

# 432 AND ABOVE EME NEWS

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THE NL WEB VERSION IS PRODUCED BY W6/PA0ZAND AVAILABLE AT <http://www.nitehawk.com/rasmit/em70cm.html>.

**CONDITIONS:** April was quite a month! On 10 April the first 47 GHz EME accomplished. Congratulations to RW3BP, AD6FP, W5LUA, and VE4M. During the activity weekend (AW), 16/17 May, the first leg of the European World Wide EME Contest (EWW), formally the REF/DUBUS EME Contest, on 1296 and 10368 GHz also took place. 1296 activity was good, but there are fewer 10 GHz reports this year, but OK1KIR reported the 1<sup>st</sup> OK-VK 3 cm QSO during the contest. May activity will be focused on 13 and 6 cm EME with the 2<sup>nd</sup> part of the EWW Contest on 16/17 May – also on 2 m.

**FIRST 47 GHz EME COMPLETED:** The team of RW3BP, AD6FP, W5LUA, and VE4MA has announced that the first 47 GHz EME QSOs have been made. RW3BP heard the first lunar echoes on 47 GHz back in Aug. At that time he was copied by AD6FP, W5LUA, VE4MA and VE7CLD. Since the receipt of the first 47 GHz echoes via the moon, numerous tests between RW3BP and AD6FP led to improvements by RW3BP allowing him to copy calls from the lower power signal of AD6FP in Jan. On 16 April AD6FP, W5LUA and VE4MA have each completed CW QSOs via the moon with RW3BP. Although the signals were copied on CW, digital signal averaging was used to enhance copy because of the spectral spreading. The station at RW3BP consists of a 2.4 m offset fed dish and 100+ W, while the station at AD6FP consists of a 1.8 m offset fed dish and 30 W. At W5LUA and VE4MA 2.4 m offset fed dishes and 30 W TWTs were used. Noise figures of all stations are in the 3.5 to 4.7 dB range. Since the Doppler shift can be > 100 kHz at 47 GHz, one must continuously adjust the receive frequency to keep a moon station in the passband. Precision frequency control was obtained by using GPS controlled, Rubidium locked, or TV sync controlled phase locked local oscillators. Various techniques were in use to keep the Doppler shifted frequency in the passband of the receivers.



RW3BP's 2.4 m offset dish and 47 GHz system

**HIGH CONTEST SCORES:** Not many high scores have been received for the 1<sup>st</sup> leg of the EWW EME Contest. It appears that OZ4MM is the leader with a total of 55x33. HB9BBD reported 49 contacts and in NA K5JL only about 30 QSOs. In Japan JH1KRC reports 25 contacts. The results for 10 GHz are even more scant. OK1KIR is the definitive leader with 10 QSOs.

**AD6FP:** Gary [ad6fp@lbachs.com](mailto:ad6fp@lbachs.com) sends some details on his end of the first 40 GHz EME -- The station is a 1.8 m Prodelin offset dish, W2IMU feed, 0.05 deg tracking accuracy, FIEHN tracking software, KK6MK interface to US Digital A2 encoders, 4.2 dB NF RX with triple conversion down converter to 28 MHz, Rubidium locked, giving 0.7 dB moon noise and 9 dB sun noise, 30 W Hughes 8901H TWTA TX, x3 multiplier after single up conversion to 15 GHz from 1296 MHz, Rubidium locked TS-2000x IF, computer controlled RX tuning for Doppler correction. The RW3BP/AD6FP QSO was on 23 Jan with about a 40 minute moon window. We used 10 minute sequences with 12 wpm synchronized CW and custom decoding software designed by RW3BP. The QSO was after 3 months of testing with AD6FP transmitting to RW3BP during the 5 day, 40 minute per day moon window between us each month. The testing allowed Sergei to optimize the synchronized CW decoding software that was key to making the QSO. I had good copy of VE4MA during his QSO with RW3BP so it's likely Barry and I will complete a QSO during the next moon window in May. Due to the high atmospheric attenuation at 47 GHz QSOs must be made when there is a common moon window with at least 20 degs elevation at each end.



AD6FP's 1.8 m offset dish, 30 W TWTA & xvtr move with dish

**C31TLT:** Josep (EA3DXU) [ea3dxu@urcat.org](mailto:ea3dxu@urcat.org) reports on his group's plans for a 1296 EME Dxpediton to Andorra this summer. They have received the

license and plan to operate from 24 Aug at 0000 to moonset on 27 Aug. They will be equipped for CW and JT65C and plan both random and scheduled operation. [K1RQG will probably coordinate skeds - I suggest you e-mail Joe with your skeds requests.] They are particularly interested in QSOing some VK and JA stations. The group tested their portable station (8 x 35 el linear polarized and 250 W) from JN01vq on 16 April during the EWW Contest weekend EA3BB. They easily QSO'd OZ4MM - for #1, HB9Q - not very strong but easy QSO, OE9ERC - good signal but big drift, HB9BBD - the strongest signal, F6KHM - also very strong and HB9SV - very strong and easy QSO. They shut down at 2000 and did not hear any NA stations. All contacts were on random CW. They feel with skeds that they will be able to work both big and medium sized stations from C31. Team members were EA3AYX, EA3AEN, EA3BB and EA3DXU.



**EA3BB Portable 23 cm EME during EWW 1296 EME Contest**

**DL3YEE:** Klaus [dl3yee@gmx.de](mailto:dl3yee@gmx.de) is considering giving EME another try, this time on 1296. He was active on 432 back in the early 90's. Right now he is running on the horizon EME tests on JT65 with 2 x 48 el yagis and 100 W at the feed.

