

Vol. 20 No. 6

www.mvus.org

August 2006

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

Picnic and Measurements at N8ASB, Daun's place See Below

on Sat 26 August... 1Pm Set-up, 2 to ? Measurements, 4:30PM Picnic

MVUS Sunday Net at 14:30 GMT (currently at 9:30 AM local time, EDT). The net frequencies are primarily **144.280 Mc and 28.960 Mc.**

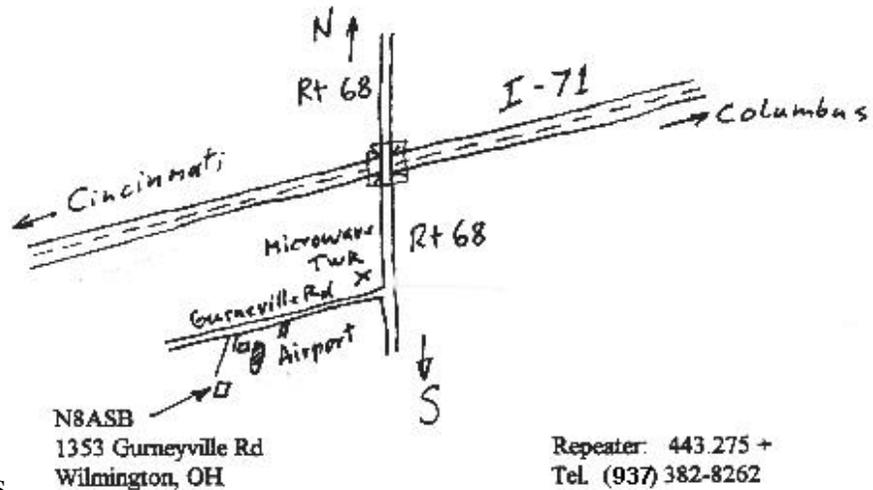
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Next Saturday: **MVUS Picnic and Measurements 26 August**

AND in October: Microwave Update 2006, 20-22 Oct in Dayton, Ohio

Volunteers We are in the final planning stage for MUD 06 and need help. Please offer your services! Wether you like to present a paper or volunteer a few hours for check in or some other activity. Contact Tom at THolmes@woh.rr.com or Gerd at WB8IFM@AMSAT.org Tel: (937-253-3993)



Picnic Directions

De N8ZM, sri WB8IFM

I am going to stand in today for Tom. You see, he is unavailable (some people have to work for a living!) Microwave Update is coming up fast. Only two more months to go!

The last MUD preparation meeting (8-18) still suffered from summer and vacation time. Only 4 people showed up! On the other hand, we did get a lot of things straightened out, so in all it's looking up! Right now John, N8UR, is working hard on the Web site, relieving Steve, K8UD, who is still helping out but now concentrating on getting sponsors and coordinating the "dealers" room.

We do have an outline and a preliminary presentation schedule. As in all conferences there are areas that are well represented, others are lacking. So far we have nothing on ATV and propagation for example. However, if you have a dish and wondered how to feed it, this is your chance!

Registrations are trickling in and we decided on another round of publicity. Bob, W8TQK, who did a good job the first time around will get this going shortly!

The deadline for printing the proceedings is approaching fast. Although things look good, we still have some stragglers with their papers. If you have anything, could be a one page write-up, please get it to me now.

Maty Weinberg from the ARRL, who is handling the layout and printing of the proceedings, is very helpful and doing a super job.

Coming Saturday, 26 August, we have our **annual picnic and antenna and other measurements**, as usual at N8ASB, Daun and N8CXS, Karen's place near Wilmington. Tom will bring a network analyzer and Daun will use his set up to make pattern measurements. We also have the usual antenna range measurements from 2m on up!

The club provides food and drinks as usual; bring a side dish or desert if you can.

This should be a good exercise for our Sunday morning Measurement session at MUD. Although the Holiday Inn grounds are not conducive for antenna test, with several measurement gurus present we should be able to wing such measurements. These situations, although challenging, bring out the ingenuity of ham radio.

