432 AND ABOVE EME NEWS
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VERY BEST HOLIDAY GREETINGS AND WISHES FOR A WONDERFUL NEW YEAR FROM ALL TO ALL ON 70 CM & UP EME

CONDITIONS: The 2012 ARRL EME Contest is now history. Conditions were generally good on 70 and 23 cm during the Dec weekend, but activity, of course, was not as intense on a second weekend. Most stations had a great time operating the contest, but a big concern was the continuing drop in CW activity on 432. Of even more concern is the maintenance of regular CW activity on 70 cm. The 70 cm CW Activity Time Periods (ATPs) are one of the ways we can keep CW alive on 432. They are now scheduled by SV1BTR and are listed in DL7APV's 2013 EME Calendar at the end of this Newsletter (NL). The next ATP is on 20 Jan 1300-1500 for EU to VK/JA and 2100-2300 EU to NA. I am proposing the addition of a NA to VK/JA period at 0430-0600. This year southern declination and perigee are almost perfectly synchronized as shown in F5SE's Moon Chart also at the end of this NL. Consequently, there are no obvious *GOOD* weekends to concentrate EME activity. But there are plenty of *GOOD* EME events on the calendar! The SSB EME Contests are on 16/17 Feb. The Dubus 70 cm contest is 16/17 March, 3 cm Up is 13/14 April, 23 cm is 11/12 May, 6 cm is 18/19 May, 13 cm is 15/16 June and 9 cm is 29/30 June. There is also an ARRL tropo contest that counts EME QSOs on 19/20 Jan – see K5QE's report..

F2TU News -- During the Oct EME contest, Philippe wanted to change feeds on his dish. He has a platform that enables him to work at his dish's feed point without climbing on an unstable stepladder. But, this platform is made of wood, and can be very slippery when it gets wet during heavy rain. This was the case on the day of the accident. Philippe went up on the platform, but slipped and fell on a small brick wall below the platform. He was seriously hurt, but managed to crawl back to his shack and awake his wife - (it was during night time). She called the local emergency services. Sadly his condition turned bad, and Philippe went into a coma during his transportation to the hospital. The latest news is that he is out of the coma, but having problems speaking and may not recover full mobility of his legs. Philippe also had a broken arm, 6 broken ribs, but the most critical injury was a brain hemorrhage. Fortunately, an operation, which consisting of removing a blood clot, was successful. He has difficulty speaking that is believed to be mainly due to feeding tubing entering at his nose and throat. The result is some irritation of the larynx, making speaking tiring and painful. Philippe is still in hospital, but should be soon released for rehabilitation. It could take some time before he comes back to full health. Philippe's wife spends all her time with him and this is the reason nobody can reach her on the phone. [Thanks to F5SE for passing on this information. Franck was 14 when he first met Philippe and they have been friends since that time. Franck is hopeful because as he says "Philippe is a rock"].

DH5NAH: Klaus klausdahlfeld@yahoo.de writes about his road to becoming QRV on 23 cm EME -- When my wife told me to throw our old bed away, I saw the wooden slats and knew what to do: Build a 1.8 m dish. After one weekend, it was finished, including a kind of tripod for manual tracking. To check its operation, I decided to listen on 23 cm during the 2nd part of the ARRL EME Contest. I borrowed a very good premap from my friend DL4MEA, (TNX Günter), and installed it with a linear polarization feed. A calculation showed that I should receive the ON0EME beacon at about -19 dB, if everything worked well. For quite some time after moonrise, I could not find the beacon or a station. Then there was a CW signal, which allowed me to optimize my azimuth and elevation pointing. After this correction, I was also able to see ON0EME at -18 dB. This level proofs that system works well. It would have been very hard for me to find the Moon without the beacon. TNX also to the ON0EME team! I heard other CW stations such as I1NDP (-14 dB) but very few on WJST during the contest. As I have only 10 W output power, I didn't try a QSO. I plan to improve the output power and become QRV in the spring.

DK3WG: Jurg dk3wg@online.de during the past month added only an initial with R0CQ on JT65B. This QSO gave him his 1st field 62.

DL9KR: Jan bruinier@T-Online.de updates us on his recent activity -- My last QSO before the ARRL contest was on 21 July with VP9I for initial #922 CW DXCC 119 on 432. The first part of the contest was absorbed by family affairs. The second part displayed long stretches of frustrating emptiness although condx were good. I worked on 1 Dec N4GJV, G3LTF, I2FHW (worked on tropo 30 years ago) #923, SV1BTR, W8TXT, LZ1DX, K0RZ, K3MF, UR5LX, K4EME, SD3F, G4RGK, UA3PTW, WA6PY, K1JT, SM4IVE, SM3JQU, CT1DMK, DF3RU, SM2CEW, OZ4MM and OZ6OL. I added on 2 Dec OH2PO, KL6M, SM7GVF, OK2POI, PA3DZL and VK3UM. It was nice to do a couple of CW QSOs – TNX.

F5SE/p: Franck kozton@free.fr contest report follows -- During the first leg of the EME contest on 1296, I could not be QRV all the time because I was also participating in the *Marconi Memorial Contest* an EU 144 CW-only tropo contest, during which I am always active. This year, both contests took place on the same week-end. So during this first leg, I could only work 42 stations. During the second leg, I was on most of the time the Moon was visible from my location, but I only added another 24 stations. This makes a total of 66 QSOs with 32 multipliers. New stations were UA5Y (569/569) for initial #128, RK4CR (559/559) #129, AL7RT (559/549) #130, LU1C (319/429) #131, SP7LHV (429/439) #132, SM7JSR (559/559) #133 and RD3BA (559/569) #134. Most of signals were ranging between (549) and (569). Weak stations like LU1C and SP7LHV were the exception. On 21 Dec, I randomly worked I5MPK (569/569) during the "End Of The World Day". Piero is quite often heard "off the Moon" calling CQ and testing. I also managed to add to my tracking software a specific function that automatically tracks the Doppler shift on the ONØEME signals. I am pleased to report that since the final switch-off of the local 1290 MHz radar, the sensitivity of my RX has improved by 1 dB! I suspect my preamp was permanently overloaded by the radar signals.

DH5NAH 1.8 m "old bed" stress dish

G3LTF: Peter's g3ltf@btinternet.com Dec report -- I was active on 70 and 23 cm in the last leg of the contest. I tried to concentrate on 70 cm, but the activity just wasn't there despite excellent conditions with strong echoes. On 1 Dec I worked on 432 G4RGK, I2FHW, W8TXT, N4GJV, K5GW, K0RZ, DL9KR, K4EME, LZ1DX, DL7APV, SM2CEW and OZ4MM. At 0800 I changed to 1296 and worked OK2DL, OZ4MM, K5GW and VE6BGT. Continuing at moonrise I worked I5MPK, SM7SJR for initial #366, F5JWF, G5WQ, UA3TCF, SP7LHV, RD3BA and F6CGJ. Continuing on 2 Dec I worked WD5AGO, LU1C #367, SV3AAF, PI4Z #368, SP6GWN, W1AIM #369, OK1CS and W5LUA. Finally I made one more feed change to 432 again and worked KL6M and CT1DMK. These last 2 QSOs were with my old K2RIW PA with about 400 W at the feed because the main PA failed due to damaged G2 connections. I am still in process of making this repair; it has turned into a major task. My final scores were on 432 25x18, on 1296 82x35, on 2320 34x26, on 3400 3x3, and on 5760 9x8 for a claimed total of 1,377,000. I don't think my missing the first pass in Nov had much effect. I felt that CW activity generally was down a little, but down a lot on 432. I believe that we would get more activity, especially on 432, if stations were encouraged to make QSOs on both CW and JT modes by changing the contest rule 6.2: "Stations may be worked for credit only once per band, regardless of mode." I suggest two ways of doing this. 1) Have one of the two 50-1296 weekends for JT only QSOs and the other for JT on 50 and CW 144-1296. Stations can be worked on both weekends, once on JT once on CW. Alternate the weekends year by year in the calendar as the last weekend is potentially more subject to weather disruption. 2) Keep both weekends multi mode but allow contacts with the same station on either mode but specify that JT QSOs must be made above, say, 050 on 432 and 1296 and CW QSOs below .050. Similar frequencies (perhaps 144.080) could apply to 144. Without some change of this sort, it's pretty clear that 432 CW activity will go the same way as 144 with even many of the bigger, beacon, stations giving up. One other effect of doing this would be to encourage smaller stations to attempt the challenge of CW QSOs and thus to encourage equipment performance improvement. I shall be putting these suggestions in to the ARRL and I encourage others to think of innovative ways to get the overall activity up. Finally, on 8th Dec, I worked G3WDG for initial #39 on 5760 with an excellent signal. I think my first QSO with Charlie was on 432 32 years ago. We still have to work on 13 cm.

