

CHEESE BITS



W3CCX

CLUB MEMORIAL CALL

SCANNED TO PDF BY BERT, K3IUV, 2013



ARRL
Affiliated
Club

VOLUME XXXX

October 1998

Number 10

TIE PREZ SEZ

Summer is over and winter is fast approaching. Time to get some antenna work done before the cold weather sets in once again. Bill, AA2UK, has agreed to be the January contest chairman for another year. If you think he was intense last year, wait until this year! You slackers better run for cover. Bill is off and running, like a Tasmanian Devil on Viagra, with many new ideas to keep the Pack Rats at the top of the food chain. You can't just do what you did last year, you have to do better. What you did last year is a target for your competitors, so you have to move forward or get steam rolled from behind. Now is the time to get started on station improvements. There are many helping hands if you just ask.

We want to thank Steve, N2CF1, and of course Sandy, for coming to last month's meeting and giving an excellent program on the new and exciting items that are now available for the VHF and up enthusiast. The technology just keeps improving year after year. Many of the things we take for granted today just were not possible twenty years ago because of the level of the technology we now use in our equipment.

What a great Hamarama weekend!!

John, K13XG, assembled an outstanding VHF Conference program, which many have told me, is the best conference they ever went to! The speakers were great, the food was gourmet and inexpensive and even the most casual observer could feel the enthusiasm of the audience during the talks. You have to come to these things to witness the really excellent cross section of technical experts that masquerade as ham radio operators. The pool of talent is of great depth. Technology is really still in the hands of the people. Thanks to Paul, WB3JYO, and Gerry, K3MKZ and all the people that had a hand in the Test and Measurement room and helped make the measurements on many, many pieces of equipment. Looked like a picture right out of the Hewlett Packard catalog.

The flea market was a little soggy this year. In spite of the lousy weather there was still a large turn out. Mark, NK8Q and Bob, N3XEM did a Pack Rat job of organizing the work teams and seeing that everything went smoothly. It just goes to show you how bad Hams need their flea market fix every year! We gave away a \$300.00 Grande prize to K00J and \$100.00 vendor appreciation prize to a seller from New Jersey. Thanks to the 39 or so club members who gave up their Sunday to make this event happen.

This month's meeting features Pack Rat WA3NUF, Phil Miguez who will teach a Noise Figure 101 class on a level we all can understand.

73, Ron, W3RJW

MEETINGS

Third Thursday each month at 8:00 PM
Southampton Free Library
947 E. Street Road
Southampton, PA 18966

Pack Rats' **CHEESE BITS** is a monthly publication of the
- Mt. Airy VHF Radio Club, Inc. -
 Southampton, PA

SUBSCRIPTION RATE: \$10.00 PER YEAR (USA)
 \$12.00 PER YEAR (CANADA)
 \$15.00 PER YEAR (ELSEWHERE)

We operate on an exchange basis with other non-commercial publications. Anything that is printed in **CHEESE BITS** may be reprinted in a not for profit publication, unless otherwise stated, provided proper credit is given.

DEADLINE FOR ARTICLES AND SWAP SHOP IS THE MONTHLY MEETING DATE. NON-COMMERCIAL SWAP SHOP ITEMS-FREE OF CHARGE.

Pack Rat WEB Site: <http://www.ij.net/packrats>

SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, W2SJ
 7258 Walnut Avenue
 Pemsauken, NJ 08110
 (609) 665-8488
bf57a@prodigy.com

EDITOR:

Harry Brown, W3HJ
 3012 Potshop Road
 Norristown, PA 19403
 (610) 584-4846
hbrown@voicenet.com

CLUB TREASURER:

Dave Mascaro, W3KM
 1603 Mink Road
 Ottsville, PA 18942
 (215) 795-2648
dmascaro@gi.com

AWARDS CHAIRMAN:

Bob Fox, W3GXB
 (610) 346-8698

TRUSTEE OF CLUB CALL - W3CCX

Ron Whitsel, W3RJW
W3RJW@aol.com
 (215) 355-5730

PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz, Churchville, PA FN20LE

OFFICERS: 1998-1999

PRESIDENT: W3RJW Ron Whitsel, W3RJW@aol.com
 VICE PRES: WA3EHD Jim Antonacci, antonacci@pacslbm.org
 REC. SECR: WA3AQA Walt Zumbach, wzumbach@bellatlantic.net
 TREASURER: W3KM Dave Mascaro, dmascaro@gi.com
 COR. SECR: N3AOG Dick Conly, n3aog@compuserve.com
 DIRECTORS: WA3DRC (2 Yrs) Ed Finn, ed_finn@tuste.vlsi.com
 N3EUV (2 Yrs) Walt Rauscher
 AA3GN (1 Yr) Joe Landis, landis@nad.com
 W2SJ (1 Yr) Bob Fischer, bf57a@prodigy.com

MONDAY NIGHT NETS

TIME	FREQ.	NET CONTROL
7:30 PM	50.150 MHz	K3EOD/WA3EHD
8:00 PM	144.150 MHz	N3ITT
8:30 PM	222.125 MHz	W2SJ
8:30 PM	224.58R MHz	W3GXB
9:00 PM	432.110 MHz	W3RJW
9:30 PM	1296.100 MHz	WA3NUF/AA2UK
10:00 PM	903.100 MHz	N3AOG

COMMITTEE CHAIRMEN

LADIES' NIGHT: N3AOG 215-443-9965
 JUNE CONTEST: N3ITT 610-847-5490
 HAMARAMA: NK8Q 610-847-2285
 VHF CONFERENCE: KB3XG 610-584-2489

PACK RAT BEACONS - W3CCX/B FM29.1W

50.080 144.284 222.065 432.295 903.072 1296.251 MHz
 2304.037 3456.220 5760.200 10,368.200 MHz