That's it for now! CU at the picnic! Vy73, Gerd, WB8IFM

MUD-2006 Dayton (Oct 20, 21, 22 - 2006)

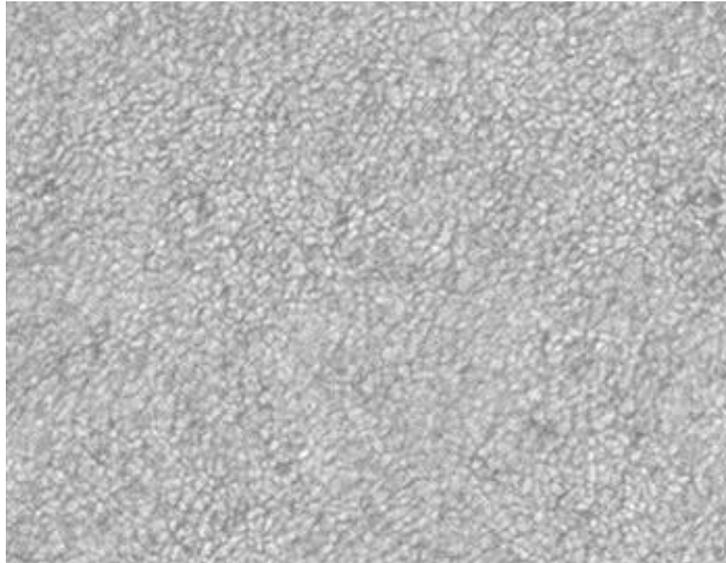
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This and That 8-06

- **Energy Drinks.** They call them Rock Star, Monster and Red Bull. The label on “Monster” says “meanest energy supplement on the planet”. But dietitians say much of the buzz comes from good old-fashioned caffeine and sugar, and overuse can actually lead to chronic fatigue.
[Amelia Robinson]
- **Counting.** Not everything that can be counted counts, and not everything that counts can be counted.
[Albert Einstein]
- **Curiosity.** The cure for boredom is curiosity. There is no cure for curiosity. [Dorothy Parker]
- **Printer Speed.** I think printer companies have a secret low gravity location (like on the moon) where they get results seemingly impossible to duplicate under real world conditions.
[David Colker]
- **Mouse Click.** Times have changed. In the 21st century, great men can amass immense fortunes by working only the muscles of their mouse fingers. [Scott Lehigh]
- **Sweet Tooth.** The average American consumed about 140 pounds of cane sugar, corn syrup, and other sugars last year – 50% more than the Germans and French, and nine times as much as the Chinese.
[The New Yorker]
- **Math.** You have old math and new math, but also business/government math or tricky, deceptive math.
[Gerd, Wb8IFM]
- **Old Saying.** “Never start an argument with someone who buys his ink by the barrel.”
- **The Toothbrush.** It’s now called an “IntelliCleanSystem” and comes with DVD for instructions. Life is getting more complicated. The word “complexification” can now actually be found on Wikipedia.
[Ellen Goodman: A brush with feature fatigue]
- **Pile-Up.** This is a phenomenon observed with HF dx-peditions. As a rare dx you attract so many callers until you can no longer copy anything. Then you change frequency and start over. [DC9ZP]
- **USO.** This stands for “Ultra Stable Oscillator”; a new type of oscillator used for tracking signals from space probes that have moved to Mars and beyond.
- **How many Knobs? = QKS?** How many knobs and switches on your radio? QKS 65/3 means, I have 65 knobs and switches, but only understand 3 of them. [Jeffrey D Angus]
- **Dear Abby.** “My husband burns the hair out of his nose with a lighted match. And he thinks I am crazy because I voted for Goldwater.” [No.6 of “most unusual problems”]
- **Houdini.** Surprising as it may seem, Houdini was not an instant success. For the first five years, he tried every type of magic, from card manipulations (billed as the "King of Cards") to illusions and run-of-the-mill box escapes. In 1896, ready to give up, he actually ran a newspaper ad offering to sell all of his magic and secrets for \$20. There were no takers. [magictricks.com]

QUIET SUN Spaceweather 7-13-06

Sunspot 899 has dissolved, leaving the sun blank and quiet. Solar activity should remain low for the rest of this week. **NOT SO BLANK:** Even when the sun is "blank," there's something to see: solar granulation, shown here in a July 2nd photo from Philippe Vercoutter of Ypres, Belgium:



What are these granules?

