432 AND ABOVE EME NEWS
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CONDITIONS: There were excellent conditions and high activity during this year's VK3UM Memorial1296 CW EME Contest sponsor by DUBUS/REF. OK2DL is at the top of the pack of the reported scores with a total of 90x84. His score is better than the top 2017 score and indicates that CW EME is far from dead. **The fun continues on 19/20 May during the DUBUS 6 cm EME CW Contest. The same weekend is also the ARI EME Trophy Contest –** see more details in FINAL section of this newsletter (NL). There were 2 dxpeditions in April. 3B8MB focused on 1296 and provided a whopping 94 initials as reported on in this NL. The Z66EME dxpedition planned operation on 432 thru 10 GHz but ran into trouble with its equipment. They provided 36 QSOs on 1296, but only had had minimal success on 70, 13, 3 and 6 cm and did not QRV on 3 cm – see their report near the end of this NL. Coming up are the EA6/HB9COG dxpedition to be active on 23, 13, 6 and 3 cm 13-24 May; and AA1KK's 23 cm dxpedition to RI on 14-16 June – reports follow for both in this NL. **The next 70 cm CW ATP (activity time period) is on 20 May 0900-1100 and 1830-2030.** This is the same weekend as the two EME contests are scheduled.

3B8MB 2.4 m dish used on 1296 from Mauritius

UPCOMING 70 CM & UP EME DXPEDITIONS (BY DATE)

EA6/HB9COG: Dan (HB9CRQ) dan@hb9q.ch and Sam (HB9CQG) send detailed information about their EA6 dxpedition -- The Q-Team, HB9COG and HB9CRQ will be active from Ibiza Island (JM08ov). We will be **QRV from 13 to 24 May** on 23, 13 (2320, 2304, 2400 and 2301.9), 6 and 3 cm (10368 and 10450). Sorry but the is no 9 cm allowed from EA6. The equipment will be 1.5 m HB dish with on 23 cm 100 W and LNA at cir-pol feed, 13 cm 90 W and LNA at cir-pol feed, 6 cm 80 W and LNA at cir-pol feed, and 3 cm 50 W and LNA at V-pol feed. We have rented a house on Ibiza Island with MR at approx 5-10 deg el and MS on the sea. We will have Internet access but bandwidth may be limited. During activity we'll be stand-by on the HB9Q logger of the active band. You may send e-mails anytime. We will monitor our in-basket several times a day. To help everyone to be QRV for EA6, we have planned our activity as follows: 12 May arrive and setup; 13 May 0414 to 1630 1296.090; 14 to 16 May off; 17 May 0645 to 2115 1296.090; 18 May 0745 to 2215 MR on 2301.990 (on request only), will QSY later to 2400.090 (on request only), later to 2320.090 and finally to 2304.090 (QSY will be announced on HB9Q logger); 19 May 0850 to 2300 5760.130 (trying not to interfere with EU Contest activity); 20 May 1000 to 0000 MR 10450.090 later to 10368.090 (QSY will be announced on HB9Q); and 21 to 24 May QRV on request only. 24 May will be our last day of activity. If you are not able to be QRV or work us during our announced activity days, you may ask before or during the dxpedition by e-mail and the logger for additional activity on any of the bands. We will do our best to accommodate your needs. On 25 May we will dismantle the station, pack-up and load the car. Departure is from Ibiza on 26 May. Now that WSJT-X 1.9 RC3 is available, we will use it on 23 and 13 cm for JT65C with Doppler Control ("Own Echo", in other words we listen on our own echo). On 6 and 3 cm we will use QRA64D (if necessary JT4F) including Doppler Control ("Constant Frequency On Moon" and if necessary "Full Doppler to DX Grid"). Hopefully most people can take advantage of automated Doppler control. On 6 and 3 cm it is a MUST for successful QRP operations. Although it is on the limit, we will work CW on all bands. However only with big-guns and after the pile-up on JT/QRA are worked. How big needs your station to be to work us? During our 3DA0MB activity the smallest stations worked had the following equipment: On 23 cm 2.35 m dish and 150 W; on 13 cm 2.4 m dish and 150 W with excellent signals both ways; on 6 cm 2.4 m dish and 30 W at the feed with excellent signals both ways; and on 3 cm 1.2 m dish and 40 W with excellent signals both ways! QSLs are only by direct including SAE to: HB9Q, P.O. Box 133, CH-5737 Menziken. If you wish to sponsor our activity, you are welcome to do so by using PayPal dan@hb9q.ch (please mention your call).

AA1KK: Bob (W1QA) writes that the team of NC1I, KA1QFE and W1QA will put Rhode Island back on 1296 EME as AA1KK in FN41. This is the same location as our 2016 70 cm operation. We'll have our 2.4 m dish with KL6M septum feed, G4DDK preamp and Kuhne SSPA with aprox 500 W at the feed. The QRG will be 1296.100 +/- QRM. (We will announce on-site if band conditions warrant us changing the frequency). AA1KK will TX first using JT65C and CW on request. Operation will be on **14 June from about 1400 to 2400, on 15 June from 1200 to 0130 and on 16 June from 1300 to 0215**. We may also operate for a few hours on Sunday 17 June on our moonrise (1400). However, if we feel we worked everyone on the band, we will break the station down early Sunday morning and not be on. As always, we will QSL 100% direct to your QRZ.COM address. If you are not on QRZ or would like your card sent elsewhere, please send us your postal info. Reply cards can be sent to NC1I's QRZ address or via the bureau to NC1I. Logs will also be uploaded to LotW. Because of the high declination and long moon pass, we may QRT when there is no activity. We will make announcements on the HB9Q logger. While all QSO's will be on random, if you have a small window with us or limited opportunity to get on (especially Asia/Pacific stations) please advise what times are good for you and we'll make sure we are available.

PQ0F: Hermann (DL2NUD) and Uwe (DG8NCO) will try again from Fernando de Noronha (HI36te) in Aug. The dxpedition plans to activate 2 m and 70, 23, 13, 9, 6 and 3 cm between 31 Aug and 13 Sept. All is still in the planning phase and could change. [Thanks to MMMonVHF for some of the material used in this report].

4U1ITU: Zdenek (OK1DFC) ok1dfc@seznam.cz writes that there 7 bands EME from the ITU on 432 thru 24 GHz on **22 Sept to 1 Oct** – The ITU will be moving to a new headquarters in near future and nobody knows if the new location will permit ham radio operation. Thus 2018 could be the last chance to work 4U1ITU including the microwave bands. I have received an official invitation to join the 4U1ITU team for EME operation. In cooperation with the 4U1ITU team (OM1AM, SV3SJ and OM3YTF) activity is planned on 7 bands. Our special permission agreement is from the OFCOM is for EME only and not valid for terrestrial operation! More details can be found at: http://www.ok1dfc.com/peditions/4u1itu/4u1itu_2018.htm and will be provided as they develop.

EME REPORTS

3B8MB: Giulio (IW3HVB) iw3hvb@gmail.com reports his and IZ3IBL, I3VFJ and IK3YBX's dxpedition to Mauritius was very successful -- After a year of preparation we were eager and ready on 20 April for our first 23 cm moonpass. We used a HB 2.4 m dish (the size was determined by the biggest rib we could fit inside a golf bag) with a 300 W HB SSPA (200 W on JT) and DDK LNA. The system performed beyond expectations and enabled us to complete 94 initials (117 QSOs) including 26 CW QSOs. I believe is one of if not the highest 1296 dxpedition QSO count. (We also made 181 contacts on 144). We managed to stay almost continuous QRV until 27 April except for a break on 24 April due to a tropical storm. We secured the dish under the patio roof, disassembled the feeder, and tied everything down possible. Our QSL design is ready; we should start sending them very soon. See www.iw3hvb.it for more info.