THE AMERICAN RADIO RELAY LEAGUE

KAY C. CRAIGIE, WT3P
 DIRECTOR, ATLANTIC DIVISION

5 Faggs Manor Lane
 Paoli, PA 19301-1905
 (610) 993-9623

wt3p@arrl.org



THE AMERICAN RADIO RELAY LEAGUE

Bernie Fuller, N3EFN
 VICE DIRECTOR, ATLANTIC DIVISION

17668 Price Road
 Saegertown, PA 16433
 814-763-1529

n3efn@arrl.org

STEVEN N. WHITE
 Attorney at Law

2217 PALOMINO DRIVE
 WARRINGTON, PA 18976

TEL: (215) 343-6902
 FAX: (215) 343-6903

CALENDAR OF COMING EVENTS - OCTOBER 1998

- 3 The 22nd Annual Mid-Atlantic States VHF Conference will be held at the Hampton Inn, 611 exit (Willow Grove) of the PA Turnpike. For further info, contact the Conference Chairman, John Sortor, KB3XG, 215-584-2489.
- 4 Hamarama 98 will be held at the Bucks County Drive-In on Rte. 611, in Warrington, Pa.
- 4 Free Breakfast for Hamarama workers at Lancers at 4:30 AM.
- 8 Board of directors meeting for the Mt. Airy VHF Radio Club will be held at the QTH of Walt, N5EVV at 8:00 PM. All interested parties welcome. Call 215-885-9145 for directions.
- 10-11 ARRL International EME Competition. See Sept. QST page 102 for the rules. Second weekend on Dec. 5 and 6.
- 11-12 Pennsylvania QSO Party. See October QST page 107 for rules.
- 13 Columbus Day
- 15-17 Microwave Update '98 will be held at the Holiday Inn in Estes Park, CO. Contact Bill McCaa, K0RZ at 303-441-3069. Wmccaa@aol.com for more information.
- 15 Regular meeting of the Mt. Airy VHF Radio Club at the Southampton Free Library on Street Rd. in Southampton, Pa. Phil, WA3NUF, will present a talk on Noise Figure and LNA's. All VHFers are encouraged to come and enjoy the evening with us. You need not be a member to attend.
- 18 RF Hill ARA Hamfest at the Sellersville Fire House in Sellersville, Pa. VE exams will be held. TI on 144.710/145.310, 134.28/88, and .52.
- 21 Predicted peak of the Orionids meteor shower.
- 22 LEAP INTO THE MICROWAVES with the Packrats! 903 and above. Every 4th Thursday of the month operate from 8 to 10 PM local time on any band 903 MHz and above. For coordination on those difficult long haul contacts 144.260 MHz is the suggested liaison frequency.
- 24-25 CQ World-Wide DX SSB Contest. See Oct. CQ, page 78 for rules or CQ magazine.
- 31 Halloween

HEALTH AND WELFARE

To all of the Pack Rats, I wish to thank all of you for the many cards, letters, phone calls, and flowers that arrived here when my wife Bert, W3TNP passed on. It's nice to know she and I have so many caring friends. Thank you, Ernie Kennas, W3KKN

With regret, the club has learned of the death of Dorene, the wife of Don, KA3MGB, on September 12. She had contracted cancer in February and received chemotherapy. In August the cancer was gone but she developed congestive heart failure, from which she never recovered, due to the chemotherapy. Don, KA3MGB.

We are also sad to report the death of one of the newer members of the Pack Rats, Ron Dudek, K3LIC passed away in early October.

GLACOBINID METEOR SHOWER

There is a possibility that the Giacobinid/Draconid meteor shower may put on an enhanced display this year on October 10th. This shower should be monitored for any unusual activity. From a historic note one should look up the paper, "Giacobinid Meteor Spectra", by Peter M. Millman, in the August 1972 IRASC, Vol.66, pp.201-211. (Journal Royal Astronomical Society of Canada). To summarize, Peter Millman secured 21 spectra from the 1946 shower with two objective prism spectrographs. Weather prospects in Ottawa did not look good, so Peter, through the cooperation of the RCAF, had a DC-3 put on alert to take him elsewhere should the weather not cooperate. Sure enough, it was cloudy in Ottawa so the RCAF flew him to North Bay just in time to set up his spectrographs for the meteor storm. This classic paper showed that the meteors from this shower were very fragile and fragmented at abnormally higher altitudes than other shower meteors.

Unfortunately, this year a bright moon will interfere with observations but one can still conduct observations in the early evening before the moon starts to be a problem. Let's hope we have a good shower! Ed Majden - Amateur meteor spectroscopist - AMS Affiliate - MIAA Associate

SWAP SHOP:

(send all ads to the editor)

FOR SALE: Tektronix 531A Oscilloscope with cart, probes, preamps, manual, excellent condition, ask \$200 (pick-up in Philly-Area). Telechrome 3508 Test Signal Generator and Pulse Generator, ask \$25. Sencore CR161 Portable Cathode Ray Tube Tester, ask \$30. Contact Jim Stone, W3FIE at 215-342-9343

FOR SALE: Kenwood TM-721A DualBand 2 meter/440 MHz Mobile Transceiver, 50 watts output, extended receive/transmit, with up/down mike, mobile bracket, manual, mint at \$350. Kenwood TL-922A 10-160 meter HF Amplifier, mint condition with pair new 3-500 Z finals, does 1500+ watts output, with manual, \$1150. Heath HW-101 HF SSB/CW Transceiver with HP-23 Power Supply, CW Filter, very nice condition, make offer. Radio Shack DX-150 Shortwave, Amateur Receiver, very nice condition, make offer. Hallicrafters S-120 Shortwave Receiver, very nice condition, make offer. Contact: Dennis John Gazak, N3DG at 215-938-8820

Wanted: Kenwood TM-742 Triband Mobile Transceiver with 2/220/440 Modules. Contact Dennis John Gazak, N3DG at 215-938-8820

FOR SALE: CALLSIGN HISTORY. Name and address of each holder since 1912. Cost \$12 plus SASE for primed CERTIFICATE. Wanted CallBooks before 1970 and QST's before 1940 will buy or trade. Also looking for 1x2 Ham Radio License Plates for my collection. Ron Allen W3OR, PO Box 73, Bethel, De, 19931-0073 or call 302-875-1100.