**DL9KR:** Jan [bruinier@t-online.de](mailto:bruinier@t-online.de) was active during the April AW on 432. He heard VK3UM, VK4AFL, DL7UDA and SM2CEW. Jan worked Doug for real FB CW QSO. He needs more participation in the fund for the dxpedition station. DL7APV now has 2 solid state PAs, but needs more interest and money.

**F5JWF:** Philippe [f5jwf@wanadoo.fr](mailto:f5jwf@wanadoo.fr) was active on during the EME contest on 10 GHz - A few stations were heard on Saturday, 16 April, with very bad snowing conditions! I work only IQ4DF (O/O). OK1UWA, OK1CA and DL0EF were heard with really good (O) signals. I have tried to call them without any success. VK3XPD was also heard, but at a more marginal level. On Sunday the snow was even worse and my 230 VAC public power failure for 12 hours! It returned at about 1830 and was able to QRV again. I worked OK1KIR, WA7CJO and HB9BHU. My station consists of a 3.7 m dish and 20 W TWT. This was my first EME Contest on 3 cm and despite the bad WX, it was still a good experience.

**F5HRY:** Herve [F5HRY@wanadoo.fr](mailto:F5HRY@wanadoo.fr) is QRV on 23 cm again and was active in the contest - My rig is a 2.6 m dish with 0.35 dB NF LNA and 400 W at feed. I had a RX problem, but everything is back to normal. I worked during the pre-AW G4CCH, W2UHI and G3LTF. Heard were HB9BBD, K9SLQ and KA0Y. My initial count is #48.

**G3LTF:** Peter's [g3lft@btinternet.com](mailto:g3lft@btinternet.com) EME report for April -- I got on for the weekend before the AW and worked on 10 April on 23 cm, RW1AW for initial #213 - Alex replied to my first CQ and had an excellent signal, VE6TA, K2UYH, OZ6OL and F5HRY. Due to several conflicting commitments, I was only able to be active for a short time over the AW, but did manage to work 42 stations, all on 1296. I QSO'd on 16 April, FIANH, ZS6AXT, JH1KRC, ON7UN, JA6AHB, F6KHM, JR4AEP, IK3COJ, F6CGJ, OM6AA, IK2MMB, JA8IAD, LA8LF, SM3AKW, DL1YMK, HB9BBD, OZ4MM, OH2AXH, OZ6OL, RW1AW, K5JL, N2UO, W2UHI, NA4N, SM2CEW, DK0ZAB,

K0YW, VA7MM, WA6PY and HB9JAW, and on 17 April UR5LX, UT3LL #214, OE9ERC, LA9NEA, IW2FZR, G3LQR, W7BBM, PY5ZBU, K9SLQ, WB5AFY, OH6NVQ and VE6TA. I heard K2UYH, DF3RU and KA0Y. On 20 April I ran a test on 432 with SM3JQU and we worked without difficulty (439/559) for initial #387.

**GW4DGU:** Chris [gw4dgu@blaenffos.org](mailto:gw4dgu@blaenffos.org) was forced to SWL status during the EWW Contest on 10 GHz -- I managed to smoke the collector/helix transformer in the Siemens/SES power supply I am using for my TWT. I've now decided to design a decent PSU from first principles (I haven't designed HV switching PSUs for longer than I care to remember!). Providing work doesn't get in the way, I might be back on 3 cm with 40+ W in May. In March I ran with G4NNS, and we, at least, heard each other! At my end there were sparks and the power supply died! Fortunately, before putting the power supply out on the dish, it lasted long enough for me to check both my own tube and GW3XYW TWT - it worked! I spent longer than I'd intended trying to resuscitate the PSU before eliminating everything, but the transformer. I listened for a few hours on 16 April and heard DL0EF (525) on CW and just readable on SSB, F5JWF (O) on CW, IQ4DF a very conservative (53) on SSB, OK1KIR (415/515) and at the end of my window WA7CJO with a very loud signal - I'm thinking of putting in a claim to Jim for a new first stage preamp, hi! I currently see about 12.5 dB of sun noise and 1.2 dB of moon noise with a total receiver noise temperature of ~145 K.

**HB9BBD:** Dominique [dominique.faessler@vontobel.ch](mailto:dominique.faessler@vontobel.ch) has greatly improved his dish's performance and although limited in operating time enjoyed the EWW EME Contest -- I could not be on for the full contest, but got an hour in on Saturday and several hours on Sunday. I ended with 49 QSOs and 4 initials with JR4AEP (579/579) for #217, RW1AW (559/579) #218, EA3BB (539/579) #219 and ES6RQ (569/569) #220. I also copied K7XD and sent (539) but heard no reply. The same goes for JA4LJB (539), who I never heard before. I believe the ES6 is the first ES-HB9 123 cm QSO. W9IIX was in the noise, but worked. The dish, now mechanically tweaked into shape, has improved a lot RX wise. UT3LL was quite easy copy, IW2FZR was a good (549), and UR5LX was loud. Happily I worked PY5ZBU again after a long break. K5JL sounded low on goo with untypical (579).