3B8MB Team: IW3HVB, IZ3IBL, I3VFJ and IK3YBX

DJ8FR: Jürgen DJ8FR@darc.de reports a very good VK3UM Memorial Contest with big activity on 23 cm – The first hour (beginning at 1100 with 20 degs EL, my limit) I made 12 QSOs, including a call from KL6M – almost half way around the globe! Then something went wrong. My noise level went up for moments, then normal again. I lost more than an hour searching for the cause without success. Despite the noise, I worked 44 stations on Saturday. Then more and more noise! On Sunday I had a constant high noise level, so no contest anymore. Connecting the preamp directly to the feed gave big sigs again; and I was reduced to an SWL. I finally found the relay protecting the preamp was the reason. Overall, I contacted 44 with KL6, VE6, W6, K5, W9, W4 and K2. So, I was not too disappointed.

DL6SH: Slawek dl6sh-eme@online.de had an outstanding time during the 23 cm VK3UM Contest -- I have worked 51 stations using CW. I was QRV only part time because of the very nice WX. The EME conditions were really great too, especially on Sunday. All the big signals on the band were very nice. I worked on Saturday: KL6M, SP6JLW, ES5PC, DL3EBJ, RA3EC, IW2FZR, HB9Q, DF2GB, OK2ULQ, DL7UDA, JA4BLC, OK2DL, IK1FJI, JH1KRC, LZ2US, UA4AAV, G4RGK, OH2DG, DF3RU, F6ETI, DJ8FR, IZ1DJP for an initial (#), K2UYH, LX1DB, K5SO (#) and N4PZ, and on Sunday UA3PTW, W4OP, S59DCD, SP6ITF, EA8DBM, K5DN (#), G4CCH, IK5VLS, ZS1LS, WA6PY, N8CQ, SP3XBO, DL1YMK, IK2MMB, K7CA (#), OZ6OL and WA9FWD for a total of 51x50. Out of the contest, I worked using JT65C Z66EME for new DXCC, BV3CE, 3B8MB new DXCC and AA7HC. My station consists of an 8 m HB dish with 500 W at feed. It was a great weekend!

DL7APV: Bernd dl7apv@gmx.de has his new 432 Super EME array ready to use – In the beginning of April I made myself the best birthday present! I made my first SWR and Sun noise tests of my new array. A partially broken finger slowed me down, but with the help of Astrid [Bernd's XYL]

the last two feed lines were added. The SWR measured 1.4 and the Sun noise 20 dB – not bad for my very first test. Then we were off on a 14 day boat holiday along the LA coast up to the North Cape and the Russian border. There was a still lot of snow, but it was a very nice trip with excellent food and wine. We also saw some minor northern lights. Back home, I used the last of my holidays to complete the system. DJ3FI send me a new preamp; and after trying some combinations with 1 and 2 preamps, I ended up with close to 22 dB of Sun noise. The 7/8" TX line has to be added. I now have some Ecoflex 15 cable with N connectors going to the array. This antenna is the result of nearly 10 years of planning. I only have some minor SWR optimization before the first QSO. I will do a presentation on it at EME2018 in Eegmond. It consists of 128 x 11el GTV70-11w yagis. They are based on a DG7YBN design, and should provide a gain of 33.5 dBd with a beam width of 1.8 degs horz. and 4 degs vert. I choose a "wide" version with 10 MHz bandwidth, which passed my rain test requirement.

DL7APV with new Super Array of 128 x 11 el yagis

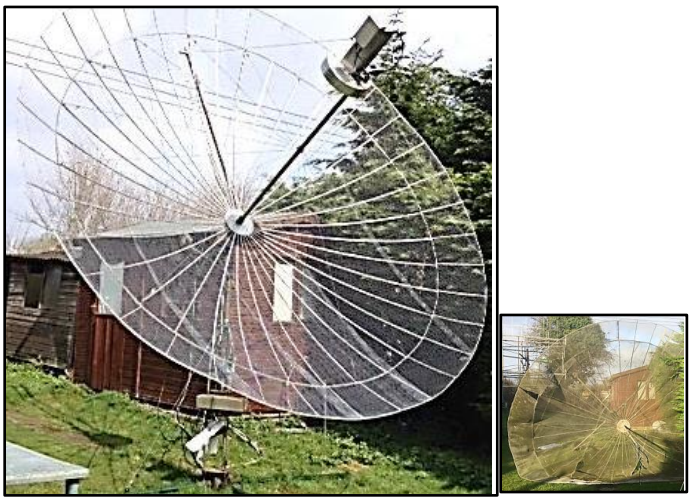
ES5PC: Viljo viljo.allik@estcube.eu reports on his 23 cm contest results – I found lots of good activity during the contest, but had trouble with strong wind on Saturday and lost several hours of contest time. On Sunday the WX was better, but soon after starting to operate my LNA failed. After some troubleshooting and LNA transistor replacement, it was operational again. The LNA actually failed because of a resistor failure in the protection relay driver circuit causing the relay to remain in the RX position. I worked a total of 79x75, 6 more stations than last year. There was lot of activity even during late night hours both days. Heard were OZ4MM, IK3COJ and SM7FWZ. I QSO'd on Saturday DL3EBJ, ES6FX, OK2ULQ, OH2DG, KL6M, DL6SH, DK3WG, G3LTF, JA4BLC, SP6JLW, HB9Q, EA8DBM, DF3RU, UA3PTW, OK2DL, DL7UDA, IK5VLS, LZ2US, OK1YK, DJ8FR, S53MM, JA6AHB, G4RGK, F5JWF, ON5RR, IK1FJI, F6ETI, F1PYR, RA3EC, ON5GS, PA3DZL, DL7YC, W4OP, K5SO, IK2MMB, SM2CEW, LX1DB, W7JM, LZ1DX, I1NDP, VE6TA, WA6PY, F5KUG, K2YY, S59DCD, N4PZ, G4CCH, K2UYH, W5LUA, K7CA, DF2GB, VE6BGT and N5BF, and on Sunday OK1CA, VK3NX, PI9CAM, JF3HUC, JH1KRC, JA8ERE, UA4AAV, DL1YMK, LA3EQ, OZ6OL, SP3XBO, IW2FZR, ZS1LS, ES6RQ, 3B8MB, N8CQ, NC1I, OK1DFC, VA7MM, WA9FWD, DJ3JJ, VE4MA, RA2FGG, K5DN, SP6ITF and PA0SSB.

F6ETI: Philippe f6eti@wanadoo.fr writes on his April EME: I participated in the 1296 EME Contest and ended with a total of 33x30. All QSOs were by CW. A vital part of this contest is its human and friendly soul, I believe made possible by the use of CW. Operators take the time to say hello by name… Peter, Howard, Al, Philippe… Happy to QSO, TU, 73, CUL, GL... I worked 23 the first pass on Saturday - good activity, and 10 only on Sunday, which was much calmer in the afternoon. It was not until the US/NA wakes up that the NA stations are in pile-up with EU! 19 of my 33 QSOs were made in response to my CQ. The garden was not free of weeds! The station was installed (at F6KLO) so we could not see the moon until it was > 20 degs of EL; and to the west, we could not operate below 40 degs of EL (245 degs AZ). This did not allow us to QSO VK, ZL and the NA stations once the pile-ups calmed down Seven new stations (IK1FJI, DL1YMK, G4RKG, LZ1DX, PA3DZL, W4OP and K5SO) were worked to bring us to initial #69 (since Oct 2015) with this station. Our result were worse than in 2017. We used a 3 m dish, 300 W FB DF9IC SSPA, G4DDK 0.26 dB NF VLNA, SG Labs 144/1296 transverter, IC-202 on TX, and Transfox SDR & HDSDR on RX. An EGIS positioner and F1EHN software were used for tracking. We hope to be QRV again in the ARI Trophy EME Contest on 19/20 May.