G4BOA: John john@g4bao.com (JO02cg) is now set up for 13 cm EME (2320 and hope to add RX on 2304 soon). He has 1.9 m dish with a Septum feed, 180 W SSPA and 0.29 dB DDK VLNA. He can operate both CW and JT65C modes, and is receiving his echoes using JT.

G4RGK: Dave's g4rgk@btinternet.com contest report for the second leg of the ARRL contest -- I was only on 432 because the local WX conditions made 23 cm too uncomfortable – I operate from an outdoor shed. Echoes and general conditions were good, but activity on CW has now reached the point of no return. Clearly there are many stations that have been active in the past, but that are either only on JT these days or have completely given up. I started out on CW on the bottom of the band, but after 2.5 hours I had only made 3 QSOs, so I gave up and moved up to band and called CQ on JT. This produced a steady stream of callers. Through the weekend, I looked back down on the CW end from time to time, but found very little activity. I finished up working a total of 56 QSOs on 432 for both weekends, with 34 new on this weekend. QSOs were on 1 Dec G3LTF (559/559), K1JT (559/559), DF3RU (449/559), KD3UY (26DB/O) JT65B, OH6UW (20DB/O) JT65B, K5DOG (20DB/22DB) JT65B, K5QE (11DB/16DB JT65B, YL2OK (23DB/O) JT65B, OK1TEH (20DB/24DB) JT65B, DL9KR (579/579), VK3UM (449/449), JA6AHB (12 DB/16DB) JT65B, JE1TNL (19DB/O) JT65B, SM2CEW (549/559), OZ4MM (559/549), PA0PLY (15DB/21DB) JT65B, S51ZO (18DB/O) JT65B, ES3RF (O/O) JT65B, LZ1OA (19DB/O) JT65B, EA5CJ (11DB/18DB) and EB5EEO (18DB/O) JT65B, and on 2 Dec SM5DIC (20DB/19DB) JT65B, UT2EG (23/O) JT65B, IZ2DJP (27DB/O) JT65B, DL7APV (569/559), DL7UDA (10DB/O) JT65B, PA2CHR (26DB/O) JT65B, K7XQ (19DB/O) JT65B, KL6M (559/549), PA2V (27DB/29DB) JT65B, G4CBW (26DB/O) JT65B, DL1SUZ (24DB/24DB) JT65B, UR5LX (22DB/18DB) JT65B and DF3RL (23DB/O) JT65.

I1NDP: Nando's i1ndp.nando@gmail.com ARRL EME Contest final results – I have nothing special to report except the final score for the contest. As a single operator, single band on 23 cm, CW only, I had a total of 99x42 for 415,800 points.

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp sends his Dec contest results and new 3 cm activity -- On 11 Nov, I worked on random, on 10450 JA6CZD (559/549), but failed in a sked with JA8ERE (T/nil) on the same day. In the contest on 1/2 Dec, I worked on 23 cm IZ1BPN, SM7SJR, IK3COJ (dupe), F5SE/P, IK2MMB, F5JWF, DL3EBJ, N2UO, WA6PY, JA6AHB, JA4LJB, I5MPK and S59DCD (dupe). My score in ARRL EME Contest was on 23 cm 43x22, and on 13 cm 12x12 and on 6 cm 2x2. During the contest, I suffered from the elevation actuator of my 6 m dish moving very very slow. After the contest, I found the voltage from the power supply (PS) was too low. I replaced a transformer in the PS, which had been in use since 1982, and all was back as before.

K0RZ: Bill k0rz@comcast.net reports on his 432 CW activity in the ARRL EME contest -- In Nov, using fixed vertical polarization, I QSOed SM4IVE, SV1BTR, SP7DCS, VE6TA, K5GW, DF3RU, N4GJV, W8TXT, OH2PO, DG1KJG, UA3PTW, K1JT, JA6AHB, JA9BOH and VK3UM. In Dec using fixed horizontal pol, I QSOed G3LTF, I2FHW for initial #348, DL7APV, DL9KR, OZ4MM, SM2CEW, K3MF, WA6PY and KL6M. My echoes were strong in Dec and rotating to horizontal may have cost a few EU contacts as the usually strong EU stations were weaker than normal. My overall score was 25x19.

K1JT: Jack (K2BMI) and Mike (W9IP) joined Russ (K2TXB), George (NE2U) and I (K2UYH) a.katz@ieee.org during the Dec contest weekend. As planned, we operated mainly on 70 cm during the first day and 23 cm the second day. Activity was lighter, but sufficient to keep thing interesting most of the time the Moon was above the horizon. We QSO'd on 432, on 1 Dec SM4IVE (589/579), SV1BTR (569/559), I2FHW (539/449), G4RGK (559/559) DUP, 0337 DF3RU (11DB/7DB) JT, KD3UY (O/O) JT, 0355 YL3OK (O/O) JT, 0404 OK1TEH (21DB/O) JT, K5DOG (19DB/O) JT, PA0PLY (12DB/16DB) JT, DL9KR (579/589), WA6PY (559/559), OZ4MM (569/579), SM2CEW (569/559), W8TXT (559/559), OZ6OL (559/559), S51ZO (18DB/O) JT, 0705 G4FUF (16DB/O) JT, W6YX (27DB/O) JT, G4EZD (16DB/O) JT and PA4CHR (22DB/O) JT, DF2VJ (13DB/O) JT and VK4EME (19DB/10DB) JT, and on 2 Dec CT1DMK (559/559), RA3LE (16DB/O) JT, EB5EEO (18DB/O) JT, RU4HU (27DB/O) JT, G4GBW (27DB/O) JT, KL6M (569/559), DL7UDA (8DB/O) JT, PA3DZL (9DB/O) JT, SM5DIC (10DB/O) JT, OH6UW (17DB/O) JT, PA2V (O/O) JT and DL8DAU (O/O) JT. We worked on 1296 AL7RT (579/559), OE5JFL (559/569), PY2BS (7DB/O) JT, VK5MC (569/569) and JA4LJB (559/569), and on 2 Dec IZ1BPN (559/559) , RD3BA (O/O), RK4CR (O/O) JT, YO2BCT (O/O) JT, SV1DNU (O/O) JT, PI4Z (O/O) JT DUP, IK1MTZ (579/559), I5MPK (569/579), VE4SA (559/459) and OK1CS (O/O) JT DUP. All QSOs were on CW unless indicated as JT. We ended with a score on 70 cm of 59x29 and on 23 cm of 82x37, our best ever on 70 cm up.

K4EME: Cowles' candrus@mgwnet.com thoughts on 70 cm during Dec contest weekend – It was a very strange weekend, especially the second night. I lost several JT stations and don't know why. I decoded YO2LAM twice calling me. When I went back, he was gone. WD4JHD had the same experience around the same time [on 2 m?]. I also had several false decodes, but if I see a "?" and only get the call once, I know to disregard. Maybe my anomalies were due to conditions, or my condition due to no sleep for 2 days. I tried to sleep during the day between Moon passes, and found out that our dogs had learned how to bark, all day! I never heard more than a bark once or twice before yesterday. Maybe I kept them up Friday night, so the barking was pay back – HI, HI... With my lack of sleep, I had some false decodes on CW too. During the first leg of the contest, JT seemed to work great, almost everyone I decoded, I finally worked. The last night, was a completely different story. If the decodes I had were real, I missed a lot of stations.

K5GW: Gerald TexasRF@aol.com shares his thoughts and score for the contest -- My 70 cm and up contest results were improved over last year by about 13%. This was mainly due to the failure of my 2 m PA for the entire last day of the contest. The failure allowed more time for the other bands. I ended with on 70 cm 45x34, on 23 cm 78x34, on 13 cm 25x23, on 9 cm 3x2 and on 6 cm 10x8. As reported by others, CW activity on 70 cm was sparse. Perhaps this was related to the EU terrestrial contest. I can't say, it was due to a JT65 drain, as activity in that mode was pretty sparse as well. Many stations were operating both modes so the total number of active 70 cm stations was shockingly low. Gottaways on 23 cm were ZS5Y, PA2DW (miscopied his call) and W1AIM (could not pull through libration chopping). This brings up the question of using *verrrry slow CW* and reading it off the waterfall display. Is that a valid CW mode? [I feel so, but it is not as easy as it might seem.]