**HB9JAW:** Michel [hb9jaw@bluewin.ch](mailto:hb9jaw@bluewin.ch) was QRV on 1296 for the contest -- On Friday 15 April I made a quick 23cm horn installation in order to make a few EME QSOs after a year of absence. On Saturday at 2000 I left my job to see if I could hear anything. Signals were there and strong! This helped my limited CW experience. I worked on 16 April starting at 2113 W2UHI (589/589), LA8LF partial (559/-) not complete, K0YW (579/599), K5JL (569/569), SM3AKW (559/569), ON7UN (579/559) for an initial (#), F6KHM (579/589) and (57/57) on SSB, OZ4MM (589/579), OZ6OL (559/569), OE9ERC (579/589), G3LTF (579/579), IK2MMB (559/579), RW1AW (539/569) (#), WA6PY (539/569) and DL1YMK (559/559), and on 17 April OH2AXH (569/579) (#), HB9SV (579/589), ZS6AXT (559/579) and ES6RQ (529/559) (#). Heard were SM2CEW, VE6TA and possibly OE5JFL. I plan to be on 13 cm in May for the 2<sup>nd</sup> leg of the contest. The station will be my 11 m dish, DB6NT transverter with 3 X MRF21120 PA at Septum feed and DB6NT preamp.

**JH1KRC:** Mike [jh1krc@syd.odn.ne.jp](mailto:jh1krc@syd.odn.ne.jp) writes - European EME Contest 2005 on 23 cm brought a lot of fun to me. This was the 1<sup>st</sup> time I took part in this contest. I made 25 valid QSOs. I only made 3 initials, but it was great. We need more small stations to participate in this contest. I worked on 16 April partial VE6TA?, K5JL (559/569), K9SLQ (579/579), JA6AHB (549/559) - back on after a big earthquake hit his QTH, JA8IAD (549/559), G3LTF (559/449), OE9ERC (569/569), F6CGJ (559/559), ON7UN (559/559), IK2MMB (549/549), SM3AKW (549/549), partial JA4AEP (559/-), OZ4MM (549/559) and F6KHM (549/339), and 17 April K0YW (559/569), N2UO (549/549), JR4ZZS (569/559), WB5AFY (549/559) for initial #43, VE6TA (449/549), KL6M (O/O) #44 - a good but tough QSO, HB9BBD (579/579), OZ6OL (449/559), HB9Q (569/549), PA3CSG (559/569), ZS6AXT (449/569) #45 and my 1<sup>st</sup> Africa and HB9SV (589/579).

**JR4ZZS:** Yoshiro (JA4BLC) [ja4blc@web-sanin.co.jp](mailto:ja4blc@web-sanin.co.jp) operated JR4ZZS with JR4AEP during the EWW EME Contest. They worked on 1296 K9SLQ, JA8IAD, VE6TA, JH1KRC, K0YW and JA6AHB. The wind was strong during the weekend and they had major troubles keeping the dish aimed at the moon. Before the contest they replaced the position encoders from 720 pulse/rev incremental to 12 bit absolute encoders. Automatic computer tracking is not yet finished. JH3ERQ has helped us greatly. We also SWL'd on 10 GHz both day. We heard DL0EF calling CQ and a few other unidentified signals in Eur window. Our equipments on 3 cm were 2.5 m solid dish, VE4MA linear pol feed (vertical) and DB6NT converter without a preamp. JR4AEP has moved his station to JR4ZZS and uses the same equipment as JR4ZZS. Ken worked OZ4MM, OZ6OL, F6KHM, OE9ERC, SM3AKW, G3LTF, ZS6AXT,

HB9BBD and OH2AXH in the contest under his own call during the contest. JR4ZZS and JA4BLC are planning to QRV on 13 cm in May for the 2<sup>nd</sup> leg of the contest.

**K0YW:** Bruce [k0yw@frontier.net](mailto:k0yw@frontier.net) was QRV on 23 cm during the contest and the pre-AW. During the pre-AW he worked HB9BBD (599!) and W2UHI. In the contest he QSO'd 37 x 27 with 10 USA, 4 JA, 2 CA, 1 AF and 20 EU. He added an initial with RW1AW who had a big signal. Bruce reminds EUR to hang around for the western US/NA stations. He also reports much libration and fading.

**K5SO:** Joe [K5SO@direcway.com](mailto:K5SO@direcway.com) is now QRV on 1296 from NM with his 28' Kennedy dish. He made his 1<sup>st</sup> QSO on 30 April using only 30 W with W2UHI. He copied at least 20 stations off the moon during the EWW contest and should be now available for skeds.

**K6JEY:** Doug [doughhelen@moonlink.net](mailto:doughhelen@moonlink.net) planned to operate the EWW Contest on 23 cm with a new GS15 amp running 300 W with same 7' dish he used for past contacts. [I don't think Doug made it on].

**KL6M:** Mike [kl6m@qsl.net](mailto:kl6m@qsl.net) was on 23 cm for the EME Contest, but reports his system is not working well – I QSO'd a total of 10 stations: K9SLQ (559/549), K5JL (559/559), JA6AHB (O/O) for initial #19, OZ4MM (559/439), F5KHM (559/449), F6CGJ (O/O) #20, K0YW (O/O) #21, JH1KRC (O/O) #22, K2UYH (549/549) and OE9ERC (549/449). Jay, Bruce and Joe have me convinced that my feed placement is way off. I have not had a chance to readjust it and won't until I get back from SVHFS. I now believe the feed placement was the same reason I failed so miserably at my first attempt on 2304. If that is true, I should be QRV 2304 for the next EWW contest weekend.