G3LTF: Peter's g3ltf@btinternet.com April EME report -- I was active on 23 cm the night before the VK3UM Memorial Contest, 20 April, and worked on CW unless otherwise noted, ON5GS also on SSB, IK3FJI, PA2DW, OZ6OL, RA3EC and K5SO. I was getting good echoes on 21 April at 4 degs el thanks to the high dec. I then worked OH2DG, OK2DL, JA4BLC, RA3EC, SP6JLW, KL6M, F5KUG, DK3WG, DL3EBJ, ES5PC, UA3PTW, OK1CA, IW2FZR, ON5GS, JH1KRC, OK1YK, LZ1DX, G4RGK, ON5RR, EA8DBM, DL1YMK, JA6AHB, F1PYR, S53MM, LA3EQ, PA3DZL, IK5VLS, IK1FJI, LZ2US, DJ8FR, F6ETI, F5JWF, ES6FX, DL6SH, OK1DFC, F6KRK, DL7YC, SM2CEW, OK2ULQ, DL7UDA, OZ6OL, VE6TA, WA9FWD, W4OP, K2YY, N4PZ, DF2GB, DL8FBD for initial #446, K5SO and W5LUA, and on 22 April JA8ERE, VK3NX, HB9Q, SM7FWZ, 3B8MB #447 and DXCC 70 (not counted in contest as I used the logger to make sure I got Giulio in the log), PI9CAM on SSB, JF3HUC, S59DCD, DF3RU, UA4AAV, I1NDP, SP3XBO, DF2VJ, NC1I, VE4MA, SP6ITF, K2UYH, K7CA # 448, IK2MMB, WA6PY, G4CCH, PA2DW, DJ3JJ, PA0SSB, N8CQ, N5BF and VA7MM. Heard but never found calling a CQ were VE6BGT, JR4AEP, PA0PLY, OK2PE, OH3MCK and K5DN. My total was 76x70. From reading reports, I think there must have been 90 or so active. It was very nice to exchange a few words with so many old friends. Still on 1296, I worked on 23 April G3WDG (569) #449 with 40 W to 3 m dish -also made some cross-pol measurements, on 27 April OK2PE #450 - a nice signal from 300 W to 1.9 m dish, and on 28 April SP6ITF who is a regular on random CW. I tried on 9 cm CW, on 26 April with G4BAO. Although he copied me OK, I couldn't find much from his 1.9 m dish and 30 W. I am doing some checks on my 9 cm transverter in case there is some noise form an unknown source. I am very much looking forward to the 6 cm activity weekend and the 6 cm EU/DUBUS Contest.

G4BAO: John john@g4bao.com was only QRV briefly in the 1296 Memorial Contest – I only came on for a couple of

hours on Sunday as 23 cm is HARD for me as you'd expect with my small system (250 W to a 1.9 m dish). I saw lots of activity on the waterfall, but most was below my threshold of hearing for CW. I'm pleased to say that what I did work was all "old school" search and pounce, no Internet or skeds. I worked a handful of regular big guns including one initial with K5SO (#). I missed KL6M who I have been looking for. I have just installed my new 9cm system in my 1.9 m dish and apart from some feed tweaking, am good to go. I'm looking for my first QSO on what will be my EME band number 5. I have approx 30 W to an SM6FHZ septum feed that was beautifully made for me by PA7JB, and a 0.4 dB NF G4DDK VLNA9.



G4RGK rebuilt dish – damaged dish shown at right

G4RGK: Dave zen70432@zen.co.uk has had some health and other issues that limited his activity -- I have not been too active during Feb/Mar due to disc problems in my back, but I was able to stay in the chair long enough to work on 70 cm TD9CHR and CR2EME for new DXCC during March. As my back recovered, I made it a goal to rebuild my dish that was destroyed by winter storms in time for the VK3UM 1296 Memorial Contest in April. I just managed to get it finished a few days before the event. But the contest didn't start off well here; just before MR on Saturday my azimuth drive motor failed and was drawing 25 A. I took the motor apart (it's a Pride Electric wheelchair drive unit) consisting of a 24 V DC permanent magnet motor and gearbox. One of the Magnets had become dislodged and was rubbing on the armature. I managed to get it going again, but it failed again an hour later. Thinking that I was not going to be able to fix it, I then tried to operate by manually turning the dish; I made a few QSOs, but it was painful trying reposition the dish and operate the radio. So around 1600, I took the motor off the dish again and dismantled it. This time all four of the magnets had come loose and were stuck to the Armature. Saturday evening, I cleaned everything up and *Araldited* the magnets back in the stator and left it to set over night. Sunday morning, I rebuilt the motor. This time the fix proved to be a complete cure. The azimuth drive is now functioning as it should. I heard many new stations who just seemed to be working the "big guns", but there were also a lot of regulars missing. I finished up with 36x34 in the log, mainly worked on Sunday as follows: DL6SH, UA3PTW, SP6JLW, ES5PC, G3LTF, LZ2US, OK2DL, EA8DBM, S53MM, PA3DZL, OK1CA, ON5GS, OH2DG, OK1DFC, K5SO, LX1DB, DL3EBJ, I1NDP, DL1YMK, PI9CAM, OK2ULQ, IK1FJI, LZ1DX, F6ETI, IK5VLS, S59DCD, SM2CEW, K2UYH, NC1I, SP3XBO, WA6PY, OZ6OL, N4PZ, W4OP, DF3RU and VE6TA. Outside the contest I QSO'd 3B8MB and Z66EME for new DXCC on 23 cm using JT65C.

IK1FJI: Valter valter_dls@yahoo.it sends news on his recent activity – I was QRV most of the time and had great fun in the 1296 Memorial Contest. I scored 52x48 with lots of initials: DJ9FR #91, IW2FZR #92, LZ2US #93, EA8DBM #94, F6ETI #95, W4OP #96, OH3DG #97, DL1YMK #98, JH1KRC #99, G4RGK #100, DL7YC #101, OZ6OL #102, S53MM #103, S59DCD #104 and PA0SSB #105. At the end I was lucky and worked KL6M. Out of the contest (due to logger sked) I worked 3B8MB (M/O) #106 and new DXCC using CW. Before contest I QSO'd G4YTL (549/559), F1PYR (529/549) #89, PA2DW (549/559), RA3EC (569/579), G3LTF (569/579) and LA3EQ (429/539) #90. My station is a 3.2 m dish with a septum feed, 900 W @ feed, <0.3 dB NF LNA, EA4TX tracking and TS-2000. On 432 I worked using JT65B DK3WG for my digital initial {#7} with a single 7.7 wl yagi and 180 W.

IK2RTI: Gianfranco ik2rti@gmail.com reports on his latest activity – On 24 GHz I worked on 24 Feb OZ1LPR (O/O) for the first OZ-I 1.25 cm QSO, and on 19 April OH2DG (O/O) for first OH-I 1.25 cm QSO, and 30 minutes earlier on random DL7YC (O/O). I am using on 24 GHz an improved feed, which provides a sun noise gain of about 0.6/0.7 dB compared to my previous version. In the 13 cm EU/DUBUS Contest, I was only QRV a few hours on 24 March and added initials with OH1LRY, ON5RR, and N4PZ, but missed OK2ULQ. Unfortunately, I was not able to participate in the 23 cm contest because of family commitments, but I plan to be QRV for the 6 cm contest.

IK2RTI's new improved 1.25 cm feed

JA4BLC: Yoshiro's ja4blc@web-sanin.co.jp April report -- In the 23 cm Memorial CW Contest, I worked on 22/23 April 32 stations, which was a bit less than last year. I QSO'd K2UYH, K5SO, WA9FWD, VE6TA, JA6AHB, JH1KRC, UA3PTW, OH2DG, ES6FX for an initial (#), OK2DL, RA3EC, OZ6OL, G4CCH, G3LTF, KL6M, IW2FZR, DL3EBJ, SP6JLW, DJ8FR, ES5PC, OK1YK, OK1CA, LZ2US, DL6SH, ON5GS (#), EA8DBM (#), OK1DFC, WA6PY, VK3NX, JA8ERE, OK2ULQ and S53MM for a

score of 32x29. On 6 cm, I worked on 14 April JA8ERE (569/559) and partial UR5LX (O/O) but no R, on 16 April UR5LX (O/O) #47, on 19 JA6XED (569/559) and JF3HUC (559/569), and on 25 April JA6XED (569/569) and JA1WQF (569/569). On 3 cm, I worked on 20 April JA8ERE (569/559) and partial JA1WQF (O/-) when he used 1.2 m prime focus dish and 47 W SSPA, on 23 April JA1WQF (O/O), and on 28 April JA8ERE (559/559).