The sun is so hot, it literally boils. Granules are bumps on the boiling surface, much like the bumpy surface of water boiling on a hot stove. One difference: While the granules on your stove are only a few centimeters across, granules on the sun are as wide as Texas.

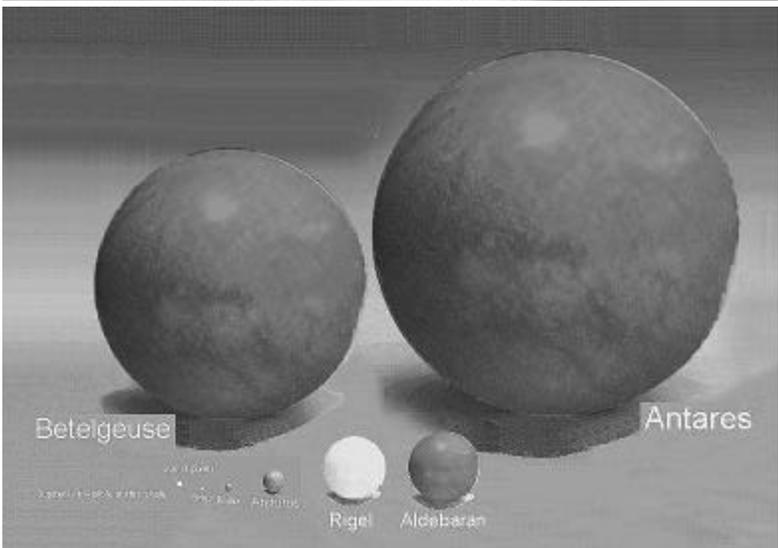
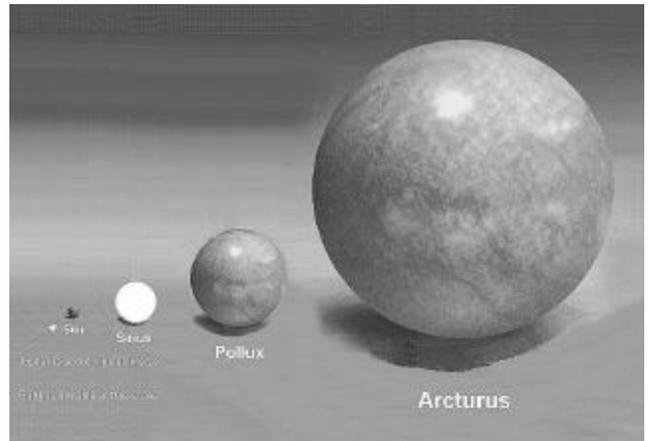
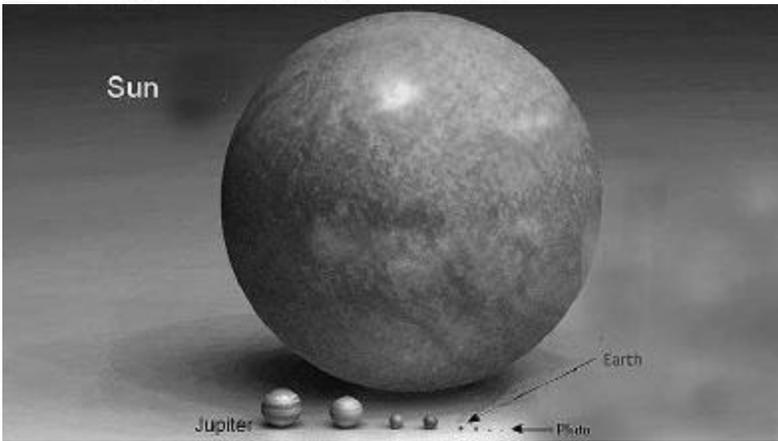
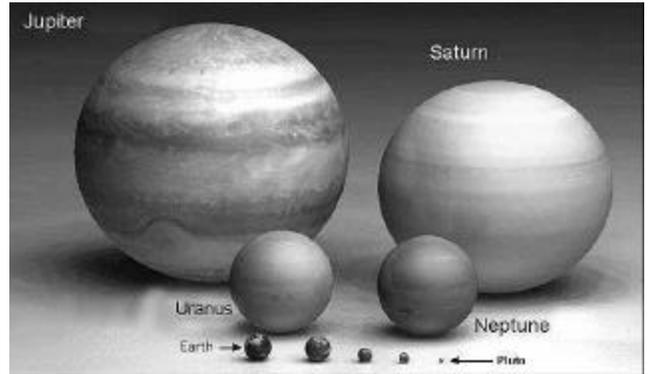
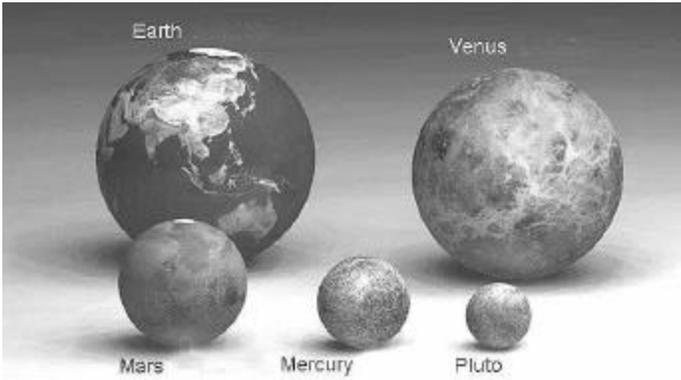
SUN SPLASH NASA