**KL7UW:** Ed (x-AL7EB) [ecole@cispri.org](mailto:ecole@cispri.org) sends some news from Alaska – I guess you note my call sign change to KL7UW. I have been working with K6JEY and the SBMS Owen's Valley RO Project by writing up a webpage analyzing some of the effects of using the large 40 m dish for EME. I have specifically addressed 10-GHz and the lunar under-illumination issues with using a large dish like this. The result is a new spreadsheet that takes in several of these issues to try better to get closer to making path-link analysis. I checked with Doug, K6JEY, and they are confident of OVRO being ready for the MW weekend of the ARRL contest. With MUD-2005 one weekend afterward, they may have some interesting stories to discuss! I plan on being at MUD. My website is <http://www.qsl.net/KL7UW.html>. I am not presently QRV on 432 up, but have accumulated most of what I need for both 1296 and 10,368 EME. I will run 250 W on 1296 and 50 W on 10,368 using a 2.4 m dish (a little small, but will make up with power, I hope). My BIG summer goal is to be QRV for the ARRL contest this fall. I also may have the makings for 3456 EME, since it is the first IF of my 24 GHz project (not EME). I have two 40 W Toshiba PA and may be looking into combining them. I would guess this is for a cold winter's day on the workbench. Spring is around the corner up here (about a month away) and I'm looking forward to working on my 2.4 m dish.

**N2UO:** Marc [lu6dw@yahoo.com](mailto:lu6dw@yahoo.com) was QRV on 1296 for the EWW EME Contest – I had a great time on 23 cm during the first leg of the European contest. I worked F6CGJ, HB9Q, ON7UN, K0YW, F6KHM, W2UHI, G3LTF, K9SLQ, K5JL, OE9ERC, OZ4MM, WA6PY, JH1KRC for initial #57, JA6AHB, HB9BBD, OH2AXH, HB9SV, IK2MMB, OZ6OL, RW1AW for initial #58, ZS6AXT, K2UYH, DJ9YW and DF3RU. It was funny at one time I called CQ and had three stations answering my call only 100 Hz from each other. I had to wait until at least one gave up to figure out the calls. I use an SSB filter on receive, but even a 400 Hz CW filter wouldn't have helped. Maybe a narrow DSP filter is a solution in these cases, but with a 3 m dish it doesn't happen too often. My azimuth control stopped operating half hour before the end of the contest, but I will have it fixed in the next few days. I plan to operate from K2UYH during the microwave section on 13 cm.

**OK1KIR:** Tonda (OK1DAI), Vlada (OK1DAK), Jiri (OK1DCI) and Jan (OK1VAO) from the OK1KIR team write – We have set up a new antenna, 4.5 m dish, f/D 0.42 with el/az mounting. After a long break caused by flood in Aug 2002, we were active in April on 10 GHz in the 1<sup>st</sup> part of EWW contest. A new transverter 10368/10450 MHz, PA TWT RW 2135 ~ 50 W output, its power supply and horn feed are mounted in the focal point. 21 years experience with old antenna give us lesson - if linear polarized then must rotate. It paid off during the DUBUS contest. VK3XPD was for Eur 90° turned and WA7CJO about 30° for max signal. His polarization changed during orbit. The very same applies for all non Eur stations. We haven't seen this problem when circular polarization was used, same as on 1296, 2300 and 5760 MHz. Own echoes are FB on both 10368 and 10450 MHz and to change bands is just one switch. In the contest (at apogee) we worked on 16 April at 2055 WA7CJO (O/O), 2103 HB9BHU (O/O), 2125 DL0EF (559/529), 2133 IQ4DF (549/529), 2253

OK1CA (O/559), and on 17 April at 1123 OK1UWA (O/519) - in rain, 13.23 VK3XPD (O/O) for #24 and the first VK-OK 3 cm QSO (it is our jubilee 100 first OK to QSO on UHF/SHF bands) and new ODX 15931 km, 1746 IQ4DF (54/539), 17.47 DL2LAC (O/O) and at 2008 F5JWF (M/O) for initial #25. We plan to be QRV on 13 cm band in the next part of contest.



**OK1KIR's new 4.5 m dish with TWTA mounted at rotatable linear feed**

**OM6AA:** Rasto [om6aa@stonline.sk](mailto:om6aa@stonline.sk) was active during EWW EME Contest on 23 cm – I was using my old set up – 3 m dish and older VE4MA feed due to lack of time. I am very busy at work right now, so I was not able to try the Septum feed described in DUBUS 4/04 magazine. I QSO'd on 16 April at 1155 OZ4MM (559/429), 12.27 OE9ERC (559/549), 1258 F6KHM (559/O), 1342 HB9Q (559/539), 1404 G3LTF (449/339), 2034 F6CGJ (559/449), 2106 K0YW (559/529) and 2135 ON7UM (559/O). I called HB9JAW for about 40 min without any reply. K9SLQ replied with a QRZ to my long calling. I also heard DF3RU, ZS6AXT, JR4ZZS, HB9SV, W2UHI, SM3AKW, IK2MMB and K5JL. The next day I added at 1251 HB9BBD (579/569), 1314 OZ6OL (439/339) and 1401 PA3CSG (449/439). I heard JA6AHB. All QSOs were on random, CW. Note I have a new e-mail address – see above. My old one was cluttered up with tons of SPAM.

**OZ4MM:** Stig's [vestergaard@os.dk](mailto:vestergaard@os.dk) contest report – I ended first weekend on 1296 with 55 contacts and 33 multipliers. I couldn't be on fulltime and thus missed many of the regular stations, but still found good activity through the weekend. The level of signals seemed down on Saturday, but was better on Sunday. Does anyone have any idea as to why? I added initials with EA3BB, RW1AW and DL4DTU. I heard and called W7UPF, but he disappeared. I also heard W7BBM. I will be on again next month in the 13 cm leg of the contest and hope to see good activity.