JH1KRC: Mike jh1krc@syd.odn.ne.jp is QRV again on 1296 with a big signal -- After many troubles last year, my station and antenna is performing well again. I really enjoyed the recent 1296 contest. Activity was great! I had 34 QSOs with 8 initials including K5SO, VA7MM, VE6BGT, N6OVP, ON5GS, EA8DBM, IK1FJI and S59DCD. K5SO had an especially booming echo. It was a great pleasure to work Joe for an initial as I had visited him before the Dallas EME Conference. Over the years many trees have grown up around my shack. My Moon window now has a lower limit about 5 degs higher than last year. It caused me to lose about 1.5 hours of operating time on both moonrise and moonset. Fortunately, the cellphone tower about 300 m away to the south, does not appear to degrade my RX anymore. A sharp resonated input of the LNA and a sharp BPF at the output works very fine. I will send QSLs for the initials and to anyone needing my QSL.

KA1GT: Bob ka1gt@hotmail.com was not on for the 23 cm CW contest but was QRV in April -- I'm now up to mixed initial #26* on 1296 including G4FUF who was only running 2 x 49 el yagis. So I feel my 2.4 m dish and 70 W is performing well. I'm currently working on more power and locating the amplifier at the dish, which will give me an extra 2 dB of signal. I'm playing with a square to circular flare on my OK1DFC septum feed to try to get better illumination of my dish's 0.45 f/D. The plan is to have more power by the end of April. If anyone needs Maine on 1296, I'm happy to set up skeds.

KA1GT's 2.4 m dish's rising Moon shot from Main

KL7UW: Ed kl7uw@acsalaska.net updates us on his plans for 23 cm and other bands -- I have received a new 600 W W6PQL SSPA (pallet on heat sink with N connectors). Construction of a chassis to cover the PCB and mount coax connectors and dc feed-thrus is pending. I made a major rework of my PSU box and am now wired for two 28 V-18A Astron PSUs for the dish AZ-EL system and my 1296 10 W driver. A new PS box is under construction to hold a 240 V distribution box and the new HP 50 V – 50 A PS required for the 600 W 1296 PA. I still need to replace my LNA box, repair the elevation actuator mount, replace two azimuth carriage wheels, and finish wiring F1EHN Autotrack PCB for interface to my VE1ALQ digital encoder boards. (I also have a long yagi for 6 m EME to get mounted). I am hoping to have 1296 QRV before the end of May. I am planning to have my 3 cm system in operation in the fall as we will be on extended travel this summer.

LA3EQ: Jan j-lustru@online.no reports on his 1296 contest weekend from (JO28xj) – I worked using CW unless noted on 21 April OK1CA, G3LTF, OK2DL, OK1DFC, UA3PTW and SP6JLW, and on 22 April OK1CA (DUP), ES5PC, G4CCH, PI9CAM, I1NDP, LZ2Us, HB9Q (on JT65C) and OK2DL for a contest total of 12x11. My station was a 2.3 m mesh dish with a septum feed, 250 W SSPA, G4DDK 0.25 dB NF LNA and a TS-2000X.

LA3EQ 2.3 m dish

N5BF: Courtney's courtney.duncan.n5bf@gmail.com April EME report follows -- In early April, I lowered the EME tower to replace a piece of inferior E-Bay coax in the TX path that kept filling with water on the rare occasions when it rained here. During descent, the rope in the lifting system broke and the whole assembly crashed the last 5 or 6' to the ground. Fortunately, thanks to the "parked for descent" orientation and configuration all damage and injuries were minor and "easily" repaired, but the home-brew lifting design originally anticipating about 1/2 or 1/3 the mass of the entire system was wholly inadequate to the job. And the rope was under-rated and much more weathered than I realized. The entire thing has now been re-engineered from a safety-first mindset and is back on the air. A couple of weeks later I made my two "late in the pass for EU" appearances in the 23 cm CW Contest, finishing with a score of 14x14 including initials with K5SO (589/539) for #122 and the State of NM, and DL3EBJ (549/559) #123; plus another dozen old friends including KL6M, K2UYH, OK2DL, WA6PY, SP6ILW, VE6TA, ES5PC, N4PZ, UA3PTW, G3LTF, OK1CA, and NC1I. Also worked outside of the contest using JT65C was G3WDG (28DB/10DB) #121.

NC1I: Frank frank@NC1I.COM sends news on his recent Moon activity -- Congratulations and thanks to both the 3B8MB and Z66EME groups for their successful dxpeditions! I was not able to spend as much time on the air in April as I would have liked but did manage to add 3 new countries on 1296 and several initials on both 1296 and 432. Both my initials on 432 were first ever EME QSOs. I QSO'd on 432 starting on 20 April K5DOG, G3LGR, and DL7APV (great signals with his new array!), on 21 April DL8DAU, PA2CHR (excellent signals from Chris with his single 30 el yagi and 300 W), UT6UG, UT5DL, RT6C (his first ever EME QSO with 1 x 23 el yagi and < 15 W at the feed point), SM5EPO, DH9OK (his first ever EME QSO with 1 x 9 el yagi and 60 W) and IK2OFO, and on 22 April G3LGR, G6HKS, and R7MU. All 432 QSO's this month were on JT65B. On 1296, I worked starting on 20 April F1RJ (JT), DF2GB (JT), RA3EC (CW), and IK5EHI (JT), on 21 April VE6TA (CW), K7CA (CW), K5SO (CW), 3B8MB (JT), PA3DZL (CW), ON5RR (CW), DK3WG (CW), LZ2US (CW), IK1FJI (CW), UA3PTW (CW), DL3EBJ (CW), LZ1DX (CW), F5KUG (CW) and 4X1AJ (JT), and on 22 April Z66EME (JT), EA8DBM (CW), ES6FX (CW), S53MM (CW), SP6ITF (CW), IK5VLS (CW), K2UYH (CW), W4OP (CW), OH2DG (CW), OK1CA (CW), DL1YMK (CW), OK2DL (CW), G4RGK (CW), ES5PC (CW), G4CCH (CW), IK2MBB (CW), G3LTF (CW), KL6M (CW), W5 LUA (CW) and N5BJ (CW). I had to QRT for a few hours after my QSO with G3LTF and apologize to the many stations that were still calling. I did get back on for the last 20 minutes of the contest and added three more stations on CW. I spent less than three hours on during the contest and ended with 31 QSOs. We had planned on repairing my 432 polarity rotation system on 29 April and then again on 6 May, but bad WX both days prevented it from happening. We have rescheduled the work for 12 May. If the weather is not good on that day, it will likely be June before the repairs get done. I should be active on both 432 and 1296 in May, but in June we will be operating 1296 from RI using the call AA1KK and operation from home will be extremely limited.

OK1CA: Franta strihavka@upcmail.cz was active in the VK3UM Memorial Contest in April -- I prepared my rig for 23 cm EME on Friday morning 20 April in anticipation of the 3B8MB dxpedition. When they came on the air around midday, I very easily worked them using JT65C (13DB/13DB). I remained QRV on 23 cm using JT65C to add initials with BV3CE, G5DML, RU4HU, SM3KPX and UA9FA for digital initial {#46}. I was QRV only one half of my Saturday window during the 23 cm VK3UM Contest. I made 39 QSOs. My nicest QSO was with 3B8MB on CW random. I continued at Sunday and my overall result in Contest is 77x67. My initials were DL7UDA, 3B8MB, DF2GB, PA0PLY, OK2PE and K7CA to bring me to #343. I also worked outside of the contest initials using JT65C with VK2FLR, VK2JDS and the Z66EME {#49} on Sunday.