K5QE: Marshall k5qe@k5qe.com want to remind everyone to look for him and others during the ARRL's Jan VHF/UHF/Microwave Contest -- Once again, the K5QE contest team will be working hard on 432 EME during the ARRL Tropo Contest, 19/20 Jan. This year, the moonrise is absolutely horrible for us. It rises just before the contest starts. That means that we will be trying to work EME while there are rovers and fixed stations that need to be worked. We will be calling CQ on 432.070, but only off and on. When we need to be working rovers, etc. we will not be able to call CQ. We will watch 432.070 and if we see your trace or hear your CW, we will call you back as soon as we can. On 20 Jan, there is very little 432 tropo activity in the afternoons from 1900 to about 2300.

We will be calling CQ as much as we can during these hours, so that is the time to work us if you can. We will call on JT, but if we hear a CW caller, we will switch to CW and make every effort to work you. I have a CW schedule at 2200. It is your job to figure out who that might be - HI. Please drop by and work us on Sunday if you can. We really do appreciate all the "rare" grids that we get on 432 EME.

N4GJV: Ron's qstdemb@yahoo.com recent EME activity report follows -- I was QRV on 70 cm, for several hours each day during the Dec session of the ARRL EME Contest. Many thanks to G3LTF, DL9KR, DL7APV, DF3RU, UA3PTW, SM2CEW, DG1KJG, and KL6M, for the CW EME QSOS! Gotaways include K4EME, LZ1DX, CT1DMK, I2FHW, and WA6PY. I also heard W8TXT, SV1BTR, K0RZ, K5GW, K1JT, SM4IVE, OH2PO, VK3UM, and others. I plan to be QRV during the December 23 activity period (2100 to 2300), and I hope for a good activity level.

N4PZ: Steve n4pz@live.com is back from his trip to SA and now regularly active on 23 cm CW usually on 1296.020 calling CQ. On 20 Dec, Steve reports CW QSOs with TI2AEB, VK2JDS and SM7FWZ. He says the first 2 normally work JT, but he was able to get them on CW. Signals were not loud, but strong enough to complete QSOs on CW. On 22 Dec he added I1NDP, PA3FXB for initial #78, G4CCH and VE6TA. Steve normally checks the HB9Q logger for activity.

N4QH: Lyle <lylen4qh@aol.com> is now QRV on 1296 with a 12' dish of his own design (that he is offering for sale as kit – see For Sale section) and 100 W SSPA, and has QSO'd several stations [including K2UYH]. He also has 150 W on 2304 and 30 W on 3456 with a new Kuhne PA. [TNX WA3QPX for forwarding this report.]

NC1I: Bob (W1QA) bob.mccormick@gmail.com has news on happenings at NC1I – We have been doing a lot of work at the NC1I station. We didn't make the recent contests due to problems on the tower. A new FTDX-5000MP replaces the TS-2000 and a new Kuhne transverter goes with it. I was able to decode WSJT signals without a tower mounted preamp. I am also trying to figure out how to get the SDR-IQ setup with MAP65. This configuration is all new to me, and I don't have that much time at the NC1I station - wish I lived there!

OH2PO: Matti mattioh2po@gmail.com reports on his group's 432 contest results -- This year we had total 86 QSOs, but only 33 were on CW. On Sunday evening (2 Dec) VK3UM, DL9KR and SM4IVE were all on side by side calling CQ. Lars kept on calling for almost an hour with no answers. Sadly CW activity on 432 is declining fast. The peak year here was in 1998 when DL9KR had 124 and OH2PO 138 QSOs, all CW. A CW only contest would probably kill the remaining CW activity. Small stations will find almost nobody here. The big guns would not be happy calling CQ for hours for a very few QSOs. Now, we can find reasonable activity on JT65 and in between go to CW.

OK1KIR: Vlada and Tonda vladimir.masek@volny.cz report on their club's microwave (MW) EME activity during Nov/Dec -- On 17 Nov, UA4HTS and UA4HAK from Russia (Toly) visited our EME location, and we talked about their plans to become QRV on MW EME. In the ARRL EME Contest, we searched for new stations on 23 cm and added an initial on CW with RK4CR #340. Another station that we thought was an initial, UA5Y, is the same as RK3WWF. On JT65C we added digital initials with K7XQ {#128}, EA1RJ {#129}, W6YX {#130}, PI4Z {#131} and UA5Y {#132}. After the contest, we worked on 1296 on 6 Nov at 0758 WA8RJF (549/529) #341 and 0824 W1AIM (549/559) #342, on 10 Nov at 0602 SM7FWZ (569/569), and on 11 Nov at 1110 TI2AEB in JT65C (11DB/10DB) {#133}, 1132 TI2AEB again on CW (549/569) #343 and a new DXCC, and 1206 I1NDP (3DB/3DB) JT65C. Back in Nov, in the contest, we made CW initials with SP7LHV (#346), VE6BGT (#347) and LU1C (#348). On JT65C we worked RA4DX/4 and K5GW {#135}. On 30 Nov we QSO'd at 2052 M0DTS (549/519) #344 and 2220 SM7SJR (559/559) #345. During the contest we completed a total of 41 CW and 21 JT QSOs. On 2320, we worked on 22 Oct at 1627 UA4HTS (549/549) #for initial 122, LO field and after UA4HTS again (10DB/13DB) for digital initial {#10} on JT65C, and on 24 Nov at 1600 SM6CKU (559/559) #123. On 5760, we worked on 11 Nov at 0824 G3LTF (549/559), 0931 SV3AAF (549/559), 0942 SG6W (549/559) for initial #63 and 1002 PA0BAT (569/569), and on 2 Dec in sked at 2109 G3WDG (549/559) #64 and at 2120 G4KGC (549/549). Condition were good with a Moon noise of 1.2 dB. On 10368 during Oct-Dec we ran JT65C tests initiated by VK7MO with his only 77 cm dish! We were initially very concerned that JT65C would be usable on the high MW bands with their high frequency spreading due to libration, but were surprised by the results, which move MW EME ham-radio to new frontiers. Many JT65C QSOs were done, starting at Rex's home on 13 Oct at 0356 with a low mutual predicted spread of only 27 Hz with (18DB/19DB) reports to successful QSOs on 24-26 Nov at predicted spread up to about 170 Hz with (29DB/28DB) reports. All QSO were made with precise computer controlled compensation of otherwise high Doppler shifts. Our results show clearly that QSOs using digital modes with the small tone separation of JT65C are possible at moderate frequency spreading. During Nov-Dec, VK7MO with his portable station (77 cm dish, DB6NT 50 W SSPA and 0.6 dB WG LNA) while travelling throughout the Australian continent and visiting different VK ham-radio friends made many JT65C QSOs with fixed OK1KIR (4.5 m dish, the same DB6NT 45 W SSPA and 0.6 dB WG LNA) and further QSOs with VK3XPD, VK3NX and later on with W5LUA. OK1KIR made JT65C QSOs on 22 Oct 1344 VK7MO (27DB/27DB) {#3} from QE38KN with spread of 70 Hz and 1400 VK7JG (23DB/24DB) QE38KN, on 25 Oct at 1522 VK7MO (28DB/27DB) QE37PC with spread 90 Hz, on 29 Oct at 1720 VK7MO (29DB/28DB) QE37PC with spread of 130 Hz – (this QSO was chased by GM6VXB with 3.8 m dish, who was able to decode both stations with only manual Doppler correction as his first ever heard EME signals on 3 cm), on 10 Nov at 0236 VK7MO (24DB/24DB {#4} QG62KP with spread of 30 Hz, 0250 VK4UH (24DB/24DB) and 0306 VK4IIO (24DB/25DB), on 12 Nov at 0532 VK7MO (23DB/22DB) {#5} QF68KM with spread of 60 Hz and 0538 VK2EI (23DB/23DB), on 13 Nov at 0638 VK7MO (24DB/25DB) {#6} QF56QP with spread of 80 Hz, 0647 VK2DAG (25DB/26DB), on 16 Nov at 1038 VK7MO (26DB/27DB) {#7} PF58KN with spread of 90 Hz – (during this QSO OK1KIR's signal was decoded by VK3GHZ (27DB) on a 64 cm dish with manual compensation of Doppler), on 17 Nov at 1124 VK7MO (25DB/24DB) {#8} PF17TP with spread of 95 Hz, on 18 Nov at 1158 VK7MO (27DB/26DB) {#9} PF06WD with spread of 100 Hz, 1222 VK3XPD (19DB/21DB) {#10} QF22ND with spread of 70 Hz, 1244 VK3NX (19DB/19DB) {#11} QF21CT with spread 70 Hz, on 19 Nov at 1214 VK7MO (28DB/26DB) {#12} OF96FA with spread of 110 Hz, on 20 Nov at 1258 VK7MO (28DB/29DB) {#13} OF84WX with spread of 120 Hz, on 23 Nov at 1340 VK7MO (29DB/28DB) {#14}, OF85TI with spread of 150 Hz, on 24 Nov at 1358 VK7MO (29DB/28DB) {#15} OF86SH with spread of 150 Hz, on 25 Nov at 1442 VK7MO (29DB/29DB) {#16} OF87NB with spread of 160 Hz, on 26 Nov at 1544 VK7MO (29DB/28DB) {#17} OF89AI with spread of 175 Hz, on 27 Nov at 1526 VK7MO (29DB/28DB) {#18} OG70WH with spread of 170 Hz, on 3 Dec at 2036 VK7MO (29DB/28DB) {19} OF75NQ with spread of 153 Hz, on 8 Dec at 0132 VK7MO (25DB/23DB) {20} PF38AA with spread of 101 Hz, 0206 VK7MO (25DB/25DB) {21} PF37AX with spread of 96 Hz, 0358 VK7MO (23DB/23DB) {22} PF28XA with spread of 65 Hz, and 0430 VK7MO (21DB/21DB) PF27XX {23} with spread of 58 Hz, on 9 Dec at 0254 VK7MO (23DB/25DB) {24} PF48 with spread of 63 Hz, and on 12 Dec at 0418 VK7MO (26DB/26DB) {25} PF68 with spread of 55 Hz and 0452 VK7MO (23DB/24DB) {26} PF67 with spread of 54 Hz. During these last 2 QSOs, the TX power at OK1KIR did suffer from a 2 ~ 3 dB drop due to a decreased driving power from their 10368 DB6NT transverter. The next sked from PF78 was interrupted by a wind gust that damaged VK7MO equipment. This unfortunately accident closed the now *famous* journey of Rex through the Australia continent. We ended with a total 23 initials. It is clear that has Rex showed how that MW EME can be accomplished with a very small portable dish. We also worked on 30 Nov on 10450.1 (RX/TX) at 1748 JA1WQF (549/559) for initial #73 and QM field. At this time our measured Moon noise was 3.4 dB, Cass 0.04 dB and Tau A 0.06 dB. On 24 GHz, we finally worked on 20 Nov at 1633 IK2RTI (O/O) for initial #13 and the 1st I-OK QSO on 24 GHz. This QSO was completed despite a high predicted spread 420 Hz and a Moon degradation of 1.2 dB. Moon noise was measured at 2.1 dB (RH 90%).