**RW1AW:** Alex [rw1aw@skylink.spb.ru](mailto:rw1aw@skylink.spb.ru) is now QRV on 23 cm as well as 70 cm in a big way and will add 13 and 3 cm shortly – My new QTH is KP50da, the old loc was KP50eb. On 29 March I made my first 23 cm EME QSO with DJ9YW (559/O). I used a HB 3 m dish (f/d=0.51) and 140 W into a W2IMU long feed with 0.35 dB NF LNA. On 6 April I worked DJ9YW (559/449) again after switching to a larger 3.7 m (f/d = 0.35) dish with a VE4MA long feed, new 0.27 dB NF LNA and 180 W at the feed. The PA is 8 x M57762 Mitsubishi hybrids for 260 W out to 30 m of 7/8" Heliax. During the pre AW, I QSO'd G4CCH (569/559), ON7UN (569/O), K2UYH (549/549) and HB9BBD (559/569). For the EWW Contest, I completed installation a 6 m HB dish 5 hours after start – hi! Using it, I made 38 random QSOs with 120 W to the feed. I had some very FB contest reports including KA0Y (589/569) and OE9ERC

(589/579) – 23 cm is a very nice band! I am also nearing completion of a 2 x GS15 PA, which should give 700 W on 1296. In May I should be on 13 cm EME for the 2<sup>nd</sup> leg of the EWW Contest.



**RW1AW's new 6m dish for 23 cm in the foreground with smaller dishes for 13 and 3 cm in the background**

**SM2CEW:** Peter [sm2cew@telia.com](mailto:sm2cew@telia.com) was active on 23 cm during the pre-AW and worked on Saturday RW1AW on random for a new one and heard IW2FZR and F2TU. He was also on 432 for a while listening to DL9KR running with SV1AWE, but copied nil. Later DK3WG and SV1BRT were heard with good signals. Peter reports a good time on 1296 during the 1<sup>st</sup> part of the contest, but includes not information on his score or stations worked.

**SM5LE:** Ben (SM6CKU) [ben@parabolic.se](mailto:ben@parabolic.se) reports that during the EWW Contest SM5LE and SM0FOB copied 12 stations off the moon on 1296 MHz using only a 1.8 m Parabolic dish kit and a helix feed. Ben says if you can hear them, you can work them.

**SP7JSG:** Chris (SP7DCS) [sp7dcs@smrw.lodz.pl](mailto:sp7dcs@smrw.lodz.pl) reports the first 3 cm EME QSO from Poland – I write of behalf of my friend Czeslaw, SP7JSG and very happy to report that on 5 April SP7JSG made his first 3 cm EME QSO with IQ4DF. This was first ever 3 cm EME QSO from SP. [Many congratulations for Czeslaw]. He was also QRV in the EWW EME contest and worked on random CW DL0EF for initial #2 and the first SP-DL QSO via 3 cm EME. He heard other stations but made no other QSOs due to lack of experience. He is also working to improve his feed system will be QRV in the future. More information can be found at <http://kolos.math.uni.lodz.pl/~maciekm/sp7jsg/>.

**SV1AWE:** Bob [sv1tg@eexi.gr](mailto:sv1tg@eexi.gr) KM17vu is now QRV on 432 with 4 x FT yagis and 50 W – see last month's NL. He ran tests on JT65B with K2UYH and copied him consistently (-19 dB) with audible tones. Bob also ran skeds with DL9KR and DK3WG, but copied nil due to a 10 deg pointing error. Bob will be trying CW tests with some of the bigger stations and is working to increase his power to 1 kW. He prefers to be QRV at elevation >20 degs due to QRM from the city of Athens.

**UR5LX:** Sergey [ur5lx@vhf-dx.net](mailto:ur5lx@vhf-dx.net) was active in the EWW 1296 EME Contest on 17 April from 1400 to 2100. He QSO'd F6KHX, F6CGJ for initial #30, HB9BBD, G3LTF, OH2AXH and OZ4MM. Sergey heard and many times called ON7UN with good copy, but no answer. He is open for skeds on CW or JT65B on 1296 with his 3.2 m dish. 250 W PA and FHX35LG LNA.

**VA7MM:** Mark (VE7CMK) [va7mm@rac.ca](mailto:va7mm@rac.ca) writes on his group's European EME Contest Activity -- The chain saws have been fired up at VA7MM. In the past month three massive, moisy, cedar trees over 80' tall blocking the eastern horizon have been razed to the ground. The resulting lower noise level enables VA7MM to now work Eur stations about 2 hours earlier than previous. In addition to the cavity amplifier, we now have a crackling cedar log fire warming the station. In the contest VA7MM contacted on CW F6KHM, F6CGJ, K9SLQ, ON7UN, OE9ERC, G3LTF, OZ4MM, W2UHI, K0YW, WA6PY and K2UYH. VE7BBG was contacted on JT65B. Initials include ON7UN and W2UHI to bring us to #41 since the station became active on 23 cm EME in Nov 2003. Operators were Mark, VE7CMK and Toby, VE7CNF.