OK1KIR: Vlada (OK1DAK) vlada.masek@volny.cz and Tonda (OK1DAI) send news on their groups April activity – Despite many distractions, we QSO'd on 23 cm using JT65C on 20 April at 1602 3B8MB (12DB/11DB) for digital initial {#297}, a new DXCC and LH field, 1610 W2HRO (13DB/5DB) {#298}, 1636 RU4HU (11DB/8DB) and 1704 RA2FGG (11DB/8DB) {#299}. We also tested with K7ULS in UT who was running a single yagi. We were using our cir pol feed. Mike heard us very well (19DB), but we were not able to find a trace of his signal. He had a 60 W SSPA, but not at his yagis and was not sure of his actual output power. We tried again with our rotatable LP feed on 21 April, but still could not find his signal. Mike has succeeded in making 3 QSOs and used only 10 W for 2 of them. We added on 1296 on 21 April at 1151 G3WDG (16DB/1DB) {#300}, 1328 BV3CE (18DB/18DB) {#301} and 1550 3B8MB (12DB/12DB), and on 22 April at 1031 VK2FLR (17DB/5DB) {#302}, 1528 UA1CCU (18DB/19DB) and at 1548 Z66EME (17DB/O) {#303} for the first Z6-OK QSO on 23 cm. With CW on 1296, we worked on 21 April at 1115 KL6M (569/579), 1151 G3WDG (O/O) using only a 3 m dish and 40 W and 1226 3B8MB (O/O) for #428. On 24 GHz, tests with 9A5AA required three trials to succeed. We made it with Dragan on CW after he improved the drive power to his TWTA, on 23 April at 2200 (O/O) for initial #25 and the first 9A-OK QSO on the 1.25 cm band. He used a Prodelin 2.4 m offset dish, homemade LNA and a TWTA with an estimates output power of 15 ~ 20 W. On 24 April, Hermann in Z6 was not able to operate as planned 13 cm because of bad WX (wind storms). Instead of Z6, we worked at 2104 with JT65C K2UYH (12DB/1DB) {#54}. During repeated 13 cm operation on 27 April we heard Z66EME (16DB) and were heard (18DB) but did not complete a QSO because of the failure of Hermann's13 cm transverter. On 25 worked on 9 cm using JT65C at 1406 Z66EME (16DB/O) for digital initial {#28} and the first Z6-OK 9 cm QSO. Later were added at 1725 G4BAO (16DB/17DB) {#29}. On 26 April on 6 cm we heard Z66EME (12 DB), but Hermann suffered from terrible WiFi QRM and only heard HB9Q (28DB). Nobody else was able to brake through WiFi barrier and work Hermann. In meantime we worked on CW at 1824 UR5LX (O/O) for 6 cm initial #103.

OK1TEH: Matej ok1teh@seznam.cz is considering making a summer EME dxpedition to Slovakia in July. He would probably operate with the OM3RRC club from (JN99fc) on 70 cm with enough power, short cable, masthead LNA and long 38 el M2 yagi for both JT65B & CW operation. More info will be announced in the next NL (and MoonNet).

OK1YK: Mira ok1yk@volny.cz writes about his participation in the 23 cm EME Memorial Contest -- I knew about the 3B8MB dxpedition, so I installed my feed for 23 cm for first time since the fall. I was pleased everything worked great and soon after they appeared on the band had an initial and new DXCC in the log. On Saturday on 19 May, we had a beautiful summer weather and contest conditions seemed better than average. I tried to enjoy the Sun and operate the contest. I gave out points and enjoyed the high CW traffic. But the activity was not that high; I missed a lot of stations that are usually on. On Sunday, the beautiful weather continued, so it was difficult to choose between continuing the contest and cycling around the area. The contest won… and my XYL was not home, so I was free to contest without any interruption, Hi. My QSO list grew slowly, so I was glad to add KL6M for an initial. Unfortunately, some of the JA stations had difficulty with my call. I guess I need more power as I always seem to hear

more than I work. A nice experience was SSB contacts with HB9Q and PI9CAM. [Translated by OK1TEH].

OK2DL: Marek ok2dl@seznam.cz wrote in his blog about his activity in DUBUS VK3UM Memorial Contest – I repaired a failed PE1RKI module in my SSPA on the Friday night right before the contest, and was ready to start at moonrise on Saturday. Start was at 10:00 local time, so for a change, I was able to get plenty of sleep. I did have problems with the warm WX on Saturday. The Sun was shining and kept my feed mounted SSPA so warm that the temperature of the heatsink was over 30 degs C. Due to the overheating of my PA, my power output dropped to below 500 W. I was not sure that it would survive the contest – now need to check it out. On Sunday, when I was beaming the dish to the east, the antenna was near the Sun, and I and decided to check Sun noise. It was clearly below peak! I discovered the clock on the Moon tracker was 5 minutes slow! After correcting the time, it was different "music"; and because the wind started to blow a bit and cool my SSPA, I had more TX power too. On Saturday I made 70 contacts and on Sunday 20, a total of 90x84. I also added 4 initials. In the log are UA3PTW, OH2DG, JA4BLC, RA3EC, 3B8MB, OZ6OL, SP6JLW, G3LTF, JA8IAD, IW2FZR, OK2ULQ, KL6M, DJ8FR, DL3EBJ, OK1CA, ON5GS, IK1FJI, IK5VLS, ES6FX, JA6AHB, EA8DBM, UA4AAV, IZ1AEM, LZ2US, S59DCD, G4RGK, ON5RR, DF2GB, LA3EQ, F6ETI, PA3DZL, DK3WG, OK1DFC, F5KUG, F6KRK, SM2CEW, HB9Q, LZ1DX, IK2MMB, IK3COJ, LX1DB, K2UYH, VE6TA, G4CCH, VA7MM, N8CQ, HB9BCD, I1NDP, K5SO, N4PZ, K2YY, DJ3JJ, DL8FBD, RA2FGG, WA6PY N5BF K7CA W5LUA VK3NX JR4AEP JA8ERE PI9CAM, JF3HUC, PA0PLY, SP3XBO, JH1KRC, DL7YC, SM7FWZ, F5JWF, ZS1LS, SP6ITF, ON7FLY, NC1I, PA0SSB, VE4MA, G4BAO and PA2DW Compared to last year, there were more stations active. Outside of the contest I added using JT65C BV3CE, Z66EME and 3B8MB (also worked on CW in the contest). [Translated by OK1TEH].

OK2ULQ: Peter ok2ulq@seznam.cz enjoyed the 1296 EME contest too -- The incredibly warm weather was a great pleasure during the VK3UM Memorial Contest. I started by successfully decoding the 3B8MB dxpedition without any problem. Unfortunately, the WSJT failed to TX and I did not find the error, so I switch to CW and worked the contest. The first window brought me 33 QSOs and the second 12 QSOs for a total of 45. The activity and conditions were excellent. A great bonus was the initials! I very much enjoyed adding initials with ON5GS, F1PYR, ON5RR, K5SO, VK3NX, JA8ERE and SM7FWZ. [Translated by OK1TEH].

ON5GS: Dirk dirk.reyners@telenet.be reports on his participation in 23 cm EME Memorial Contest -- Another very nice DUBUS Contest is in the log with lots of activity! I only operated one complete moonpass on Saturday. Because of beautiful WX, I setup the station on a garden table under an umbrella next to my bigger 6 m “umbrella”. I tested my new 400 W SSPA. All went well the first 4 hours; then I noticed an unbalance in the high power coupler, which led me to decide not to risk the PA. I continued with only one 200 W PA module to 15m long ecoflex10 cable. This is why my signal was so weak in the evening, :-(. On Sunday there was a lot of wind and I had a conflict with a band rehearsal. So, I took everything back inside and was not QRV. 35 stations (x33 multi.) were worked on random without any computer or HB9Q chat, just a straight CW key, IC821 and LZ5HP transverter on the garden table. QSO’d were OH2DG, OK1CA, UA3PTW, DJ8FR, DF3RU, OK2DL, OK2ULQ, SP6JLW, G3LTF, DL1YMK, JH1KRC, RA3EC, JA4BLC, DL3EBJ, IK1FJI, UA4AAV, S53MM, PA3DZL, ON5RR, EA8DBM, IW2FZR, LZ2US, G4RGK, DL6SH, F1PYR, OK1DFC, ES5PC, LZ1DX, HB9Q, IK5VLS, I1NDP, W4OP, LX1DB on SSB, N4PZ and K5SO. Thanks to all competitors for wonderful contest. A movie from the contest can be seen at https://www.youtube.com/watch?v=qEfvFbx87do.