FREE: 14.4 and 28.8 Kbaud external modems. Contact Harry, W3HT, hbrown@voicenet.com, 610-584-4846.

TID BITS

1998 Worked the Most Packrats Award Winner Jeff, K1TEO reports: Thanks so much for the great award from the January contest. Received it last week and will look forward to mounting up in my shack. I'll have to resist the urge to use the key - it's a lot nicer than the ones I use! Anyway, just wanted to let all the Rats know how much I appreciate the plaque. Frankly, the "rest of us" probably owe you guys an award for creating so much activity in the January contest and helping everyone to have a great time. CU in January '99 and look forward to working lot's more Packrats! 73, Jeff K1TEO

Local VUCC News: Harry, K3HZO just upgraded his 1296 MHz grid count from 45 to 50 grids.

CQ Magazine, CQ-VHF, or 73 Magazing for \$7.75 a year. If you are a member of an amateur radio club. Contact bcmagl@ixpres.com if interested. (Note: I have used this subscription service for many years. They have a catalog that they will send you listing approximately 750 magazines. Most of the ones you see at newsstands are on the list except those requiring a membership such as QST. Harry, W3HT).

A note from one of our readers in Israel. In the Cheesebits article on Transceiver and the Transverters there is a "glowing error". It is that the **Yaesu FT 980** does have provision for a transverter. Not only that it will display the frequency of the 6, 2.1 1/4 meter and 70 cm band. I have been using one like this since 1983. I use it with a FTV 901R transverter I bought from Warren way back then. Be glad to share the details with anybody interested. Write me via e-mail. Al, K3BRS, gwhiting@mail.netvision.net.il

The new **432 MHz and Above EME Newsletter** by Al Katz, K2UYH is at: <http://www.nitehawk.com/rasmit/cm70cm.html>.

There is a **NEW 2 METER SSB NET** based out of the Charlotte, NC area of EM95. The net meets weekly on Wednesday nights @ 9:30 PM EDT on 144.220 USB. The net control station is Wilton / WB4PCS, from Clover, SC (just south of Charlotte) in EM95. The net was started to help promote increased activity on 2 meter SSB. Wilton / WB4PCS doesn't have e-mail capabilities at this time, so please direct any questions, comments to me & I will forward them to him... tnx & 73's. Bill Fisher, w4grw@email.com. Cat Square, NC EM95

VUCC Award Checking: If you want QSL cards checked for your initial VUCC Award or an update, contact Harry, W3HT at hbrown@voicenet.com.

CHEESEBITS SUBSCRIPTIONS

Cheesebits subscriptions are available to everyone interested in activities and information from the VHF through the microwave frequencies. Subscriptions are for 1 year of 12 issues. For a subscription, send the following information:

Name: _____ Call: _____

Street Address: _____

Town: _____ State: _____ ZIP: _____

Subscription Rate: \$10.00 per year (USA), \$12.00 (Canada), \$15.00 (Worldwide)

October 1998

Send to: SUBSCRIPTION/ADVERTISING MANAGER;

Bob Fischer, W2SJ, 7258 Walnut Avenue, Pennsauken, NJ 08110

MORE TID BITS

Thanks for Tower Help! Special thanks to everyone who has been helping out with advice for getting my antenna tower and yagi stacking through the concept phase in into reality. Special thanks especially to Packrats: Bob, W2SJ; Paul, WB3JYO; Bob, N3XEM; Joe, AA3GN; Dick, N3AOG; Bob, W3GXB, et al. and non-Packrats: Mike, KA2BIQ; Ray, N2ZHV; Marc, WA3CRM; Fred, KB2ZWU; Kevin, KD3KZ; Charlie, KB3AJF; et al. We had a grand antenna tower raising project on Saturday. While the job is not done, we accomplished as much as I planned to do, that is removing the 5 yagis from the rooftop, installing the rotor in the tower, along with the 2" aluminum mast, and then mounting 5 yagis on the mast (two were upgraded) with proper alignment. There are a few issues that need to occur yet, but overall a good job so far. Major issues left are reforming of the crank for the tower (telescoping crank up 50 foot), pins for the attachment to the base (better than the bolts which are difficult due to threads instead of a nice smooth surface), and feedline runs (1/2" and 7/8" hard-line will be run on most bands). Initial checkout with the old feedline was most impressive. Stay tuned, more to follow! From: Mark Schreiner, NK8Q, mark.schreiner@lmco.com.

More HSMS Info: See the "Hot News & Announcements" section of the W6/PA0ZN HSCW Web site. URL: http://www.nitehawk.com/rasmit/ws1_15.html 73, Shelby, W8WN

VHF+ CONTEST GRAN PRIX

By Jerome - K3GNC, 6.2.222.432.1296, FN20JA

EVENTS: JANUARY, JUNE, AUGUST(UHF), AND SEPTEMBER VHF+ CONTESTS.

Category: Single Operator

Tabulation: QST Listings of Contest Results

Eligibility: Top 25 Scores from each contest - Cumulative.

PRIZES: Gratitude from fellow weak signal advocates for participating and turning in a log - in the 'ONLY' measurable events VHF+ers can demonstrate use/justification for our VHF+ Bands. (Note: EME Contest may be added for 1999 or ??)

The standings will be published after each QST posting. There will be a Top 50 listing one time a year, after all results are known. This is primarily for the great stations and operators whose locations demographics preclude them making the top 25 SALUD!