ON4TA: Eric fb812248@skynet.be reports on his recent activity -- I was QRV on 23 cm during the ARRL contest and made 27 CW QSOs during the first leg, with 150 W at the feed of my 3.6 m mesh dish. I then moved the PA near the dish and could get about 200 W at feed. I also built a better preamp, modified the feed's RX port and eliminated some SMA adapters. The net result was a 1.5 dB improvement of Sun noise! I can now hear my own echoes quite well with the Moon at apogee, but a little more power is needed to make easier CW QSOs with stations using 10 to 12' dishes. I was also active a few hours during the second leg and added 12 stations for a total of 39 CW QSOs. I now have a big list of stations, which I heard and hope to contact in the near future.

PA0PLY: Jan pa0ply@pa0ply.nl was on 70 cm during the contest -- What a crazy weekend we had on 70 cm during ARRL contest! Conditions were varying a lot, and went from absolutely down to zero (not hearing any stations) to working a 1 yagi station with 150 W! Deep QSB and Faraday did their job, frustrating my QSO attempts from time to time. I also had some rain static and wet snow during the Saturday night pass. I used in parallel my normal RX chain and a Funcube with MAP65. It was wonderful to see the color change from red for the recent calls decodes to yellow for previous listed decodes. When conditions changed, the colors just followed. From time to time no stations were found at all, while after some time, stations popped-up again. During the Sunday pass, the pol was really frustrating. I was hearing NA based stations with good signals, but nil from EU based friends, Hi! I heard K3MF for almost 1 hour with

good signals (20DB), but had no response to my repeated calls. Than after have a break for breakfast, I started calling CQ again, and surprisingly Wayde returned my call at only (26DB). We just made it for mixed initial #74* on moonset with only 3 degs left. My total for the contest was 20 QSOs with 9 Initials. Stations worked were K1JT (16DB/O), PA2CHR (18DB/O) with 1 yagi and 400 W, UR5LX (29DB/23DB), DF3RU (12DB/O), JA6AHB (18DB/14DB), EA5CJ (20DB/18DB), S51ZO (27DB/O), YO2LAM (20DB/O), G4RGK (21DB/15DB), PA3DZL (17DB/23DB), ES3RF (27DB/18DB), LZ1OA (25DB/O), G4CBW (28DB/23DB) with 1 yagi and 140 W, K5GW (17DB/11DB), RA3LE (21DB/O), EB5EEO (26DB/O), OH2PO (19DB/12DB), K3MF (26DB/O), DL5FN (27DB/O), K7XQ (27DB/23DB). My station is 8 x DL6WU modified yagis (3 m length) and an GS35B PA.

PA0PLY's 8 x DL6WU yagi array

PA2V: Peter peter@pa2v.com is a 70 cm (near) horizon only station with a single yagi and 800 W – I tried random operation at moonset at the end of the contest, and was surprised by my results. I did not expect to work three stations in a row. QSO'd were G4RGK (28DB), K1JT (22DB) and DL5FN (29DB). On moonrise I worked DL7APV (22DB). I saw and heard DL9KR (CW), SM4IVE (CW), UN6PD (JT) and K5DOG (JT). After the contest I added JA6AHB and UA3PTW. These bring me to 7 initials. I guess I need to build up more experience with all that huge Doppler. While some stations called me, I saw other traces spread out on the screen, HI!

SM2CEW: Peter's sm2cew@telia.com Dec contest report -- I had a really good time on 432 in the last leg of the contest. On 1 Dec, I worked SV1BTR, DL9KR, I2FHW for an initial (#), UA3PTW, K1JT, SM4IVE, K0RZ,
OZ4MM, N4GJV, DG1KJG, OH2PO, DL7APV, OZ6OL, LZ1DX, G3LTF, JA9BOH, SP7DCS, CT1DMK, J0TJU (#) and G4RGK, and on 2 Dec DF3RU and KL6M. All had excellent CW signals. I divided my time between 144 and 432 during the weekend. The weather was quite cooperative, all things considered, as it was rather mild and no snow. Seasons Greetings to all and see you in the last 432 ATP on 23 Dec at 1400-1600 and 2100-2300.

SM4IVE: Lars sm4ive@telia.com was not happy with the 70 cm part of the ARRL EME Contest -- This year's 70 cm contest has to go down in history as the worst ever. Last year I worked 80 QSOs and 42 multipliers. This year my QSOs were down to 46 with a 31 mult. I decided not to stay up during night hours, since the activty was so low. It's a pity, but this seems to be the trend with some activity on JT from what I could see in the panadapter. Maybe it's time to look over the rules and contest calendar. Possibly we could spread out the contest, so that 2 m is one weekend and 70 cm the next weekend, and so on. Some stations are active on both 70 and 23 cm. I think it would be better with a dedicated weekend per band. The condx on early Saturday were quite OK. US stations were only copied in vert pol. WA6PY was only copied vert, nothing on horiz. On Sunday at moonrise, the condx were marginal to bad. I stopped after 3 hours of CQ and no QSOs. I use my new Flex 5000A as an exciter and SM4DHN transverters. I noticed that I had some temp drift, so xtal ovens are now on ordered. No logs will be sent to the ARRL. QSO'd were on 3 Nov G4RGK (559/559), I2FHW (559/559), OZ6OL (549/569), LZ1DX (559/579), SM3JQU (559/589), SP7DCS (559/589), DG1KJG (559/579), SV1BTR (569/589), DF3RU (569/559), DJ3JJ (539/559), OH2PO (569/599), OH2DG (549/569), KØRZ (559/579), W8TXT (549/449), VE6TA (559/579), N4GJV (559/579), K7XQ (529/539), K5GW (579/599), K3MF (539/559), OK2POI (O/O), KL7HFQ (O/O), WA6PY (549/559), SM7GVF (529/O) and SD3F (O/O), on 4 Nov I1NDP (569/579), N8CQ (559/579) for an initial (#), UA3PTW (559/599), LU1C (O/O) (#), PA3DZL (529/559), OZ4MM (579/589), DL7APV (569/589), VK3UM (569/589), G3LTF (539/569), JA9BOH (O/O) and JA6AHB (549/599), on 1 Dec K1JT (529/589), CT1DMK (549/559), UR5LX (429/559), DL9KR (599/599), SM2CEW (549/579), S51ZO (529/579), UT2EG (529/579), KL6M (559/569) and JAØTJU (O/579), and on 2 Dec K5QE (539/529) (#). I was also active on 1296. I only worked 23 cm for fun as I spent most time on 432. I QSO'd on 3 Nov I1NDP (559/589), KL6M (559/589), OZ4MM (589/599), OK1DFC (589/599), OK1CS (559/589), VA7MM (549/599), F5SE/P (579/589), K1JT (579/599), NA4N (549/599), G4CCH (589/599), PA3DZL (559/579) and K5GW (589/599), on 4 Nov HB9BBD (589/599), N2UO (569/589), G3LTF (579/589), SM7FWZ (569/589), IK1MTZ (559/589), VE6TA (559/599), WA8RJF (549/559), ON5TA (529/589), WD5AGO (549/599), SM2CEW (569/589), DL3EBJ (569/579) and AL7RT (549/569), and 1 Dec RD3BA (559/579), OK2ULQ (549/599), LZ2US (579/579), OK1CS (559/589) and SP6JLW (589/599).