OZ4MM: Stig gsvestergaard@gmail.com had little time to operate the 1296 EME Contest – I am very sorry to report NO contest QSOs at all this year due to conflicting commitments. Nevertheless, I did work both the 3B8MB and Z66EME dxpeditions on 1296; both had great signals, specially 3B8MB (559) on CW. I did not catch Z66EME on 13 cm because of high winds. I hope to be more activity over the summer.

PA0PLY: Jan pa0ply@pa0ply.nl reports on his dish repairs -- Two months ago, my dish was flipped over by a wind gust of 130 km/hr. I used a 1,500 kg slab of concrete to fix the dish down properly. It is now back in place and calibrated. The good news is the work was finished before the VK3UM Memorial/DUBUS 23 cm CW Contest. The tracking worked very well in contradiction to my past experience. I used MAP65 to help locate the many active stations in the lower section of the band. Due to my rusty CW, I was not able decode everyone I could see/hear. OK2DL had an easy to copy signal. LZ2US gave me many QRZs. I have concluded that 150 W is not enough with a 3 m dish. Fortunately, I have a 300 W version ready to upgrade my station. On 25 April I completed 1296 WAC thanks to ZS6JON. Since my house blocks the Moon to the south, time was quite limited. On top of this, I started a CW QSO with JH1KRC just before the sked. I learned later that Mike doesn't have an Internet connection in his shack and we agreed on a 067 freq. I saw his signal on MAP65 immediately, but before copying all his information, Mike disappeared. Luckily, I found him again on 020, but just before my sked with John; and we were able to complete quickly. ZS6JON was (19DB) on JT65C to give me my WAC. Regarding on the development of a readily available 24 GHz LNA, Ron, DU3T is working to have 10 pieces available at the EME2018. The pilot unit has been completed, but there are a few issues to be solved. We have only a few 10 GHz LNAs left from the last and final batch. I'll bring these also to the EME2018 for those who are interested and want to save on shipping costs.

PA3DZL: Jac pa3dzl@ziggo.nl has been making noise on 23, 13, 9 and 6 cm EME lately -- I was QRV during the 23 cm memorial contest and made a score of 37x34. There was very nice activity with great signals! I worked of course all on CW S53MM, ES6FX, ON5GS, RA3EC, SP6JLW,

F1PYR, OK1CA, UA3PTW, G3LTF, DJ8FR, G4RGK, OH2DG, OK2DL, OK2ULQ, DL3EBJ, OK1YK, HB9Q, SM2CEW, ES5PC, NC1I, LZ2US, IK1FJI, F5KUG, K2UYH, W4OP, KL6M, EA8DBM, PI9CAM, I1NDP, LZ1DX, OK1DFC, SM7FWZ, S59DCD, IK2MMB, OZ6OL, F1ETI for an initial (*) and PA2DW. Using JT65C, I added on 23 cm on 20 April 3B8MB for a new DXCC, EA8DBM, RU4HU for digital initial {#}, LA3EQ, W2LPL {#} and PE1LWT, and on 22 April Z66EME for a new DXCC and PAØHRK {#} - nice signal from Harke's 2.4 m dish and 250 W. I QSO'd on using JT65C unless noted on 13 cm on 23 April Z66EME for a digital initial {*} and new DXCC, and on 9 cm on 25 April Z66EME for a digital initial {*} and new DXCC, G4BAO {#} - John's first 9 cm EME QSO, and DF3RU on CW and SSB. I worked on 6 cm using CW on 26 April UR5LX for initial #67. This QSO was also my last off the moon from this QTH! My 3.7 m Andrew dish and tower with 2 m EME array and terrestrial antennas are already down. I needed 2 x 20' containers for the antennas, coax cables, towers, 3.7 m dish in 2 parts, etc. This is without the equipment in the shack, Hi. In the beginning of Sept, we well move about 50 km to the north to a new house in a very nice location. [New grid]?

SP6JLW: Jacek (SP6JLW) sp6jlw@wp.pl and Pawel (SP6OPN) send news about their participation in 23 cm DUBUS/Memorial Contest -- This time we used the callsign SP6JLW and scored 83x68. There were a large number of active stations that caused the 23 cm band to look at times more like 20 m. We QSO'd OH2DG, ON5GS, ON5RR, ZS1LS for an initial (#), RA3EC, UA3PTW, UA4AAV, HB9Q, HB9SV, OZ6OL, IK1FJI, IK5VLS, IK3COJ, IK3GHY, IZ1AEM, I1NDP, IW2FZR, OK2DL, OK1YK, OK2ULQ, OK1C, OK1DFC, EA8DBM, JR4AEP, JA8IAD , JA4BLC, JA6AHB, JA8ERE, JF3HUC, JH1KRC, F1PYR, F6KRK (#), F6ETI, F5KUG, F5JWF, DL3EBJ, DL7UDA, DK3WG, DL6SH, DJ8FR, DL1YMK, DF3RU, DL7YC, DJ3JJ, DF2GB (#), DF2VJ (#), S53MM, S59DCD, 3B8MB for new DXCC, ES6FX, ES5PC, PA3DZL, PI9CAM, PA0PLY (#), SP3XBO, KL6M, W4OP, WA9FWD, K5SO, K2UYH, W7JM, K2YY (#), N4PZ, WA6PY, N8CQ, N5BF, LA3EQ, VK3NX, VK4CDI, G3LTF, G4RGK, G4CDN , G4CCH, SM2CEW, SM7FWZ, VE6TA, VE4MA, VE6BGT, VA7MM, LZ2US, LZ1DX, LX1DB and XE1XA. [Translated by OK1TEH].

UR5LX: Sergey ur5lx@ukr.net has added 6 cm EME -- I am now QRV 6 cm EME from KO70wk. I worked on 17 April JA4BLC on CW, JA8ERE on CW and UN6PD on JT4F for mixed initial #4*, and on 18 April JA1WQF. I need > 15 degs EL to see the Moon, and am looking for skeds via email and on the HB9Q logger.

VE3KRP: Fast Eddie eddie@tbaytel.net writes about his April 23 cm EME – I worked on 4 April IK3COJ (JT) and K5DN (JT), on 24 April DF2GB (JT) and IZ2DJP (JT) for an initial {#}, on 26 April 26 EB8MB (JT) {#} - thanks Giulio for persisting while I was fighting off Murphy and W2HRO (JT), and on 28 April K5DN (JT), XE1XA (JT), KA1GT (#JT) and WA3RGQ (JT). I was disappointed to miss the 1296 CW contest weekend, but I was tied up at a conference and hamfest in Minn. I will be back there in June to operate the ARRL June VHF contest. I will be retiring on 15 May and will hopefully have more radio time with a great bunch of people!

VE6BGT dish mount – see below

VE6BGT: Skip macaulay.skip@gmail.com submission for the newsletter follows -- April was a busy month for me and EME. The first thing was the addition of a TS2000. The difference in receiver from the old TS-711 that I had been using for year is incredible. I used an outboard Timewave DSP-9 but there is no comparison. So except for my poor CW copying abilities, I am not such an "alligator" anymore. The 2000 helped a lot during the 23 cm CW contest. I participate more for the new contacts than collecting points. The signals I saw on my panadapter and heard were at times what I would expect on 20 m. There was lots of activity! I worked 18 stations; lots of whom were initials. When the EU window closed, I was testing and adjusting the TS2000 for receiving my SSB echoes, and K2UYH called me. Its always a thrill to have somebody call you with this mode off the moon. Later on after the weekend I decided to work on my new 9 cm setup in preparation for this summer's MW contests and AWs. I actually had the system built last summer but my new preamp was acting up. I sent it back to WD5AGO to check out. He did his magic and it now seems OK. It got late last fall, but never got the feed back on the dish before our ugly winter set in. So I put it on the dish and using a motorized feed positioner peaked it on solar noise as best as possible. I decided to wait for the Moon to rise in a couple of hours to see if I would hear my echoes. While waiting I logged onto HB9Q and found K2UYH just wrapping up his 9 cm operation. I asked him to hang around for a hour to see if we could work. Meanwhile a perfectly calm evening started to get a few wind gusts. The moon rose and I sent out a carrier and was excited to hear my echo very strong even with the moon barely above the trees. I moved the dish around to peak it, and the echoes were gone completely! I was afraid of this problem. During my solar noise tests, I observed some bad azimuth slop. I was now seeing and how bad it deteriorated the signals at this higher freq and narrower beamwidth. I

zoomed in with my remote camera and watched the feed position and when it blew off, I would correct for it manually. Later on, K2UYH came on and we made a good QSO for my first 9 cm contact. The next couple of days I looked into the slop. Besides a loose set screw on a sprocket, the biggest problem was twist in the 4' solid steel drive shaft from my gearbox to the drive sprocket at the dish mast. I could grab the dish and push it back and forth and with aluminum rods fixed on the drive shaft. I saw the top of the shaft moving with the dish bouncing, but at the bottom it moved barely at all; in fact the shaft would at times try to bow sideways from the twist. So, I replaced the shaft with a new one built from a piece of sked 40, 2" pipe. I had to build an adapter to reduce it to the 1" shaft at the top for the bearing and sprocket, and at the bottom add a flange to mate up with the gear box. This new drive shaft works very well. I have more than 70 percent of the play gone. So, it's been a busy and successful month!