STANDINGS AFTER THE JANUARY 1998 VHF CONTEST

<u>PLACE</u>	<u>CALL</u>	<u>SCORE</u>
1.	WA2TEO	357,888
2.	AA2UK	289,872
3.	K1RZ	204,876
4.	W3RJW	201,260
5.	KE8FD	194,380
6.	WC2K	187,044
7.	WZ1V	140,375
8.	WA3NUF	137,904
9.	N2BJ	131,886
10.	WB3KRW	128,980
11.	K8TQK	122,996
12.	WB3JYO	119,668
13.	W0UC	118,026
14.	N3EXA	117,312
15.	K5TUA	111,996
16.	W2AAD	109,489
17.	K2TXB	108,192
18.	N3DQZ	103,950
19.	K3DNE	100,548
20.	K5TR	99,828
21.	W2UR	98,370
22.	N3NGE	94,800
23.	WA4GPM	87,843
24.	K2UOP/8	85,816
25.	WB2VVV	83,536

The standings will be updated after the 'JUNE' Contest results are published. 73, Jerome - K3GNC, 6.2.222.432.1296, FN20JA
CU ON THE BANDS:-

1998 HAMARAMA REPORT

As Co-Chairman of HAMARAMA '98 with Bob, N3XEM, I would like to express my complete thanks to everyone who came helped with the event this year. It was such a pleasure to have a fine crew assembled & performing the various tasks in such a professional manner. While we couldn't do anything about the weather or the road construction, those factors that could be directly controlled were managed very well.

As the annual fund raising event for our club it is good to see so many people pitch in. This helps us all enjoy the benefits of our efforts during the rest of the year during events such as the Ladies Night dinner and the June Contest. Without good fundraising efforts we would not be able to have as much fun throughout the rest of the year. While I haven't seen the final numbers yet, despite the weather, I think we did pretty well. Numerous comments of appreciation from attendees of both the Conference as well as the HAMARAMA have been coming in via e-mail, phone, and in person. Comments about how good our hospitality was during the weekend is a fine compliment to each and every club member! It is a pleasure to be in a club with as many fine gentlemen as we have that work so well together toward a common goal. No wonder we continue to excel at our contest and operating goals. It is in our blood to help each other, showing that synergism benefits everyone!

The \$300 HRO Gift Certificate grand prize was won by Steve Harrison, KO0U/1, who came down for the Conference to demonstrate HSMS (High Speed Meteor Scatter) techniques with Maarten, W1FIG. He is truly looking forward to a shopping spree sometime soon. Also, the \$100 cash vendor prize was won by Jeff Knosky, N2FFA, from Titusville, NJ. He was very grateful to win after having a successful trip selling his wares.

Below is a list of those members that helped with HAMARAMA. I apologize in advance if I forgot anyone.

AA2UK, AA3GN, K3ESJ, K3GNC, K3MFI, K3PHY, KB3IB, KU3A, KU3T, N2DEQ, N2AOG, N3DG, N3EUV, N3EXA, N3GSA, N3ITT, N3OZO, N3PLM, N3XEM, NE3I, NK8Q, W2SJ, W2SK, W3DFM, W3GAD, W3GXB, W3KM, W3OR, W3RJW, W3SY, WA2OMY, WA3DRC, WA3EHD, WA3NUF, WA3RLT, WA3YUE, WB2VLA, WU3C.

1998 Mid Atlantic States Conference Comments

The 1998 Pack Rat Conference was a great event. Thanks John, KB3XG! In addition to the list of speakers, we had 73 attendees. 29 Pack Rats showed up at the event. Good show guys! 73. Dave W3KM

Good job! To KB3XG, WB3JYO, NK8Q, N3XEM and many others. Congratulations and thanks for a great job. This years conference was the best I have attended - the talks were excellent, and it was really well organized. Putting faces on the calls was fun. The tech room was a great idea, and a lot of stuff was fixed and tweaked which will improve our stations and our showing in January. The true die hards ended the evening in the cold rain in the parking lot with KO0U and W1FIG running HSMS skeds.

The hotel staff was very helpful - despite some initial bugs, everything worked out fine.

As usual, there was a terrific turnout helping at Hamarama, in spite of the rain. What is up with the weather this year? First the June monsoon and now this. Well maybe we're due for some nice weekends now for future events, and antenna work before Jan. Let's hope so!

Now I have a few days to try to rest up for the PA QSO Party trip to Potter Co. this weekend. Yes Ron, I will try to get poked up before Thursday so I can make the BOD meeting. Hope to work some of you on 160-10M. We will try to operate as near to the frequencies published in QST as possible. 73. Joe - AA3GN

Greetings from the (somewhat) north country... Just a quick note to say well done to everyone involved in the Conference and Hamarama. Really enjoyed the Conference. Great speakers. The time flew by which is my measure of how much I was enjoying the talks. Sorry I missed the banquet. I heard my name was called early in the prize drawing. Isn't that always how it works... I will admit to playing guest this year at Hamarama. Too bad the weather didn't cooperate as it looked like the team was ready for a real onslaught of attendees. Hearty "atta boys" all around... regards, Gary WA1YHO

MIDATLANTIC STATES VHF CONFERENCE HANDOUTS/REFERENCES

Conference Reprints: For those that would like a copy of the handouts from the conference, copies of K1WHS, "An Aurora Detector", WA8WZG, "An Andrew Cable Primer", and N2CEI "New PCS Components" are available for \$5.

Web page information: WB2VVV, "patch antennas" www.wb2vvv.com
WA8WZG, "an Andrew cable primer" www.wa8wzg.com
WA1MBA, "ehf imaging" www.wa1mba.org
W1FIG/KO0U, "high speed meteor scatter" mabu@sprintmail.com or ko0u@os.com
North American HSMS Main URL: http://www.nitehawk.com/rasmit/ws1_15.html

PACKRATS HSMS DEMO/PRESENTATION SUCCESSFUL (MOSTLY)

By: Steve, KO0U/I, and Maarten, W1FIG

Maarten, W1FIG and I believe that we may have helped gain a few more "converts" to the HSMS bandwagon as a result of showing how easy HSMS can be at the annual Packrats WUHF conference this weekend. We were honored to be the after-dinner "entertainment" and attempted to live up to advance billing and rumors.