SP6GWN: Henryk sp6gwn@wp.pl is looking for skeds on 6 cm. He plans to be QRV on 21 Dec and from 29 Dec to 1 Jan. His station consists of a 3 m dish (f/d 0.3) with RA3AQ feed, 36 W SSPA and 0.8 dB NF LNA.

UA3PTW: Dmitry ua3ptw@inbox.ru has recently added the following initials on 432 using JT65B, EI9E, I2FHW, UX0FF and G4CBW. On 1296 he made initials on JT65C with TI2AEB, I2MBC, EA1RJ, UA5Y and PI4Z. [TNX DK3WG for forwarding this report].

VA7MM: Mark (VE7CMK) and Toby (VE7CNF) va7mm@rac.ca and their group's contest effort – We were active on 1296 during the ARRL EME Contests weekends in Nov and Dec. This was our 10th year of participating in this event. This year, we have in our log 43 QSOs (33 on CW and 10 on Digital) and 24 Multipliers yielding a score of 103,200. Five initials were worked during the contest with UA5Y, RK4CR, LU1C, UA4HTS and ON5TA. These bring our initial total to #120 on CW, {#50} on digital and #152* mixed mode. Our station is in the western North American region and we thus experience fairly short windows to EU, typically 4 hours. EU stations please operate until your moonset! VA7MM has a 3 m parabolic dish, about 200 W RF power at the dish feed and receive preamp with 15 dB gain and 0.33 dB NF. We will continue in 2013 to operate in 1296 MHz EME operating events and are otherwise available for scheduled contacts by e-mail.

VE4MA: Barry ve4ma@shaw.ca is setting up for MW EME from his winter QTH in sunny and warm AZ -- I am playing with a small dish for EME, and have already set up for 23 cm. I also expect to put AZ on 9 and 6 cm with high power (>200 W) soon. I have been using 3 panels from a 10' dish to make a 5' offset dish – [see picture at the end of this NL]. I am using a dual dipole circular feed for 23 cm, and large 1.8 WL IMU feeds from my 2.4 m offset dish at home for the higher bands. I may try a larger stress offset dish on 23 cm in the future. I can only setup and operated temporarily, and then must take everything down, but at least I can get on. On 23 cm I was seeing 7.25 dB of Sun noise with a G4DDK preamp - (it is very low noise ± who cares dB; the NF lunatics are almost as fanatical as the CW enthusiasts – HI). I was seeing 10 dB (linear pol) with the same feed in my 2.4 m (8') dish at home. There is a 0.25 dB loss in Sun noise with going to circular. It thus seems that the 5' is working FB, although small for 23 cm. On the 1 Dec contest weekend, I had a mental malfunction with my SDR frequency calibration and was 100 kHz off, so I did not hear anything. On the second night, I did find HB9BBD and OK1DFC, who stayed on 23 cm late enough for me to find them. I had using only 150 W and did not get any reply. I now have the power up to 175 W and will have 20' of 7/8" Heliax instead 25' of ½" Heliax. Hopefully, I will also be QRV on 5.7 around the end of the year with 50 W, more later once I get a big TWT married to a HVPS.

VE6BGT: Skip macaulay.skip@gmail.com was on 1296 during the Dec leg of the contest -- I ended having a good weekend in the EME contest. At first my computer for controlling my dish failed, but I was able to get it going in lots of time. The PA worked well, and I worked in the first pass I1NDP, N2U0, OK1CS, SP6JLW, K5GW, G4CCH and G3LTF. The next pass, I added HB9BBD, F5SE/P, W5LUA, OK1KIR and OK1DFC. I heard others, but apologize for my poor CW skills. Signals overall were quite strong for a change.

VK3UM: Doug tikaluna@bigpond.com writes – My final tally in the contest was on 70 cm 26x18 and on 23 cm 61x33 for a total of 87 QSOs. This total is down from last year (95) primarily due to 432, but above 2010 and 2009. In 2007 and 2008, I had 103 both years. My total number of contacts does not vary by much, but this year 70 cm had the lowest participation ever on CW. From 2008 on, the drop has been due to the lack of participation from USA stations. I say it every year: "I can only work those that appear during my window." To my knowledge during my NA window, I only missed one that I could read on 23 cm. My EU window time and the total EU stations worked does not vary by

more than 5 in past 7 years, and that's not a reflection on the total number that were active, just simply the time I have to work them.

VK4CDI: Phil vk4cdi@gmail.com reports on his Dec contest results -- On 23 cm, I worked initials with IK1MTZ, EA1RJ (JT65), WA6PY, K5GW and WD5AGO. All were on CW unless noted. On 70 cm, added initials with JE1TNL and K5DOG. Both were on JT65B. I should have 30 W on 9 cm for the New Year, and am interested in skeds for this band as well as 432 and 1296.

W1AIM: Paul w1ghz.vt@gmail.com sends news of 1296 operation from VT -- W1AIM and W1GHZ put W1AIM (VT) on 23 cm in Nov. We used a 4.9 m dish and a 60 W SSPA. We had only manual azimuth rotation and a limited window. During the ARRL contest weekend, we worked I1NDP and HB9BBD. During the following week, a few additional stations were added. During the Dec weekend, it was too cold on the 1st day, but on the second we QSO'd OK1KIR, HB9BDD again, G3LTF, OK1DFC and N2UO. I saw up to 13 stations at once on our HDSDR screen. We got lots of QRZ from other stations. We are now down for the winter, but we will be back in the spring with better tracking and more power. We are also enlarging our window with a chainsaw.

W4OP: Dale parinc1@frontier.com updates us on his EME status -- I have been off 23 cm EME ever since a rock slide took out my dish a year or so ago. I put up a 70 cm 4 x M2 end mounted yagi array for the Dec leg of the ARRL contest (RX only). W4SC and I were quite pleased with the strength of CW signals heard (SM4IVE was 589) from this clean array during the contest. I got inspired enough to rebuild my 23 cm station, and now have the 432 array for sale. [See the For Sale section of this NL.] I hope to be QRV on 23 cm again by the spring.

W6XY: John (K2YY) johnhill5000@gmail.com reports of the Stanford EME contest effort -- Team W6YX wrapped up the 2012 ARRL contest with 144 random moon bounce contacts on 144, 432 and 1296. On 432 our score was only 2x2, but on 1296 we had 60x31. We used a 34 dBd 6 m dish on 1296. After AD6FP made changes to the RX feed monopole and re-worked a new LNA, hasty pre-contest Sun noise measurements were a bit disappointing, still showing 17 dB, ~1 dB worse than what EMECalc predicts. However, the ON0EME beacon, and several stations that were marginal copy the first weekend were quite easy to copy after these changes. Again, SDR proved to be a valuable tool, allowing us to run MAP65 on this band, 'skimming' all JT65 stations as we do on 144, while a spotting operator used Linrad to find new CW stations. On 432, we had 20 dBd, thanks to K6MYC/M2 Antennas. K2YY, KJ6SDF and W6TCP were able to get a small makeshift 432 station on the air the second weekend. With a 1.2 dB NF LNA and plenty of local QRM, we heard 5 stations, but were only able to work two of them, while operating only the first few hours after moon rise. Not having a SDR on this band hampered our efforts and made us really appreciate the software contributions to the EME community by K1JT (MAP65) and SM5BSZ (Linrad). In our opinion, a SDR is absolutely essential when operating EME. We have done tests and find we always make more contacts operating random with a SDR compared to operating real time skeds with a chat room. History shows using a SDR improves our contact totals by 3-6 dB every time! The fastest, cheapest and most guaranteed 3-6 dB we've found! Being the furthest west coast station on the mainland, we have a few hours less mutual footprint with EU compared to our east coast counterparts. I imagine the seemingly low EU turnout the second weekend was due to many of the small and medium size EU stations going to sleep before California got into the Moon's foot print. The larger more serious contest EU stations stayed awake, but naturally they were dupes from the first weekend. Ours was quite a team effort with 9 hams, K2YY, KJ6SDF, AA6XV, W6TCP, KG6NUB, W6RK, N7MH, AD6FP and AD6IW operating. Several others including KJ4QJA, W6MG, KG4UHM, N6DB, and more helped out with preparations, repairs and upgrades throughout the year.