**VE6TA:** Grant [ve6ta@telusplanet.net](mailto:ve6ta@telusplanet.net) sends his results for the 23 cm leg of the DUBUS event – I had some time constraints trying to keep the boss happy and struggled at times with the libration fading on a few stations. I worked the following: K9SLQ, K5JL, JH1KRC, IK2MMB, W2UHI, K0YW, F1ANH, LA8LF, ZS6AXT, OZ6OL, SM2CEW, F6CGJ, F6KHM, OZ4MM, OE9ERC, ON7UN, RW1AW for initial #99, N2IQ, WB5AFY, JR4ZZS, JA8IAD #100 (#400 on all EME bands), JA6AHB, HB9BBD, OH2AXH, K2UYH, G3LTF, DF3RU and SM3AKW. I heard but did not QSO the following stations: WA6PY, N2UO, PY5ZBU, VA7MM, HB9SV, KA0Y, W7BBM, KL6M, DJ9YW and HB9JAW. My total score was 28 x 20. Signals as a group were probably the strongest I have heard on EME. Everyone must really have their big amps working well these days. I will be changing the feed to 13 cm when time permits and hope to be QRV there for the next leg.

**VK3UM:** Doug [tikaluna@ycs.com.au](mailto:tikaluna@ycs.com.au) reports on 70 cm during April AW -- Activity is at a low ebb on 70 cm at present due of course the 23 cm DUBUS contest this weekend. Sun noise measured at 0130 on 16 April was 20.0 dB - equivalent to a SFU of 175, and at 0045 on 17 April 17.5 dB - equivalent to a SFU of 95. I was QRV on 16 April from 0400 to 0530 and connected only with VK4AFL (559/559) V/h-v and N9AB (559/559) V/V. Faraday was ~90° up to 6.5° el and then about 75° up to 10° el. There was very little libration fading. The next day I was active from 0930 to 1244 and QSO'd DL9KR (449/579) V/H and (579/579) H/H, SM2CEW (559/569) H/H (me at Peter V), I5CTE (449/449) H/H and DL7UDA (539/O) H/H. A couple of others called right on my moon set one of whom I think was J1NNJ. A JT65 signal was heard on 030 (±10 kHz wide!) and later on 034. How about getting above 100 for F1D emissions or run your amp in other than class C? Faraday was reversed to what I normally receive from Eur and seemed about 45° most of the time. Fading was deep at times over a ~30 sec period and libration obvious on weak signals. I was QRV again from 0450 to 0650 calling CQ, but nil heard. Faraday was ~90° and seemingly sharp. Fading was minimal and libration nil. I got very tired of listening to my echoes! I was on again from 1000 to 1245 and worked DL9KR (579/579) H/H, and heard VK4AFL (559). Faraday was ~45°, and libration and fading minimal. If nothing else it was very nice and quite satisfying to be able to rag chew and swap notes with Jan and Peter. Regarding my V/H reporting system: The first letter is my TX polarity and the second my RX polarity for best signal. When my received polarity is about equal, I designate it in lower case as h-v. Maybe we can encourage this form of reporting? I also like to do Sun measurements and I enjoy trying to relate my figures (and software derivatives) to so called published 10.7 cm values. You can go to many sites and get differing values for "mean", "averaged", "peak", "taken over x time" etc... It is a bit confusing, but I get within 10 SFU normally.

**W2UHI:** Frank [fblumn@pathwaynet.com](mailto:fblumn@pathwaynet.com) was active on 1296 during the pre-AW and found quite a bit of activity. He QSO'd HB9BBD, K9SLQ, K0YW and F5HRY. Heard were IK2FZR (?), OZ6OL, ON7UN, VE6TA and others. During the EWW Contest he worked 25 station including ES6RQ, VA7MM, RW1AW and WB5AFY. He did not hear JH1KRC or any other JAs in his short window.

**WA6PY:** Paul [pchominski@Jaalaa.com](mailto:pchominski@Jaalaa.com) reports on his recent activity – In March I QSO'd OZ4MM and G4ERG on 432 using my dual dipole feed extended to be a kind of yagi antenna with a 4.2 m boom. G4ERG is the smallest station I worked on 432 with my simple antenna. During EWW EME Contest, I started on Saturday 16 April on 10 GHz. I was quite late on the band. I heard IQ4DF and WA7CJO calling CQ. I QSO'd WA7CJO, but IQ4DF vanished. Then I switched to 1296 and QSO'd RW1AW, F6KHM, SM3AKW, G3LTF, F6CCI, HB9JAW, K0YW, W2UHI, ON7UN, OZ6OL, IK1MMB, VA7MM and N2UO, and on 17 April on 1296 DF3RU and K2UYH. I heard DJ9YW, IK2FZR and KA0Y, but I could not continue due to the work commitments. I plan to be QRV during next part of the contest on 144 and 13 cm.

**ZS6AXT:** Ivo [zs6axt@telkomsa.net](mailto:zs6axt@telkomsa.net) writes – After exactly one year of absence on EME I managed to get back on with great help from ZS6JON. The removal of my old EL drive was real nightmare, but we managed. The fitting of a new linear actuator was quite easy. The antenna relay and preamp were replaced and the wiring modified. The resulting Sun noise was a bit over 15 dB. I then tried echoes and these were OK. On Saturday we had rather lousy weather with rain that cleared up later in the evening. I worked on 23 cm: F6KHM, G3LTF, OZ4MM, F6CGJ, OZ6OL, JA6AHB, ON7UN for initial #194, SM3AKW, F1ANH, IW2FZR partial, OE9ERC, JR4AEP, LA8LF, IK2MMB, DL1YMK, HB9SV, OH2AXH, GW3XYW, RW1AW #195, HB9Q, N2IQ, K9SLQ #196, OH2DG, K5JL, W2UHI, K0YW, WB5AFY #197 and VE6TA. During the second half of the pass my HV PSU dropped in voltage, one half of the rectifier did not work, thus I had only about 120 W! Still I was getting good reports. On Sunday I repaired the HV PSU. We had heavy thunderstorm before the moonrise, but fortunately it cleared and weather was OK. I worked HB9BBD, PA3CSG, OE5JFL, JH1KRC #198, HB9JAW, RW1AW (dup), SM2CEW, DF3RU, N2UO, G3LQR, KA0Y and K2UYH. The total was 39 stations with 6