The surface of the sun is a million times more spacious than the surface of Earth. If you scan so much terrain every day, you're bound to see some strange and unexpected things:



Photo credit: Larry Alvarez and a Coronado SolarMax90.

"There was an interesting area on the sun today that looked like the splashing of a water droplet on the surface," reports photographer Larry Alvarez of Flower Mound, Texas. "It danced about, jetting out streams of matter every 30 minutes or so."



Sun (one pixel)

Comparative Sizes of our planets, the sun and selected stars

From the Web,
submitted by
KF4TP, Olaf

And you thought,
we were the center of the Universe!

THE MEANING OF PLANET

The International Astronomical Union's Planet Definition Committee has proposed a new, official definition: "A planet is a celestial body that (a) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, and (b) is in orbit around a star, and is neither a star nor a satellite of a planet."

In plain language, if it's round and it orbits the Sun, then it's a planet.

On August 24th, astronomers gathered at the IAU* General Assembly in Prague will vote on the proposal, yea or nay. If it passes, the Solar System will have **twelve planets**: Mercury, Venus, Earth, Mars, Ceres, Jupiter, Saturn, Uranus, Neptune, Pluto and Charon (a double planet) and 2003 UB313.

*Note: The International Astronomical Union (IAU) is a worldwide organization of distinguished astronomers. It has been the official arbiter of planetary and satellite nomenclature since its founding in 1919.

Magnetic Antenna

By Gerd, WB8IFM

Unbeknownst to me I built and experienced with my first "Magnetic Antenna" back in the late 1940s. At that time the first VHF radio stations were put in service in Germany on account of the reduced number of medium wave radio frequencies allotted to the "loser" of WW2.

I read a lot about radio and the high frequencies. And VHF at the time was considered extremely high! Leads had to be kept very short, anything but air had a very high loss and the skin effect required large diameter wires possibly silver coated.