W6XY operating position during the ARRL EME Contest

WD5AGO: Tommy's thomas.henderson@tulsacc.edu contest report – We worked 40 stations on 23 cm during the ARRL EME contest. We used my 3.1 m dish and not the 1 m horn - Hi. We are already planning for the SSB EME Contest. We will be operating again with a Horn in the SSB contest. This time the horn will be 16' long (25 dBi), about the same as a 5' to 6' dish, and we will be combining 2 of my amps for 500 W (a 5 dB stronger signal than the last time). I hope to generate some interest here at the school as SSB is easier to understand than CW. Next project after the SSB contest will be to learn how to start WSJT and keep the school system going with digital.

WW2R: Dave eme_ww2r@g4fre.com wants to remind everyone that he has relocated back to the UK and at least temporarily is QRT on EME. He notes that when in the USA that G4CCH on 23 cm was his 1st EME QSO on 12 Dec 2005. His last QSO was with K5GW on 6 cm on 21 Jul 2012. He made EME QSOs on 144, 432 (28 initials), 902 (1 initial), 1296 (130 initials and WAC), 2304 (52 initials and WAC), 3440 (25 initials) and 5760 (2 initials).

ZL4PLM: Simon gm4plm@hotmail.com has big plans for MW EME -- Work on the base for my new 3.8 m dish has been done. I will be mounting the dish shortly and hope to be starting tracking/NF tests on RX on 23 cm over the holidays. A 150 W SSPA for 9 cm has arrived and a 1 KW amp for 23 cm is expected to arrive in days. A 100 W SSPA for 6 cm is also in the post. Preamps are on the desk already. A 23 cm OK1DFC feed is ready, and I am just finishing a mounting system for this feed so that I will be able to interchange feeds quickly between 23, 9, 6 and 3 cm. 432 is waiting for welding to be completed on the tower – there has been some delay due to RFI issues with the 70 cm PA controller, which I think will need to be boxed into a screened case – to be done in Jan! The sad news is that I lost my complete 144 EME array in a windstorm this month - practically any month we can get storm force winds from the northwest off the Tasman. Living on the Canterbury Plains, the wind tears down slope off the alps and gets strong and very gusty. Sadly we encountered an unforecast NW windstorm and my tower was still fully extended. I was at work and unable to get home to drop the tower. I came home to a twisted pile of steel and aluminum - gut wrenching and I am sure my XYL wasn't happy at me moping round for some days licking my wounds! Given this disaster, I am very pleased I did NOT mount the 432 array on the same tower! A new 18 m tiltover/telescopic tower is on order for the new 144 array. 432 will still be on a separate mast. I am now focused on getting 23 and 9 cm going, and hope to give you all a new DXCC on 9 cm soon, and likely 23 cm for some too!

K2UYH: I a.katz@ieee.org, besides my contest effort reported under K1JT, was active on 15 Dec on 1296 and QSO'd at 1604 I1NDP (579/589) and 2230 VK2CBD (13DB/8DB) JT65C for mixed initial #426*. And on 20 Dec, I worked on 5760 at 2000 K5GW (559/559), 2013 LX1DB (589/579) for initial #12 and 2140 F1PYR (539/529). I was also QRV for the Dec ATP, which I will report upon in the next NL.

NETNEWS: **UN9L** is QRV on 70 cm EME with 4 x 21 el yagis and 150 W, and is looking for initials. **R0CQ** is new on 70 cm EME with 4 x 18 el yagis and 100 W from PN78ML. **UX0LL** is also now active on 70 cm EME with 2 x 17 el yagis and 50 W. **N1AXB** is working on the design of the mount for his 28' Kennedy dish. **PA2CHR** is a new station on 432 using one yagi and about 350 W. He was active during the contest. **RD3BA**, does anyone know if this is the same station as RD3DA. **EI9E** is now on 432 with 4 x 21 el yagis and 500 W. **WA3QPX** is running a lunar link PA and 8 x 9 WL yagis on 70 cm EME. **W5LUA** worked G3WDG on 6 cm. **KJ7OG** has 2 x 12 el M2 yagis on 432 EME, and plans to expand to 4 yagis and 500 W soon. **DJ8FR** is working on a 5 m dish. **SM6CKU** is now QRV on 13 cm and has worked W5LUA among others. **EA7/DK3NG** is working on a 2.5 m dish for 70 cm and above EME. **PA3DZL** QSO'd TI2AEB in Dec on 23 cm using JT65C. Jac will be on 9 and 6 cm soon. **OZ1HNE** is active on 432 EME. **KU8L** will have 1296 EME going in the spring.

FOR SALE: **DL0SHF** has the following measurement equipment for sale: HP8648C Synthesized Signal Generator 9 kHz – 3.2 GHz, HP8671B Synthesized CW Generator 2 - 18 GHz, HP8566B Spectrum Analyzer 100 Hz - 22 GHz, HP85685A RF Preselector, HP85650A Quasi Peakadapter, HP8563E Portable Spectrum Analyzer 9 kHz – 26.5 GHz, HP8591E Portable Spectrum Analyzer 9 kHz – 1.8 GHz with Preamp, HP3586C Selective Level meter, and HP5351B Microwavecounter 10 Hz – 26.5 GHz. All equipment is checked and maybe returned within 7 days, if not satisfied. If you are interested, contact Carsten (DL6LAU) carsten.esch@appello.de with your offer. Reasonable offers on a first come basis will get the unit(s). Please do not ask for price, just make an offer! **W1SMS and W1QJ** have taken over the operation of Lunar Links. **K1RQG's** estate has a Lunar Link 432 MHz amp for sale. We think it is worth $2000 provided the tubes are OK and it works. Condition to be determine by buyer with the understanding that if there should be any problem, we will refund part of the $2000. W1ITT is a reasonable guy. We just want to get rid of it and

not get rich. The money goes to Joe's wife, Pearl. It's at Joe's place in Maine for pickup or packing and shipping at buyers expense. Norm (W1ITT) is out swimming with the Dolphins in the south pacific somewhere and will be home soon. His email address is either wa1ivb@yahoo.com or wa1ivb@att.net. **N1AXB** needs about 600' of 1 5/8" and 1200' of 7/8" Heliax. If you can help, contact Larry at lgpignolet@aol.com. **N4QH** has dish kits for sale. See Lyle's ad at the end of this NL.

FINAL: Just about every report this month includes holiday wishes. Rather than repeat all of these, I have placed at the beginning of the NL one big greetings message from all of us sending in reports to the whole EME community.

VK7MO report on his 10 GHz EME Grid Square Tour across Australia follows.

W1QA has conducted a survey to determine which states are most needed. Tom found the top 10 most needed states in order of need on 70 cm were HI, ND, UT, AR, NV, VT, KY, MO, PA and SC, and on 23 cm were DE, AR, NE, SC, AL, MS, SD, VT, CT and KY. I am somewhat surprised by these results. Anyone needing PA on 70 cm and/or DE on 1296, please let me know. I am planning to put KY on 432 (and possibly also 1296) in the next few months.

It appears the end of 13 cm EME operation from SM, (see the last NL), has received at least a temporary reprieve. SM6CKU reports that the 13 cm special licenses for 2320 EME have been extended until 30 June.

The PI9CAM dish is back in place on its mount. I am told it will still be a while before they are fully in operation. For details of how the big dish was lifted back in place – see http://www.camras.nl/.

The Swedish EME meeting will be 25/26 May. See info on www.sm4ive.com.