The show started off smoothly as Maarten described HSMS techniques, played tapes comparing SSB bursts with HSMS pings, and then launched into showing the ease of operation of MSDSP. Afterward, the intent was to move the "show" outside to the parking lot of the Hampton Inn where Stan, KA1ZE had very graciously set up his fantastic rover truck with its foldover, telescoping 40+ foot tower and yagi on top for our use during our skeds. Stan has constructed the truck specifically for high-powered rover use during contests, with 1500-watt amplifiers for 6 through 432 mounted within the truck's storage compartments and a pair of Kenwood TS-450 IF transceivers to drive transverters for every band from 6 meters through 10 GHz. For this occasion, we used Maarten's own TS-850S radio driving a Ten-Tec 2m transverter, a brick amplifier, and finally the "shoe", a Commander amplifier with a single 3CX800A7. This is the same equipment used at the recent NEWS conference demonstration. Because MSDSP 0.70 doesn't run properly on Maarten's 486 desktop, he uses an IBM ThinkPad running OH5Y's MSSOFT for transmitting, and does the receiving using MSDSP 0.51 on the 486 desktop computer.

Just before our after-dinner talk began, the skies opened a little and began raining; lightly, but still raining. When we finished our talk about a half hour before our first sked with W8WN at 0200Z, it was still raining. We delayed going outside with the computer for a bit, but finally decided to go ahead and set up in the hope the rain would not get worse. It neither got worse nor stopped, just kept raining lightly. And it got cool, VERY cool; I estimate the temperature was down into the low 50's by the time of our sked.

Eight or nine fellows gathered around as Maarten completed his setup, started the computer, and fired up MSDSP. PING!!! There was our first signal, what sounded like a steady carrier bang dead on frequency. A minute later, there was our first HSCW ping, pouncing up on the computer's display for all the gang to see and "WOW!" at. And the sked had not even begun yet....

Making a long story shorter, Shel apparently heard us checking the tuning of our amplifier and the setup and decided "why not...they're obviously there, let's get started!". And off to the races we went.

Around a dozen pings and a little over 20 minutes later, we finally copied Shel's 73, and another QSO was in the books. The gang watching Maarten slinging the mouse about with abandon was suitably awed. But all of us were also soaked and cold! Maarten called "QRZ" for five or ten minutes as I aimed the yagi toward the southwest, but we heard nothing further. As it turns out, however, KS4KR/EM73, had copied us working Shel and tried calling us. Sorry, Dick, we were getting cold, the rain showed no sign of letting up, all the spectators had gone inside, and I was wondering how much gas was left in the generator! So we secured the station a bit after 0230Z and retired to the warm and dry of the hotel so we could prepare for the next sked with John, WA8CLT, at 0330Z.

We actually were a few minutes late getting started on John's sked. Again, we had a small crowd of 6 or 8 guys looking on as we listened, mostly in vain, for John's pings; the meteors just weren't cooperating. The distance between John, in central Ohio/EN80, and our location near Philadelphia in FN20ke was around 650 kilometers or so, pretty short for a normal meteor scatter QSO. We needed to be using either elevation or offset aiming; but I'd not mentioned either when John and I set up the sked as John had anticipated having a brand-new four-yagi EME array up and running by the time of the sked. I had assumed that John would thus use elevation at his end and so we'd copy him through a high-elevation sidelobe of our own antenna. In retrospect, I'm not sure what actually happened. On the one hand, we noticed that the number and strength of pings from Shel had dropped considerably during the last few minutes of our earlier sked; and on the other hand, the 2m yagi we were using in FN20 was a high-gain, long-boom type (I forgot to note exactly what it was) that probably did not put much energy into the higher lobes. In any case, we only heard two fairly-short pings from John, only copying my own call and John's report to us. I understand that NJ0M/EN34 had heard a few decent pings from us until about 0345Z, so we were definitely getting out!

At 0405Z, cold and wet with the rain getting a little heavier with each passing minute, Maarten and I called it quits. But we may have quit a bit too early, as I later found out that NJ0M decided to call us since he'd heard us so well only a half hour earlier. Sorry, John...Maarten and I were really not feeling up to staying out in that stuff any longer than necessary (besides, all the spectators, except WA1MBA, had long since quit!)

I think we can count on hearing a few new folks on HSMS from the mid-Atlantic grids in the coming months. Maarten and I greatly enjoyed the other technical presentations at the Packrat's conference and the hamfest on Sunday morning (which, however, only had a fraction of the usual number of attendees due to the wet and cold weather). We were both impressed and very thankful to all the

(Continued on page 8)

(Continued from page 7)

Packrats we met for their hospitality and willingness to help us with our presentation. And personally, I thought that the attention to detail and diligence of the Hampton Inn staff toward making their inn a pleasant and comfortable conference site was far beyond the norm; my compliments and thanks to the management and staff of the Willow Grove Hampton Inn!

Steve forgot to mention that the station was located on the parking lot with a small 25 feet hill in front of it. The antennas just barely made it over a concrete building on this incline less than 100 feet away. To make matters worse just beside this concrete building were high tension cables and a railroad. The highway was not that far away either. A worse location is hard to find. Thanks to Stan KAIZE wonder rover mobile we were able to bring the antennas higher up than if we had used my 20 feet mast. We were happy we did not plan more skeds as I doubt we would have stayed out in the rain any longer.

The Packrats indeed organized a very good meeting and did everything to accommodate us. Thanks to John KB3XG and the other organizers we felt very welcome. Steve and I had a fun and enjoyable weekend. After 600 miles and more than 14 hours in the car we can look back on another successful HSMS mission.