initials. CWNR were ES6RQ (many times), LA9NEA, IK2COJ, NA4N, JA8IAD and DK0ZAB. Pitty, I was hoping to get my # count to 200! But my result of 38 x 23 was an all time best on 23 cm. Conditions were a bit crazy on Saturday. I believe due to aurora. And of course, QRM here and there was bad. I know, it is contest, but the big guns should be bit more careful, when they change their frequency. The only "QRL?" I heard was from F1ANH. I now have to replace the 13 cm preamp, and hope to get a new more accurate EL sensor to be ready for the 13 cm operation next month. I hope to improve my initials there too, if our weather cooperates! So far we had probably the worst season with heavy thunderstorms, and the preamps damaged twice - the first time after 15 years of operation! I am now looking for a good design of 10 GHz horn for my dish f/D 0.375. I hope to have it erected this year. All the other equipment is ready.

**K2UYH:** I did not expect to be able to operate the 1296 leg of the EWW EME Contest because of a conflict with the Trenton Computer Festival. I have been chairing this event for 30 years and the moon and TCF2005 times appeared to coincide. As things turned out I was able to leave a little early and put a few hours in at the very end of the contest. Conditions and activity seemed good. I QSO'd on 17 April 2049 OE9ERC (579/569), 2053 OZ4MM (579/559), 2056 K5JL (569/559), 2100 VE6TA (569/569), 2105 F1ANH (559/559), 2109 N2UO (559/559), 2118 SM3AKW (559/559), 2122 K9SLQ (569/569), 2126 F6CGJ (579/579), 2140 partial IW2FZR?, 2145 F6KHM (579/559), 2148 NA4N (559/559), 2156 DF3RU (559/559), 2203 OZ6OL (559/559), 2207 ZS6AXT (559/579), 2211 IW2FZR (549/559), 2220 DJ9YW (559/559), 2228 WA6PY (559/559), 2233 W7BBM (569/579), 2242 KA0Y (569/579), 2250 VA7MM (549/449), 2321 N2IQ (569/569) and 2342 KL6M (549/549). I was also active during the pre-AW and QSO on 10 April on 1296 at 1445 HB9BBD (58/57) on SSB, 1509 RW1AW (549/549) for initial #235\* and 1525 G3LTF (56/569), and on 432 at 2130 K3MF (O/O) on JT65B for initial #691\*. Wade and I also tried at 2200 on CW and exchanged (M/O) but I never received final Rs. On 23 April at 0100 I had a partial SV1AWE on JT65B. Bob easily copied my signal, but I was unable to decode his signals due to my high noise level on 70 cm. I plan to be on 13 cm for the 2<sup>nd</sup> leg of the EWW contest with the assistance of N2UO, K2TXB and N4HY.

**TECHNICAL:** IK2MMB writes - At 10 GHz I have had bad experience with coaxial relays above the level of 10 W or +40 dBm if you prefer. At exactly 10 W, one SMA relay from RFT (similar to a Transco) lasted for years, but at the end it showed progressive loss of its initial good properties. I then switched to a 25 W TWTA, or +44 dBm and I fried the same switch. I tried with another RFT, same thing after few key downs. I then tried with a Transco and experienced the same result. I ended up with four dead SMA relays on the table of mixed brands. Some of these relays were 100% new - not bought second hand at flea markets. I decided then, that I would handle anything above +40dBm with waveguide relays only. I have never had trouble since. This problem is applicable to 10 GHz only, not to lower bands. For example at 5.7 GHz I run 25 W through the very same relays that fried at 10 GHz, without a problem. I am told that there are some similar relays that would handle up to 200 W. Well one of the relays I used was rated at least 50 W. (PS - the isolation has never been a problem (>60-70dB), but the power handling - yes, and cold switching, not hot).

**MORE TECHNICAL:** W7QX [w7qx@msn.com](mailto:w7qx@msn.com) sends the following note on using NE325s on 10 GHz. When I was "snowflaking" my first LNA board using the 3210s, I burnt out 3 FETs because things were too close on the one inch wide board. The next day, I laid out the board so that it was 1.4 inches wide. This solved the FET burnout problem. In addition my board is only 1.4 inches long. This length shortens the active microstrip in an effort to decrease PCB losses for a lower NF.