W4OP: Dale parinc1@frontier.com was QRV for the VK3UM Memorial Contest -- As always, it was a joy to work big signals in the DUBUS contest. W4SC came up to operate with me. By the time Ben had arrived, I had a failed 4 port hybrid repaired and a new, larger dump port termination installed. Somehow both PE1RKI amplifiers survived the hybrid failure and echoes were right where they should be. We worked 51 stations, 50 on CW and LX1DB on SSB. It was great fun and so nice to work old friends again after being off for about 18 months. Ben and I are laying out the copper for an SM6FHZ septum feed and hope to have it mounted and optimized for the Fall ARRL EME Contest.

WA6PY: Paul pchominski@maxlinear.com was QRV in 1296 VK3UM Memorial Contest -- I QSO'd DF3RU, DJ8FR, DL1YMK, DL3EBJ, DL6SH, DL7UDA, EA8DBM, ES5PC, ES6FX, F1PYR, G3LTF, G4CCH, G4RGK, IK1FJI, IK2MMB, IK5VLS, JA4BLC, JA6AHB, JH1KRC, K2UYH, K2YY, K5SO, K7CA, KL6M, LZ1DX, LZ2US, N4PZ, N5BF, OH2DG, OK1CA, OK1DFC, OK2DL, PA0SSB, PA2DW, S53MM, S59DCD, SP3XBO, SP6ITF, SP6JLW, UA3PTW, VA7MM, VE4MA, VE6TA, W4OP, W5LUA, WA9FWD and XE1XA for a total of 47x42. Heard with good signals were OZ6OL, VK4CDI and IW2FZR. I plan to be QRV in the 6 cm contest in May.

WB2BYP: John storyavenue@hotmail.com is temporarily QRT -- The April windstorms broke my azimuth drive prop pitch motor gear assembly. I was thus off the air for the Memorial/DUBUS 23 cm event. I have a new ring and worm gear arrangement that needs to be adapted to the main spline. It will with some luck be incorporated this summer. I was able to assist W2CNS to get his 3 m dish on receive during the contest weekend. We heard many good signals. Hopefully this success will encourage Bob to have TX going soon.

WD5AGO: Tommy wd5ago@hotmail.com 13 cm DUBUS Contest Report from last month -- I worked the 13 cm contest, but could not TX the first pass to the west as the dish was looking right into the house on setting Moon. On the second pass, I was only able to listen on 2304 as the noise was too high on 2320 for any QSOs. I worked HB9Q, OH2DG, ES5PC, IK2RTI, WA9FWD, N4PZ, OK1DFC, OK1CA, SP6OPN, VE6TA, K2UYH, KL6M, VE6BGT and OH1LRY for a total of 13x12. I was on for the JA window, but did not hear anyone. On the 3rd pass, I placed a 2320 filter after the LNA to clean it up the XB noise, which it did, however a line of storms came through that afternoon and between the wind and lightning took us off line. I will leave the 13 cm feed in place before switching to 6 cm for the May DUBUS contest weekend. I was thus not on for the 23 cm contest.

Z66EME: Hermann (DL2NUD) and Uwe (DG8NCO) report on their dxpedition to Kosovo. [Z66EME: Hermann (DL2NUD) and Uwe (DG8NCO) report on their dxpedition to Kosovo. [Kosovo is relatively new DXCC country recognized by the ARRL only in Jan 2018. The Z6 prefix is not recognized by ITU or UN, so the decision by the ARRL was a bit controversial. Thanks to MMMonVHF for some of the material used in this report]. – We planned to be QRV on 2 m and 70, 23, 13, 9, 6 and 3 cm. Our team arrived on Saturday 22 April and did find a very good location (KN02ms) with good Internet access. After arrival, we set up the antennas. We discovered that we had only one 2 m antenna instead of 2 and only pieces of the 70 cm antennas. (During testing the 2 m antenna fell over and was destroyed. A working 2 m yagi was made from the what remained of the 2 m and 70 cm antennas that worked reasonably well). Operation on 1296 started at MR on 22 April; VK4CDI was heard almost immediately and put into the log were HB9Q, OK1KIR, G4CCH, DJ9YW, DK3WG, UA3PTW, LZ1DX, OK1IL, PA3DZL, OH2DG, OK1CA, ZS1LS, PA0BAT, OZ4MM, ZS6JON, OK1DFC, NC1I, DL7UDA, OK2DL, ON4AOI, PE1CHQ, DF2GB, DL6SH, EA8DBM, DG0FE, ES6RQ, W5LUA, G4RGK, DF3RU, PE1LWT, ES6FX, K5DN, K2UYH, W2HRO, PA3FXB, HB9Q, PA3DZL, UA3PTW, ZS6EME, W5LUA and ON4AOI. 23 cm operation went well until Murphy struck again! The 23 cm PA and TRV were damaged, reason unknown. We replaced the power-FET, and the PA was OK again. Unfortunately, the TRV could not be repaired on sight, and is why we went QRT on 1296 that afternoon. We were able to make a total of 36 initials during the period we were QRV. Work immediately started on building the 13 cm station. We were ready to test by 1800. All equipment worked very well and we had very good echoes. We QSO'd HB9Q, PA3DZL, UA3PTW, ZS6EME, W5LUA and ON4AOI. But on 24 April we experienced Murphy again! Half an hour before MR a sudden wind gust blows over our dish! There was no serious damage; however, the feed support was badly bent. This bend became a problem for operation on the higher bands. We decide to try 13 cm again next. In the evening when we were ready to QRV on 2320, a strong T-storm approached quickly. He had to bring the dish down and put the HF-equipment inside the mobile home. We next were QRV on 3400; and on 26 April worked HB9Q, OK1KIR, OH2DG, PA0BAT and PA3DZL. But at about 2100 strong rain started, and we had to QRT. This had to be frustrating for the stations looking for us. On 26 April we were QRV on 5760. Unfortunately, we had very strong QRM from WiFi, which didn't improve at higher elevation. We tried for 6 hours but were only able to work

HB9Q with a (28DB) report. Our tracking system also started to act up and the TRX began jumping in frequency. We gave up at 2100. Because of the bent feed support that affected our tracking, we decided to cancel 10 GHz activity. We changed our plan and decided to try 13 cm again; and on 27 April were on 2320 at MR. During what should have been our first QSO with OK1DFC, the TRV stopped working. A power FET was damaged, and there was no way to repair it in the field. We were QRT for Z66EME on GHz! On 28 April we managed to QRV for a small period on 70 cm and worked JA6AHB and DL7APV.