MORE MIDATLANTIC STATES VHF CONFERENCE HANDOUTS/REFERENCES

FYI Patch Antennas References: **BROADBAND PATCH ANTENNAS** Zurcher, Jean-Francois & Gardiol, Fred E 1995, Contents: Microstrip Antennas; SSFIP Principle; Transmission Lines & Circuits; Theoretical Developments; Dual-Polarized Antennas; Patch Antenna Arrays; Fabrication Techniques; Measurement Techniques. ARTECH HOUSE ISBN:0-89006-777-5 PGS:209 \$77.00. **CAD OF MICROSTRIP ANTENNAS FOR WIRELESS APPLICATIONS** Sainati, Robert A. 1996 Contents: Microstrip Radiator Models; Single-Element Design; Advances Feeding Techniques; Circularly Polarized Element Design; Broad Bandwidth Elements; Microstrip Antenna Arrays. Includes Disk. ARTECH HOUSE ISBN:0-89006-562-4 PGS:255 \$89.00. <http://www.biggest.com/books/antennas.html>

Starter Packs on CD from W6MT George Flammer, W6MT has placed all the "Starter Pack" software up on his Web Site at: http://www.amt.org/Meteor_Scatter/HSMS-WEB/Default.htm This package of docs and software came originally from our well known HSCW Web Sites and is currently what I have been handing out (for 5 bucks) at the VHF Conferences and club meetings when I make a HSCW presentation. He is also burning CD's with the same information on them to be distributed at the upcoming WSWSS Conference. He has asked me to think about anything else which may be helpful to include on the CD. I believe we have the latest version of the pertinent docs/hints/FAQ's etc. It might be helpful to have the latest HTML or text of the HSMS Directory. George gets mail at: cto@g3m.com. Regards, Jim, KM5PO

PACK RAT VHF CONFERENCE BANQUET PRIZE LIST

<u>PRIZE</u>	<u>DONOR</u>
4CX250B's (+)	Richardson Electronics
150W LDMOS	Richardson/Ericsson
2 GHz power gain blocks	Richardson/Ericsson
Electronic hand tools	Technitool
Filter Kits	Erie/Murata
GaAs FET sampler	NEC
5' lengths UT-141	M.Lader Distributors
5' lengths UT-250	M.Lader Distributors
ATC capacitor kits	M.Lader Distributors
Mini-Circuits mixers	M.Lader Distributors
Mini-Circuits couplers	M.Lader Distributors
Mini-Circuits BNC pads	M.Lader Distributors
Mini-Circuits MMIC's	Amplitude Tech Sales
30W, 2 GHz amp	AmPLitude Tech Sales
Fujitsu power GaAs	AmPLitude Tech Sales
DownEast kits	N2CEI
VHF log program	W3KM
looper antenna	K1WHS
432 tunable filter	W3CCX
165-174 tunable filter	W3CCX
SMA microwave mixers	W3CCX
40W, 903 amp	W3CCX
60W, 903 amp	W3CCX
Cellwave 432 vertical	W3CCX

TREMENDOUS GAMMA-RAY FLARE BLASTS EARTH

From NASA Headquarters Release 98-172, 29 Sept. 1998

An intense wave of gamma rays, emanating from a catastrophic magnetic flare on a mysterious star 20,000 light years away, struck the Earth's atmosphere on August 27, 1998, providing important clues about some of the most unusual stars in the Universe. Scientists said the gamma radiation posed no health risk to humans.

The wave hit the night side of the Earth and ionized (or knocked electrons out of) the atoms in the upper atmosphere to a level usually seen only during daytime. This astonishing blast of ionization was detected by Prof. Urran Inan of Stanford University. "It is extremely rare for an event occurring outside the solar system to have any measurable effect on the Earth," Inan said. It was so powerful that it blasted sensitive detectors to maximum or off-scale on at least seven scientific spacecraft in Earth orbit and around the solar system.

The wave of radiation emanated from a newly discovered type of star called a magnetar. Magnetars are dense balls of super-heavy matter, no larger than a city but weighing more than the Sun. They have the greatest magnetic field known in the Universe, so intense that it powers a steady glow of X-rays from the star's surface, often punctuated by brief, intense gamma-ray flashes, and occasionally by cataclysmic flares like the one observed on August 27. Astronomers think that all these effects are caused by an out-of-control magnetic field -- a field capable of heating, mixing, and sometimes cracking the star's rigid surface to bits.

In June a team of scientists led by Dr. Chryssa Kouveliotou of NASA's Marshall Space Flight Center in Huntsville, AL, used NASA's Compton Gamma Ray Observatory to detect a series of about 30 flashes from the star, a type called a Soft Gamma Repeater (SGR), known as "SGR1900+14" in the constellation Aquila. During the flashing episode, Kouveliotou's team, in collaboration with Dr. Tod Strohmayer and his colleagues at NASA's Goddard Space Flight Center, Greenbelt, MD, pointed sensitive X-ray detectors aboard NASA's Rossi X-ray Timing Explorer satellite toward the star. They found faint X-rays coming from the star, which pulsed regularly in intensity every 5.16 seconds.

These 5.16-second pulses already had been detected in April, when Dr. Kevin Hurley, University of California, Berkeley, aimed the Japanese/NASA Advanced Satellite for Cosmology and Astrophysics (ASCA) at the star. Comparisons of the ASCA and RXTE data showed that the X-ray pulses were gradually slowing down.

The finding implies that the Soft Gamma Repeater has a magnetic field about 800 trillion times stronger than Earth's magnetic field, and about 100 times stronger than any found anywhere in the Universe. Kouveliotou and her team had earlier found that another SGR was also a magnetar. This was exactly what Dr. Robert Duncan, University of Texas, Austin, and Dr. Christopher Thompson, University of North Carolina, Chapel Hill, predicted in 1992 when they originated the "magnetar" theory.

Before the NASA team could announce these conclusions, SGR1900+14 emitted the tremendous flare of August 27, which was observed by almost every spacecraft with a high-energy radiation detector in space.

"Magnetars seem to answer several mysteries about the structure and evolution of stars," said Kouveliotou. "We think magnetars spend their first 10,000 years as Soft Gamma Repeaters. As they weaken with age and slow their rotation, they become Anomalous X-ray Pulsars -- stars that do not have enough 'juice' to flash anymore, but which emit a steady flow of X-rays for perhaps another 30,000 years. After that, they fade to black and drift for eternity through the heavens. The absence of observable pulsars in some supernova remnants just means that the pulsar's lights have gone out sooner than we expected."