In building a receiver for these new frequencies, I cracked the tubes' Bakelite sockets and soldered the wires coming out of the glass directly into the circuit. My resonant circuit for 100 MHz had a coil of 3 turns of 1/8" copper wire and was 1 1/2 " in diameter. When I first energized the new rx I was surprised to pick up a radio station without having connected the antenna yet, and this inside the house right on my worktable. Obviously the large, exposed coil acted as a magnetic antenna.

Today, they call a loop which acts as an inductor in a resonant circuit a magnetic antenna and it is manufactured and sold commercially. Of course, in spite of its relatively small size (at short-wave), it still needs to be mounted in the clear and as high as you can put it as any other type antenna.

Horizontal Antennas over Real Ground

Here are the conclusions of extensive measurements (made on 14Mc) and described in QST in Nov 1975 by W7KAR, Hardy K Landskov.

- 1) Low heights should be avoided with all horizontal antennas, because their gain suffers badly at elevations under one wavelength above ground
- 2) Antennas located one wavelength or more above ground have gains within a few tenths of a dB of the perfect earth case, regardless of soil conditions.
- 3) High angle radiation (above 45°) suffers as much as 3 dB, for antennas over poor earth regardless of antenna height.

Omni Antenna Solution

By Lloyd, NE8i

The gang in Minneapolis has a really neat beacon solution. Essentially, they aim the signal with a 10 dB horn into the tall downtown buildings, several exist over 500 ft tall, and the signal gets reflected and scattered all over the place, providing a really good 30 mile "omni style" pattern. Right now, they have just 10 GHz and 2 Watts. Eventually they hope to have 903 MHz through 24 GHz represented.

Guys out in Colorado say that trick works with their 14,000-foot mountains also. They have been doing that for a few years

2006 CQWW VHF (7-17-06) Contest Report.

De Lloyd, Ne8i

Drove over 1,000 miles, 19 hours contesting, operated in 14 grids; quick count, 247QSOs, 100 Grids worked, mostly 6M, yielding about a 25K rough score.

Logging all done by hand on paper with pencil. Tired of the computer comments. Yes, I own a laptop. Problem is, I need either a driver or operator. **I cannot drive; operate the radio, and a computer at the same time.** Too dangerous. Plus, RFI issues. Many **laptop displays, generate broadband noise**, which greatly increase the ambient noise floor. The rover is bad enough. I have worked very hard to reduce the internal rover noise floor. During the day, the log is not bad. part is at night, I have to keep my eyes on the road, and write blindly. Messy at best. I use a steno pad, and flip lots of pages at night. At least all the pages are held together, sort of in order. Have to finish duping everything. Plus trying to read my own scrawl. I tried a tape recorder, but RFI issues.

Heard lots of CW, but operated only SSB. Using the key would too dangerous while driving. 6M was nothing short of fabulous. I think it was better than the June VHF opening. Heard, worked stations right up to .300. Nice when the band is that good. From the beginning of the contest, to after local midnight, 1AM, it was open. Then Sunday, again. Very little 2M. I am told there was some 2M E. Missed it. Lucky to find any 2M activity. The only stops I made were in EN75 and EN70 and for gas, during the night. Had several hams pass me. Got the usual 52 hand sign. The thing is, no FM in the rover. **Do not have any working FM equipment**, sorry about that guys. Plus, I was busy on 6M SSB.

The rover set-up, 2 poles at the back, support a **full wave loop for 6M**. Works well. After testing 6 different 6M antennas, that one works best by far. Worst, a mag mount. Last year, to try out antennas, I had several on the rover at once. 6M 100W. 2M 7-el Yagi and 160W.

Conditions on 6M were varied. Short skip, long etc. Heard several reports of European stations, did work to the Caribbean, and South America. Heard lots of familiar call signs. Many rovers being worked, this in spite of the high price of gas.