Thanks to DL7APV for preparing the 2013 Lunar Calendar and to F5SE for creating the 2013 Moon Chart which are included at the end of this NL.

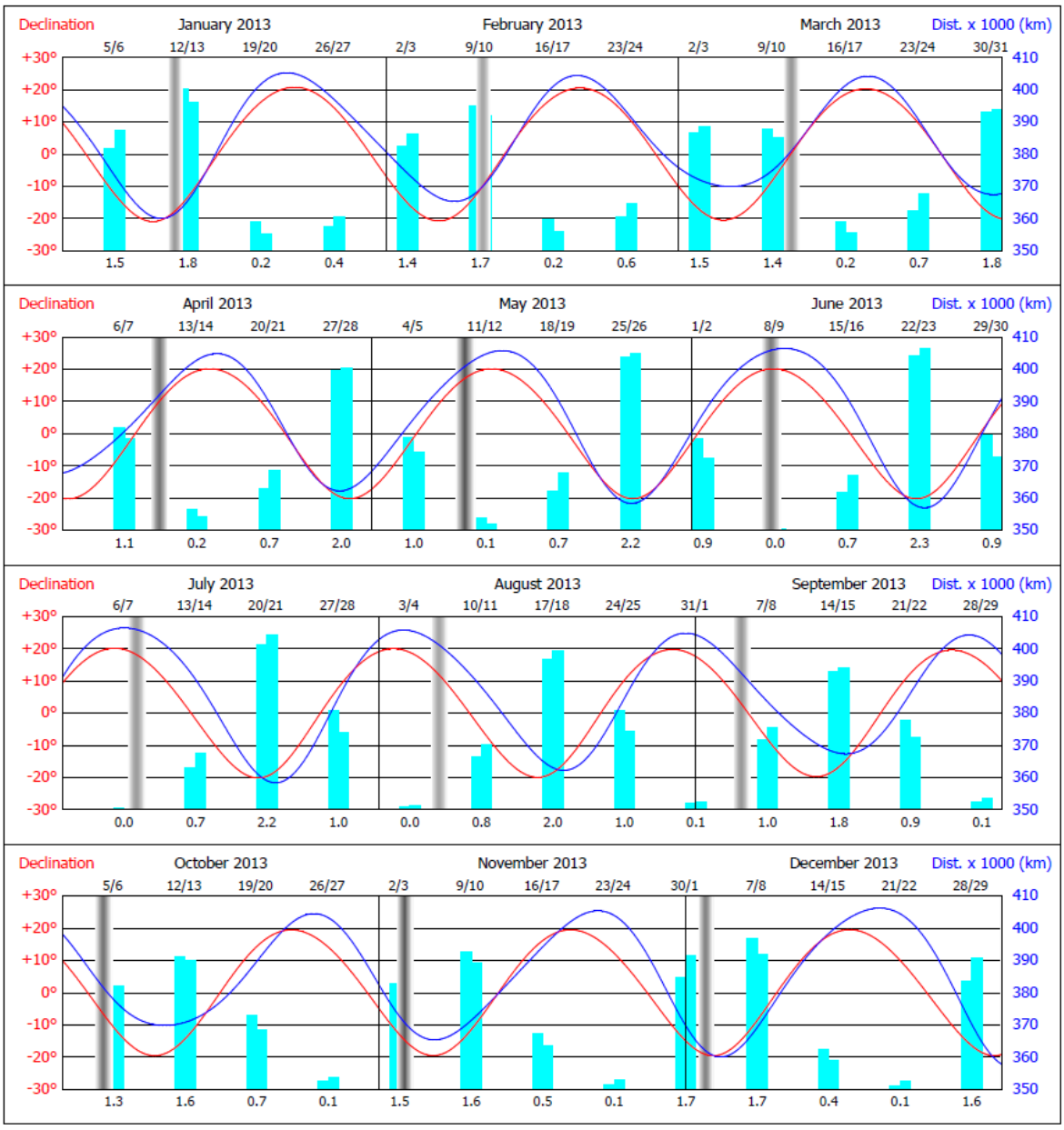
That about covers the news for this Moon cycle (~29 day). Please keep the reports and technical info coming. Have a health happy and prosperous New Year with lot of good EME. 73, Al – K2UYH

Lunar Weekend Calendar for 2013 (by DL7APV)

2400_Sat/ 0000 Sun	Decl/deg	Loss (dB)	Sun offset/°	Temp 432	libration	contest dates & meetings
Jan 5/6	-13,2	-0,48	82	30	+/-	
Jan 12/13	-13,8	-0,12	-18	30	-	
Jan 19/20	15,5	-1,76	-99	35	-	ARRL VHF Tropo
Jan 26/27	13,8	-1,55	-180	20	-	
Feb 2/3	-15,8	-0,52	99	35	+/-	
Feb 9/10	-11,5	-0,29	2	35	-	
Feb 16/17	16,8	-1,73	-80	35	-	Sat. 23cm ssb contest Sun.70cm ssb contest
Feb 23/24	11,3	-1,38	-160	15	+/-	
Mar 2/3	-18,0	-0,42	116	35	-	Eu VHF/UHF Tropo
Mar 9/10	-8,6	-0,56	21	25	+/-	
Mar 16/17	17,8	-1,74	-60	30	-	Dubus 2m & 70cm
Mar 23/24	8,7	-1,27	-141	20	+/-	
Mar 30/31	-19,6	-0,21	132	40	-	
Apr 6/7	-5,3	-0,83	39	25	+	Seigy meeting
Apr 13/14	18,6	-1,80	-41	35	-	Dubus 3cm & 1,2cm
Apr 20/21	6,1	-1,23	-120	20	-	ARI "NEW MODES"
Apr 27/28	-20,6	0,04	150	50	-	
May 4/5	-1,8	-1,00	57	25	++	Eu VHF/UHF Tropo
May 11/12	19,1	-1,89	-22	40	-	Dubus 23cm CW
May 18/19	3,3	-1,25	-101	20	+/-	Dubus 6cm CW Dayton Hamvention
May 25/26	-21,1	0,23	168	80	-	SM4IVE SM-EME meeting
June 1/2	1,5	-1,07	75	25	++	EU 23&up Tropo
June 8/9	19,3	-1,95	-4	45	-	ARRL VHF Tropo
June 15/16	0,4	-1,28	-81	20	+	Dubus 13cm CW
June 22/23	-21,0	0,28	-173	160	-	
June 29/30	4,6	-1,05	94	25	++	Ham Radio (DL) 9cm Activity weekend Dubus 9cm CW
July 6/7	18,9	-1,96	14	45	-	3cm Activity weekend

July 13/14	-2,5	-1,26	-63	25	+	
July_20/21	-20,4	0,19	-155	180	-	
July 27/28	7,2	-1,01	113	25	++	Dubus 2m Digi
Aug 3/4	18,1	-1,92	33	40	-	ARRL UHF Tropo 6cm Activity weekend
Aug 10/11	-5,6	-1,16	-45	30	+	ES-Tropo
Aug 17/18	-19,3	0,00	-137	120	-	LY-Tropo
Aug 24/25	9,6	-1,00	133	25	++	
Sept 0 /1	16,8	-1,87	51	30	-	
Sept 7/8	-8,7	-0,95	-26	30	++	Eu VHF Tropo
Sept 14/15	-17,4	-0,22	-120	50	-	Weinheim (DL) ARRL VHF Tropo
Sept 21/22	11,7	-1,08	153	30	++	ARI Contest CW/SSB
Sept 28/29	15,2	-1,82	71	25	-	ARRL EME uwave
Oct 5/6	-11,4	-0,69	-8	30	+	Eu UHF Tropo
Oct 12/13	-15,0	-0,37	-103	35	-	
Oct 19/20	13,7	-1,23	172	35	+	
Oct 26/27	13,4	-1,82	91	20	-	ARRL EME I
Nov 2/3	-13,7	-0,44	11	30	+	Eu VHF CW Tropo
Nov 9/10	-12,1	-0,39	-86	35	-	
Nov 16/17	15,6	-1,43	-169	35	-	ARRL EME II
Nov 23/24	11,5	-1,86	110	15	-	
Dec 0 /1	-15,6	-0,32	31	35	+/-	
Dec 7/8	-9,2	-0,29	-69	30	-	
Dec 14/15	17,1	-1,61	-151	30	-	
Dec 21/22	9,3	-1,88	130	20	-	
Dec 28/29	-17,1	-0,34	50	35	+/-	

Moon Ephemeris Overview for the Year 2013, by Franck F5SE



- Vertical blue bars show the overall "quality" of each week-end for EME. The higher the bar, the "better" the week-end.
- Figures below bars show expected signal improvement, in dB, referred to apogee path loss, for Sundays at 00:00 UTC.
- Full scale span: 2.4 dB. Scale step: 0.4 dB per division. 0 dB level = Band path loss figure at apogee, as quoted below:
- 144 MHz: 252.8 dB, 432 MHz: 262.3 dB, 1296 MHz: 271.8 dB, 2.3 GHz: 276.9 dB, 3.5 GHz: 280.4 dB, 5.7 GHz: 284.8 dB,
- 10.4 GHz: 289.9 dB, 24 GHz: 297.2 dB, 47 GHz: 303.0 dB. Data computed for an apogee around 406500 km.
- To get the week-end path loss on a given band, subtract to band apogee figure the value printed under the week-end bar.
- The shading pattern below shows how close the Sun is to the Moon, at any time - the darker, the closer.
- Shading is only visible around New Moon date, appearing as a vertical gray bar.