A magnetar forms from the explosion, or supernova, of a very large, ordinary star. The star's heavy center collapses under its own gravity into a dense ball of super-compressed matter 12 miles across. This "neutron star" consists mostly of neutrons in a dense fluid, but the outer layers solidify into a rigid crust of atoms about 1 mile deep, with a surface of iron.

Even with this solid crust, a magnetar is incredibly unstable. Almost unimaginable magnetic fields, about 800 trillion times that of Earth's, cause the crust to crack and ripple in powerful starquakes. The energy released in these explosive starquakes streams out into space as intense flashes of gamma-rays. In the August 27 flare, pure magnetic energy was also released, as the star's entire crust was broken to bits.

"A magnet this strong could erase the magnetic strip on the credit cards in your wallet or pull the keys out of your pocket from a distance halfway to the Moon," said Duncan.

Additional references can be found at : <http://www1.msfc.nasa.gov/NEWSROOM> and <http://www.magnetars.com/>

ULYSSES CAPTURES GAMMA-RAY FLARE FROM SHATTERED STAR

JET PROPULSION LABORATORY <http://www.jpl.nasa.gov>

The signal of a cataclysmic magnetic flare emanating from a star that cracked apart halfway across the galaxy has been captured by NASA's Ulysses spacecraft and is providing important clues about some of the most unusual stars in the universe.

The magnetic burst from the star SGR1900+14, located in the constellation Aquila 20,000 light-years away, was observed by Ulysses and other spacecraft with high-energy radiation detectors in space on August 27, 1998, as its heavy metal crust fractured and released the most powerful wave of gamma radiation yet observed from this type of star.

"Soft gamma repeaters (SGRs) emit magnetic radiation sporadically, every few years, unlike gamma ray bursts, which explode and disappear," said Dr. Edward J. Smith, Ulysses project scientist at NASA's Jet Propulsion Laboratory, Pasadena, CA. "This was the fourth soft gamma repeater to be observed, but unlike the others we have studied, this one emitted an exceedingly intense burst of radiation. We estimate that it released as much energy in a few seconds as the Sun emits in 300 years." Ulysses is a joint mission of NASA and the European Space Agency.

SGR1900+14 is a newly discovered type of star called a "magnetar" - a dense ball of super-heavy matter about the size of a city, but weighing more than the Sun. Objects in this class have the greatest magnetic fields known in the universe. A magnetar is so intense that it powers a steady glow of X-rays from the star's surface, often punctuated by brief, intense gamma-ray flashes and, occasionally, by catastrophic flares like the one observed on August 27. Astronomers think that all these effects are caused by an out-of-control magnetic field - one capable of heating, mixing and sometimes cracking the star's rigid surface. Using several spacecraft detectors, including the Ulysses gamma ray burst instrument, scientists were able to measure this extremely rare event and pinpoint the precise source of the explosion with unprecedented clarity.

"The star, which has an extremely strong magnetic field, appears to have experienced a 'star quake' so powerful that it created a temporary ionosphere on the night side of Earth and sent two spacecraft into protective safe modes," Smith said.

Data from the Ulysses experiment, showed radiation counts that rocketed from background (near zero) levels to several thousand electrons per second. Dr. Kevin Hurley of the University of California, Berkeley, who is principal investigator of the gamma ray burst experiment on Ulysses, reported that energy measurements were two times greater than any other recorded burst.

"The radiation, as seen by the gamma ray burst detector, spiked quickly and soon settled into a series of ever-smaller spikes that clearly revealed the neutron star's rotational period," Hurley reported at a NASA science press briefing on September 29. "The star reminded us of a dying lighthouse. It kept rotating, but the lamp steadily faded away."

Hurley, who had been part of a team observing the star, recorded pulses or flashes of magnetic radiation emanating from the star every 5.36 seconds using another satellite, known as the Japanese/NASA Advanced Satellite for Cosmology and Astrophysics (ASCA). Comparisons of the ASCA data and measurements from other satellites showed that the X-ray pulses were gradually slowing down after the radiation burst subsided.

From its intensity and rotational slowing, scientists calculated that SGR1900+14 has a magnetic field about a thousand trillion times stronger than Earth's magnetic field and about one thousand times stronger than any found elsewhere in the universe, Smith said. During the flashing episode, Dr. Chryssa Kouveliotou of NASA's Marshall Space Flight Center in Huntsville, AL, who led another team observing the star with sensitive X-ray detectors aboard NASA's Rossi X-ray Timing Explorer satellite, found faint X-rays coming from the star, similar to what they had observed in another soft gamma repeater which turned out to be a magnetar.

Three of the four confirmed soft gamma repeaters - designated 1900+14, 1806-20 and 0526-66 -- have localized X-ray emissions: 1806-20 and 1900+14 have regular pulsations and 0526-66 had an eight-second period during its magnetic explosion observed in 1979. It is by comparing the change in the rotational period of these stars across several observations that scientists can measure their magnetic fields.

"Magnetars seem to answer several mysteries about the structure and evolution of stars," said Kouveliotou. "We think magnetars spend their first 10,000 years as soft gamma repeaters. As they weaken with age and slow their rotation, they become anomalous X-ray pulsars -- stars that do not have enough 'juice' to flash anymore, but which emit a steady flow of X-rays for perhaps another 30,000 years. After that, they fade to black and drift for eternity through the heavens. The absence of observable pulsars in some supernova remnants just means that the pulsar's lights have gone out sooner than we expected."

The Ulysses mission to study the poles of the Sun is managed jointly by NASA and the European Space Agency. The Jet Propulsion Laboratory manages the U.S. portion of the mission for NASA's Office of Space Science, Washington, DC. JPL is a division of the California Institute of Technology, Pasadena, CA.

(302) 478-2757

Since 1977

AMATEUR & ADVANCED COMMUNICATIONS

Amateur and Shortwave
Closed Sunday & Monday

GISELE
K3WAJ

3208 Concord Pike Rte. 202
Wilmington, Delaware 19803

609-541-0120
FAX 609-541-2546

Bob Fischer Company, Inc.