Grid I got the most "thanks, new grid", was EN75! Second most EN80. Plan was, 30 to 90 minutes in each grid. En route, carefully planned, mostly expressways, pedal to the metal. Michigan 70 MPH limit really helps there. Was in 2 grids twice, which I try and avoid. Causes dupes. I had several other bands with me, in case there was time, and people wanted to try things.

As usual, QSL 100% direct, the old fashioned way. No (lotw ?), no e-qsl. After the contest Sunday evening, 2M opened up into Zero land. Several stations made contacts up to 3456.

Telegram from Central States

De Lloyd, NE8i

Minneapolis: Lots of people, things. Hot! 101 F. Measured it! Do have set of DVDs of the programs. Down East had more of the 8W 10 GHz amps for \$300. Lots of small parts and pieces. Several dealers. Next year, San Antonio Texas, which was 15 degrees cooler than Minneapolis this year. The Northern Lights Group did a really good job hosting the conference.

In October, Microwave Update in Dayton Ohio.

Additional Papers Only (no Presentation)

Off-Center Fed Dish**
Scalar Feedhorns for a Low F/D Dish**

W6OAL, Dave Clingerman
WD5AGO, Tommy Henderson

Two 24 GHz Rigs**
24 (28)V Relay Driver**

KH6WZ, Wayne Yoshida
WA3IAC, Chuck Steer

List of Shopping Sightseeing Places

Air Force Museum
Dayton Art Institute
Riverscape
Carillon Park
Sunwatch
Wright/Dunbar National Park Museum
Waynesville-- Antique shops
Springfield – Antique Malls (3)

Springfield – Frank Lloyd Wright
Museum
Pan for gold at Bruce Lundy's house
Yellow Springs (Antioch)
Fort Ancient
Cincinnati

MUD 06 Outline of Activities (details, exact times to follow)

Thursday 19 Oct	Surpluss Shopping...	Sightseeing,
Friday 20 Oct Evening	Presentations ... Fleamarket	Sightseeing Shopping
Saturday 21 Oct Evening	Presentations... Banquet	Sightseeing
Sunday Morning	Measurements Wrap-up	

We still need Volunteers for the Check-in / Information Table and other Jobs

Microwave Update 20 - 22 October, 2006 in Dayton, Ohio

Friday 20 Oct

Welcome & Introduction – Tom, N8ZM & Gerd, WB8IFM

Antennas/Dishfeeds

Slot Antennas – W5OE Robert Templin
High Performance Feedhorns – W1GHZ Paul Wade
Dual Mode Feedhorns – W1GHZ Paul Wade
Dual Band Feed System – VE4MA Barry Malowanchuk

Afternoon

LNAs/PAs

Progress towards 77/78 GHz LNAs – WA1MBA Tom Williams
2.4GHz Power Amplifier – JR3JZM Norio Ueshima

Rover/Operating

Operating Tips for the MM-Wave Bands – WA1ZMS Brian Justin
Operating from the Beach – W2VT Zack Lau
Four Band Set-Up – K4TO Dave Sublette

Evening

Fleamarket

Saturday 21 Oct

Welcome, Announcements & Introduction – Tom, N8ZM & Gerd, WB8IFM

EME/DeepSpace

EME on the Microwave Bands (tutorial/primer) – W5LUA Al Ward
10 GHz EME – KA8ABR Mike Murphy

Satellites/Space

AAMSAT-DL and the Voyager 1 Receiving Experiment & P3E and P5A Projects –
ON6UG Freddy de Guchteneire

Antennas/Measurements

Antenna Range Setup-Up (tutorial/primer) – WA5VJB Kent Brittain

Afternoon

Commercial/Other

Automotive Radar Detectors – W8MM Mike Valentine
Latest Microwave Measurement Techniques – N8ZM Tom Holmes

Building/Prototyping

Making Test Adaptor Boards – Aldo Hoyt

Los/Beacons

Local Oscillator Design – WB8GXB Mike Suhar

Other

Earthbound Microwave Translator – WB8IFM Gerd Schrick

Evening

Banquet