Gray Scale calibration — Sun to Moon Distance, in degrees

VK7MO: – 10 GHz EME Grid Square Tour across Australia

From mid November to mid December VK7MO took his portable 10 GHz system (Fig 1 and Fig 2) across Australia and activated some 25 grid squares (Fig 3) on EME, while travelling 16000 km from his home QTH in Tasmania. OK1KIR, W5LUA, VK3NX and VK3XPD participated, with OK1KIR completing QSO's at 22 grid squares. This success was achieved through using JT65c and GPS locking with automatic Doppler correction for both TX and RX so that the home stations only had to tune to a fixed frequency of 10368.225 MHz. The portable station uses a 77 cm dish and a DB6NT PA with around 45 watts to the feed. One surprise is that despite JT65c having only 10.8 Hz tone spacing it worked reliably with up to 170 Hz of spreading – presumably because the spread signal still has a peak and JT65c picks the peak for decoding.

Figure 1: Portable 77 cm dish

Figure 2: IC-910 and computer set up in the back of car – the small dish is for 24 GHz but was not used (may-be next trip).

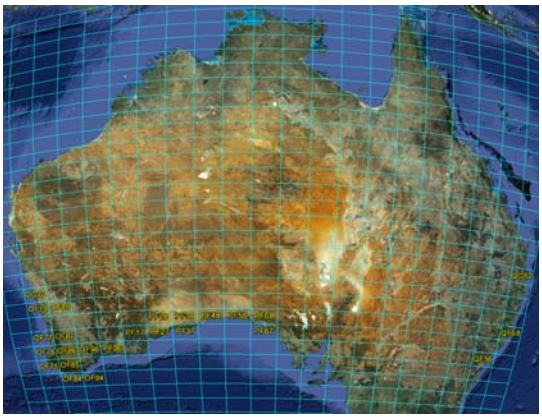


Figure 3: Grid squares at which EME QSOs were completed

Libration Spreading Limits for JT65c

While at Albany, OF84, a test was conducted with Alan VK3XPD (3 metre dish and 75 watts to the feed) to establish the limits of spreading at which JT65c decoding was possible with the following results (spreading is in the last column in Bold):

070459	0	-31	1.3	27	22	*	VK7MO VK3XPD QF22		0	**173Hz**
070859	0	-31	1.3	30	28	*	VK7MO VK3XPD -30		0	**175Hz**
071059	3	-29	1.3	32	40	*	VK7MO VK3XPD -30		0	**176Hz**
071259	0	-32	1.3	35	20	*	VK7MO VK3XPD R-30		0	**177Hz**
072259	0	-31	1.2	11	33	*	VK7MO VK3XPD R-30		0	**183Hz**
072459	0	-31	1.2	-3	38	*	VK7MO VK3XPD R-30	?	0	**189Hz**
073459	0	-32	1.3	30	36	*	VK7MO VK3XPD QF22	?	0	**191Hz**

This is a half hour period during which 15 transmissions were made by Alan and while only 7 or roughly half were decoded it does show that JT65c decoding is possible (albeit intermittently) with spreading of over 170 Hz and in one case there was a decode with spreading of 191 Hz. It is noted that Alan was also sending signal reports for much of this time indicating the he was also receiving my signal (77 cm dish and 45 watts to the feed). He reverted to sending his Grid locator when he could not decode the signal (last line above). Note that the signals show decodes at -31 dB and on two occasions at -32 dB. This is an artefact of the spreading of the signal as JT65c only measures signal to noise in a single 2.7 Hz bin. Another point to note is that WSJT which was designed for VHF, where spreading is low, does not at present allow the transmission of signal reports of less than -30 dB so we have adopted the practice of manually inserting -30 dB for any signal of -30 dB or below. It is expected K1JT, will resolve this issue in later versions of WSJT.

A similar test was conducted with OK1KIR (4.5 m dish and 45 watts to the feed) but with the added advantage of variable polarization. This resulted in 100% decodes at up to 175 Hz spreading.

EME from Inside a Motel Room

While at PF48 on the Nullarbor plains I arranged a sked with Al W5LUA for 4 am (local time) and went to sleep and put the alarm on. I did not want to set up the dish outside in case it was interfered with while I was asleep so I set it up inside the Motel room pointing through a glass window (Fig 4).

Figure 4: EME from within a Motel Room

Cold sky to termination was reduced from the normal 4 to 5 dB to only one dB due presumably due to absorption through the glass. Figure 5 shows a screen shot of the QSO at my end.

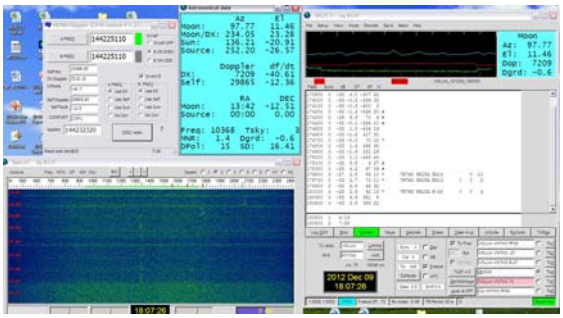


Figure 5: ScreenShot of QSO with W5LUA from within Motel Room

From the screen shot one can see at the top right hand corner the Doppler correction program. On the right hand side is the normal WSJT window that shows that I received W5LUA at -27 dB and he responded with R-26 meaning he received my report and gave me -26 dB. At the bottom left is the SpecJT window which at the bottom shows relatively strong signal at about 1340 Hz which is a 1270 Hz sync tone (in this case 70 Hz high in frequency) he is sending to allow me to align on the moon. I also transmit 1270 to start with until I am happy that I am aligned and then transmit a 1000 Hz tone to indicate I am ready to receive messages. The sync tone, of the messages received from W5LUA, also show up in the waterfall and I can centre the inverted green "T" on this. This allows me to accurately measure further single tone messages. In the second from the top period one can see a line under the red marker at 1770 Hz which represents a single tone 73 which can be easily read from the waterfall and in the last period is a tone at 2070 Hz which is a 2000 Hz tone plus the 70 Hz high error and which represents QRT. The advantage of the single tones is that all the energy is on one frequency and they give about 3.8 dB advantage which is particularly useful in completing a marginal QSOs.

Alignment of the Moon

One of the most difficult things in doing portable EME with a small dish is to align on the moon when it is not visible. A small dish only gives around 0.17 dB of moon noise so alignment on moon noise is not practical. Elevation alignment is not a problem as one can use an inclinometer but the problem is with Azimuth. Azimuth can be done if you have accurate GPS positions of both your location and a reference marker that is at least 500 meters away. But when operating from Motels one finds that generally one is obstructed and cannot see any distance away and even if one can one cannot see a marker at night. The only option then is to peak on the other station's signal as in the procedure outlined above for the W5LUA QSO from within a Motel room. Peaking on a weak -30 dB signal that has libration QSB is not all that satisfactory but is the best I have been able to come up with to date.

JT4 or JT65c

While the JT4 modes in WSJT were specifically designed to cope with spreading on microwave EME there is at present a bug in WSJT in that it gives the wrong Doppler when using the JT4 modes and thus I have not been able to compare the two modes using Doppler correction. So until this bug is resolved we cannot draw any conclusions as to the preferred mode for microwave EME.

CONCLUSION

While this is early days in my development of portable EME operations for 10 GHz it has shown the benefits of Doppler correction and what can be achieved. Certainly the results in being able to use JT65c with spreading of over 170 Hz are far more than I expected.

VE4MA's 5' offset dish made from ¼ 10' dish with dual dipole feed for 23 cm