AIRIAL LADDERS - CRANES - MANLIFT EQUIPMENT

BOB FISCHER
PRESIDENT

2785 LINCOLN AVE.
CAMDEN, N. J. 08105



HARRIET SOLTOFF
TRAVEL CONSULTANT

616 SOUTH THIRD STREET
PHILADELPHIA, PA 19147

(215)
RES. 947-4483

THE R. F. CONNECTION

*"Specialist in
RF Connectors and Coax"*

Joel Knoblock
301/840-5477
Fax 301/869-3680

Order Line 800-783-2888
Suite 11, 213 N. Frederick Ave.
Gaithersburg, MD 20877

Graphic Design Illustration Production



Lynne D. Whitsel

209 Frog Hollow Road
Churchville, PA 18966
215 355-5730

RICHARD E. COMLY



TOOL, DIE & MACHINE CO., INC.
2058 BENNETT RD. PHILA., PA 19118



(215) 878-1300
FAX 934-8237

(215) 745-6173
(609) 266-3568
(800) 5-EASY-DO



COMPU-SIMPLE, INC.
COMPUTER APPLICATIONS FOR SMALL BUSINESS

ELLIOTT T. WEISMAN
Consultant

P.O. BOX 7161
WILMINGTON, DELAWARE 19803

AUTHORIZED DEALER
ROHN TOWERS

TEL 908-776-2522
FAX 908-776-3835

TELEX-HY-GAIN
ANTENNA SYSTEMS
ROTATORS
TOWERS

PILOT ELECTRIC CO., INC.
1300 HWY. #35
NEPTUNE, N.J. 07753

GENE PILOT



(215) 288-0325

W3HK

GEORGE S. VanDYKE, JR. P.E.

1737 Scattergood Street
Philadelphia, PA 19124



(609) 268-0738

RICHARD CONNOR

RECON
Communications

- COMMUNICATIONS TOWER MAINTENANCE
- ANTENNAS, FEEDLINES, TOWERS INSTALLED
- TOWER PAINTING, RE-LAMPING, RE-BUYING
- RF SYSTEM TROUBLESHOOTING
- LIGHTNING PROTECTION, GROUND SYSTEMS

Emergency Service

412 Carranza Road
Tabernacle, NJ 08088

MT. AIRY V.H.F. RADIO CLUB INC.

FIRST CLASS

DICK HUNTZINGER
W3FD
130 FAIRHILL RD.
CHURCHVILLE, PA 18966

12/97

MEETING
NOTICE

Cheese Bits
3012 Potshop Rd.
Norristown, PA 19403

DOWN EAST MICROWAVE

Manufacturers and Distributors
of VHF/UHF/SHF Equipment and Parts
50 to 10,368 MHz

- Microwave Loop Yagis
- VHF/UHF Yagis
- No-Tune Linear Transverters
- Linear Power Amplifiers
- Low Noise Preamps
- Coax Relays, Coax Cable, Connectors
- Crystals, Chip Components, MMICs, Transistors, RF Modules

For All Equipment & Antennas:

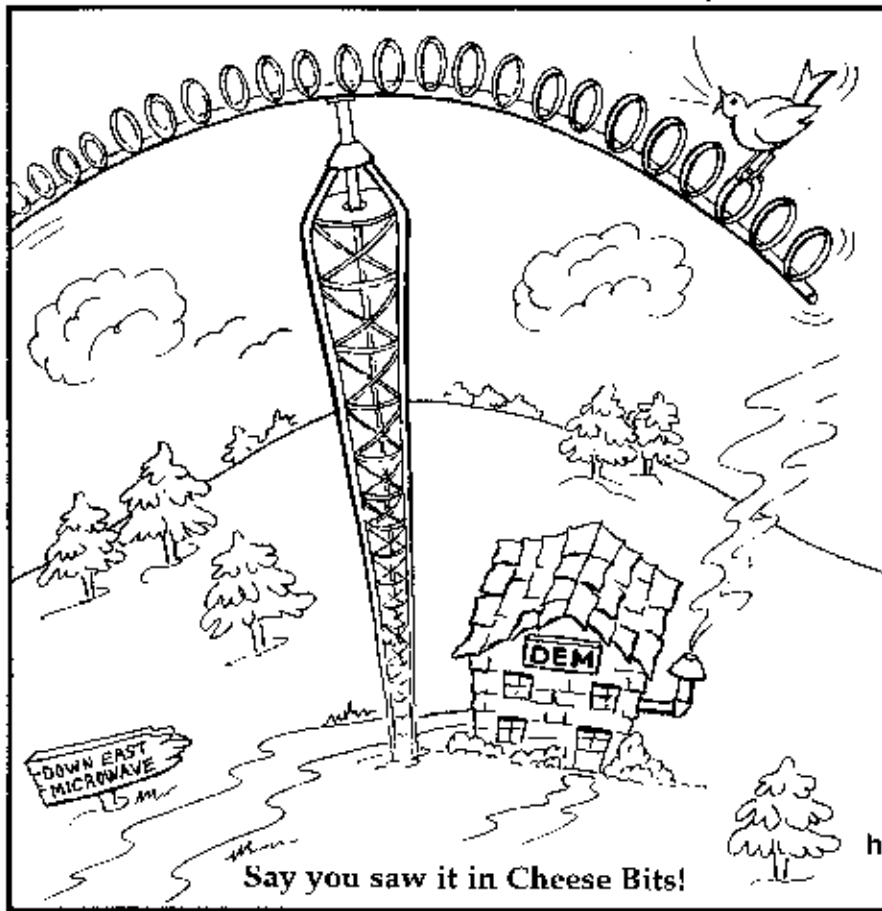
Steve Kostro, N2CEI
954 Rt. 519

Frenchtown, NJ 08825

Tel. 908-996-3584

Fax. 908-996-3702

<http://www.downeastmicrowave.com/index.html>



Say you saw it in Cheese Bits!