4 severe geomagnetic storms and 14 more X-flares.

"That's a lot of activity," says solar physicist David Hathaway of the National Space Science and Technology Center in Huntsville, Alabama.

There was another giant eruption on Sept. 7 causing NASA to announce "Solar Minimum Explodes"

There is still life in our sun even in the "quiet years of the minimum!"

"It seems we've been hovering around the minimum for some time now with solar flux roughly between 70 and 100 and often zero sunspots. With low magnetic activity (K= 0 to 2) that spells acceptable conditions on 15m, even occasionally on 10m. A few weeks ago I checked the 15 m band during a CW contest and was amazed by the dx signals coming through. However, the phone band was practically "dead". Often you get the feeling there are "conditions" and nobody is on the air! So hams should not go into hibernation." Editor

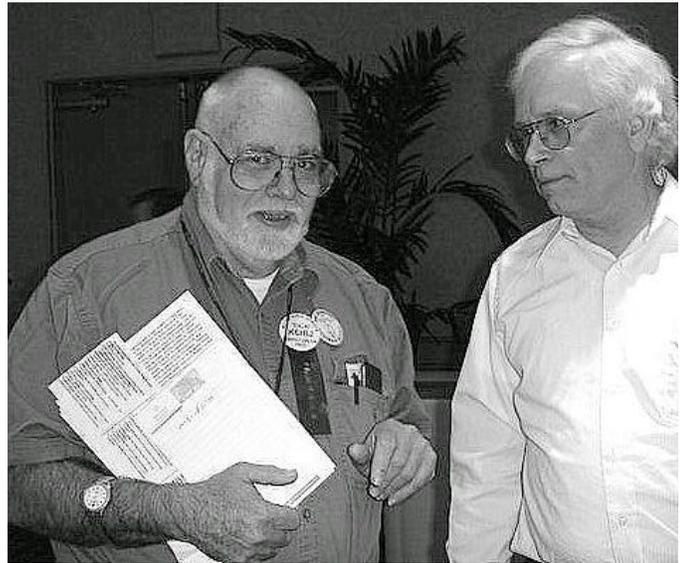


**Impressive Assembly of  
Portable Microwave Stations**

Microwave Update 2005  
(WB8IFM Photos)



Registration



Speakers: K6HIJ and WA7CJO



Dealer



Dealer



Historical Display



## Microwave Update 2005