**NETNEWS BY G4RGK (BASED on K1ROG's Netnotes):** M0EME on 70 cm did not work K1FO on sked. N9AB reports working M0EME on CW. WD5AGO will be on 13 cm for the EWW EME Contest in May. KORZ has a new e-mail address [korz@comcast.net](mailto:korz@comcast.net). Bill was active on 70 cm during the AW for 5 hours, but only worked 3 stations. One was an initial with DL7UDA. K5JL was active in the contest and reports working quite a few JAs. Only K9SLQ and VE6TA on from NA at the started. Jay ended with about 30 QSOs. W9IIX was on 23 cm at the start of the contest and worked K9SLQ, but then the driver blew up again. Doug reports hearing more stations than ever before! He now thinks he has his TX problem solved. VE3KRP is setting up for 23 cm EME and now working on Septum feed. LA0GE is interested in 23 cm EME and has a 55 el. Yagi. He wonders if a QSO is possible with a single yagi or a bay of 4. Bent can be reached at [benvel@benvel.biz](mailto:benvel@benvel.biz). WB5AFY had about 18 QSO in the contest on 1296. He had an initial with ZS6AXT and also worked JH1KRC. W2DRZ was only on for a short time during the EWW Contest and only running 100 W! G4RGK was on 70 cm during the April AW, but heard only 2 stations. During the post -AW he QSO'd N9AB. LA8LF has a new e-mail address [anders@LA8LF.com](mailto:anders@LA8LF.com) and web page [www.la8lf.com](http://www.la8lf.com). WA1JOF should

be echo testing in a couple of days on 1296. K9KFR is getting ready for the 13 cm portion of the EWW EME Contest. LX1DB tried to be active in EWW Contest on 1296, but had a power failure when HB9BBD called and could not continue. Willie will work on his dish while the moon is at a low dec. He will be changing the 432 feed and installing filters to help with local interference. He used to use multiple feeds, but now is going back to separate feeds and will optimize each feed. NA4N is working on his Septum feed. He picked up a couple of initials during the EWW Contest: HB9V and ON7UN. He is now running 650 W out on 23 cm. OK1TEH is on 70 cm EME with 1 yagi. He made his first contact with N9AB. OE5JFL is back on 23 cm EME.

**FOR SALE:** K9ZZH still has IC-1275 and 2x7289 23 cm PA with water-cooling for sale. E-mail Dick at [rbenn39528@aol.com](mailto:rbenn39528@aol.com). KY5R is looking for connectors for 1 5/8" Cell cable [Commscope] 50-1873. WIQC is looking for plate bypass material for a 4 tube amp. He needs a piece for replacement of about 7" in dia.

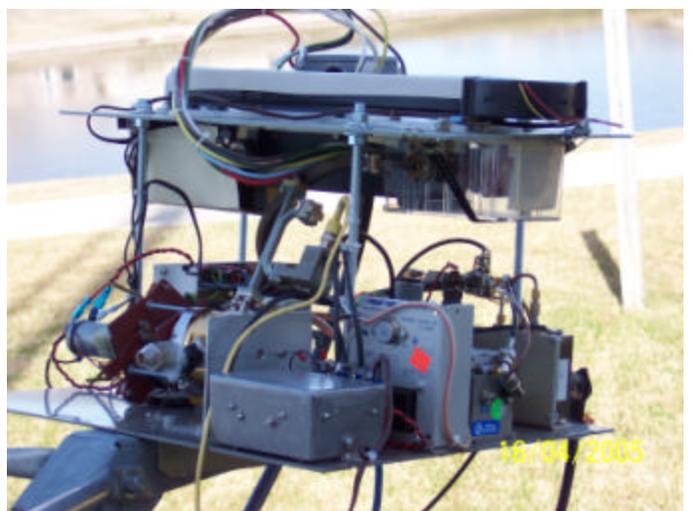
**FINAL:** This was certainly an exciting and a much more positive month the the last. I have heard the wavefiles of the 47 GHz QSOs and they are most impressive. FSK was used with averaging over a ten minute period to produce the final copy. I suspect that will produce it's own excitement and surprises.

Reminder the 12th Annual VHF Weak Signal Group banquet at Dayton is on Friday evening May 20<sup>th</sup>. Contact Tony at [WA8RJF@ARRL.net](mailto:WA8RJF@ARRL.net) or Tom at [WA8WZG@WA8WZG.com](mailto:WA8WZG@WA8WZG.com) for more information.

There is a lot more to cover, but I am afraid I have run out of time for this moon period. I hope to work many of you on 13 cm during the 2<sup>nd</sup> part of the EWW EME Contest. 73, AI - K2UYH



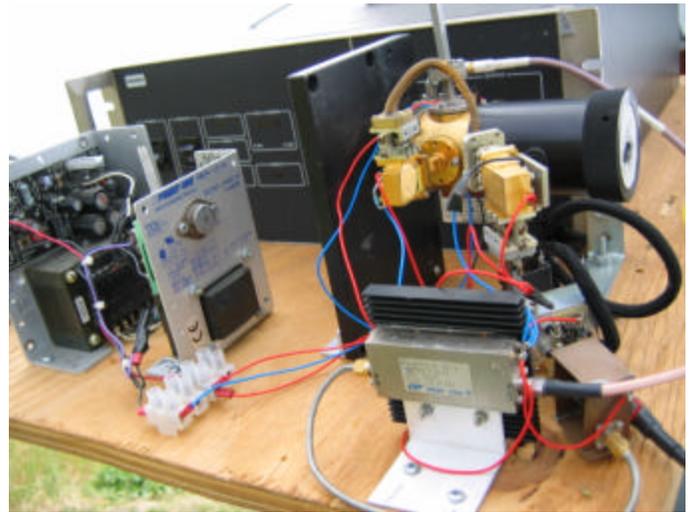
More details of RW3BP 47 GHz station – note dual feeds used for RX & TX



VE4MA 47 GHz Feed/Station Details



**VE4MA's 2.4 m offset dish**



**More details of AD6FP's 47 GHz setup**



**W5LUA in front of his 2.4 m offset dish for 47 GHz**



**EA3DDX operating EA3BB during the contest**



**OK1KIR's 10 GHz feed arrangement**



**RW1AW's new 1296 PA**