Z66EME Operating location – dish behind camper

ZS1LS: Allan allan@rfdesign.co.za reports on his microwave activities in April – I worked on 20 April 3B8MB (23DB) on their first pass for my 39th DXCC on 1296. On Saturday, 21 April, during the 1296 contest weekend my time on the moon was limited. I did work using JT65C GW3XYW (12DB) for 40th DXCC. The next day, Sunday, I had more time available and worked Z66EME (26DB) for DXCC 41. I also had a blast working some stations on CW that were in the contest – strictly random, search and pounce. I didn't really consider my system big enough to work CW, but after working the PI9CAM station at almost speaker copy I was intrigued and started to find that most of the larger stations were workable with a little effort. In the log are SP6JLW (589), I1NDP (549), ES5PC (549), UA3PTW (579), OK2DL (559), LZ1DX (549), OH2DG (549), K5SO (569), DL6SH (559) and W4OP (539) for a total of 10x10. I certainly enjoyed the challenge but can see that I probably need some more power to hear my echo's a bit better. That's a future project for sure and I will be a more regular participant in these CW contests or activity periods. Please look for my callsign. On another front, I acquired some LNAs (L, S, C and X-band) and power amplifiers (X-band) from the estate of ZS6AXT (SK) and I am busy testing them. He had a collection of seven 3 cm DB6NT LNAs and I will offer for sale some that I don't require here with test data when I have gone through everything. My 3 cm station progresses; I have now acquired a 20 W SSPA from Ivo's estate. I am still looking for a WR90 waveguide switch to get on the air.

K2UYH: Al alkatz@tcnj.edu reports that he and NE2U had a great time in the VK3UM Memorial 1296 Contest – I started the contest on setting Moon on 21 April and worked using CW at 0004 K5SO (589/579), 0016 WA2FGK (559/559), 0019 K7CA (559/559) for initial #400, 0028 VE6TA (579/579), 0037 WA9FWD (569/569), 0055 WD5HRW (549/559), #401, 0132 XE1XA (569/569), 0147 JA8IAD (559/559), 0157 KL7M (569/579), 0202 N6OVP (569/559), 0215 VA7MM (569/559), 0231 JA4BLC (559/559), 0235 N5BF (559/569), 0244 JA6AHB (569/579), 0305 VK5MC (559/559) and 0326 JH1KRC (589/589) near moonset. The next day, right after moonrise through the trees to the east, I worked outside of the contest at 1648 3B8EME (8DB/20DB) on JT65C for mixed initial #586* and DXCC114*. I then literally ran out of the house for a family social event. George started contest operation later when the Moon was clearer of the trees and QSO'd using CW at 1844 OH2DG (569/569), 1852 DL6SH (559/579), 1856 LZ2US (559/579), 1901 SP6JLW (579/579), 1907 DJ8FR (569/569), 1910 IK1FJI (559/559), 1914 OK2DL (579/579), 1915 W4OP (559/569), 1932 G4CCH (579/579), 1935 LZ1DX (569/589), 1943 F6ETI (559/579), 1952 DL1YMK (569/569), 1956 S53MM (559/569), 2000 UA3PTW (579/589), 2004 IK5VLS (559/559), 2012 WA6PY (569/569), 2016 OK2ULQ (559/589), 2022 DL7UDA (559/589), 2028 DF3RU (569/559), 2036 PA2DW (559/559), 2040 W5LUA (579/579), 2046 DL3EBJ (559/579), 2050 OZ6OL (559/569), 2058 I1NDP (589/589) – I returned about this time and operated thru moonset, 2105 ES5PC (559/579), 2117 F5KUG (559/559), 2141 K2YY (579/579) – John in CA at W6YX station, 2210 PA3DZL (579/579), 2216 EA8DBM (579/579), 2222 ES6FX (569/569), 2247 VE6BGT (569/569), 2339 XE1XA (569/569) DUP, 2345 VE6BGT (55/55) SSB DUP – we could not resist responding to Skip's excellent SSB signals, followed by a SSB call at 2355 from EA8DBM (55/56) DUP, and on 22 April at 0048 N4PZ (589/589), 0227 JA8ERE (559/559), 0400 JF3HUC (579/569) and 0410 VK4CDI (559/559). On Sunday, I operated the final contest moonpass working at 1834 IW2FZR (559/569), 1846 OK1DFC (559/579), 1915 S59DCD (559/569), 1927 NC1I (579/569), 1942 G4RGK (559/559) and 1958 SP6ITF (569/569). I then took a break from contest operation to work using JT65C at 2026 Z66EME (15DB/O) #401* and DXCC 115. After this QSO I returned to the contest to work on CW at 2051 G3LTF (579/579), 2104 partial G4FUF (O/-) – lost, 2138 OK1CA (579/579), 2203 IK2MMB (569/569) and 2241 F1PYR (559/569). I had to quit a little early for another family event, but the activity had slowed down by then. Overall, we ended with 61x57. I had very poor luck with Z66EME on the higher bands. On 24 April I set for 2304, but Hermann had problems and was never on during my window. W2HRO actually operated my station because of my QRL schedule and worked using JT65C at 2055 OK1CA (O/O), 2102 OK1KIR (O/O) and 2145 KD3UY (O/O). I switched between 9 cm and 6 cm over the next several days, but never had an opportunity to try with Z66EME on either band. I did have a very FB 3400 CW QSO on 27 April at 0130 VE6BGT (559/569). This contact was Skip's first 9 cm EME QSO and my initial #45. My plans are to be QRV for 6 cm AW and EU/DUBUS EME Contest in May.

NET/LOGGER NEWS: **KD2NX** is SWLing on 432 with 2 x 25 el K1FO yagis and an LNA. Phil hopes to be fully QRV soon. **SM7THS** is QRV on 70 cm EME mainly for dxpeditions and contests. He tried but did not succeed with the CR2EME (heard well) or Z66EME dxpeditions.

FOR SALE: **DL7APV** has available his old 432 16 yagi array, and also a 432 TH331 PA (>> 3 kW) with PS.

PA0PLY will 10 and 24 GHz LNAs for sale at EME2018. See Jan's report. **ZS1LS** is looking for a WR90 waveguide switch to get QRV on the 3 cm EME – see his report.

EME 35/25 YEARS AGO BY G3LTF: 35 Years ago in 1983, the March NL was full of ecstatic reports about the 432 conditions during the 26/27 Feb sked weekend with some reporting of the "best signals ever". I checked back using VK3UM planner and yes, it had high declination, 21 degs, 0.02 dB excess loss, very low libration and a low sky background temperature. Activity was very high with some reports of QRM from overcrowding in the bottom 20 kHz. On 23 cm the focus was on improvements to the UPX4 type 6 tube ring amplifiers made by OZ9CR with details of a new output coupling link. Hans had just shipped another 10 of these amplifiers including one to G4CCH who was just starting to work stations with his 8' HB dish. The initials list was led on 23 and 70 cm by K2UYH with 29 initials and16 DXCC and 210 initials 37 DXCC respectively. The list of active stations (covering both bands) had about 200 calls and by far the largest fraction were from the USA with all call areas represented. What happened? 25 Years ago in 1993, the Nancay radio telescope (equivalent to a 98 m dish) was activated on 1296 in March and made 49 contacts in its short window; 60% of them were on SSB. DF5JJ was testing the set up that he later used to activate EA6, a 3.7 m dish and 450 W. There was a 432 dxpedition by AF1T to activate Rhode Island, and a major storm right down the US East coast damaged many antennas and destroyed KU4F's 44' dish. AF9Y described his 4096 pt FFT weak signal detection system with color display of amplitude (interesting picture) and there was an outline of F1EHN's latest moon auto-tracking system. In the 23 cm REF contest, later to become DUBUS, OE9XXI scored 47x23. Activity on 2320/2304 was increasing, driven by W5LUA and OE9XXI. G3WDG made his first QSOs on 10 GHz.

LNA PROTECTION RELAYS BY XE1XA: I like to squeeze from my EME system the last dB of G/T. To improve my performance on 23 cm, I replaced the CX520 LNA protection relay (rated at 0.2 dB insertion loss) at the RX port of my septum feed with a Transco 11100 Y relay (rated at 0.1 dB insertion loss and 0.05 dB typical at 1500 MHz). [Please beware, I have had problems with Transco Y relays' loss degrading over time and will not use them for this reason. Other low loss relays should yield similar results]. If the Transco Y relay is connected right at the feed RX port, as it should be to avoid additional cable losses, the LNA losses can be reduced by 0.10 - 0.15 dB. This may seem a minor improvement, but it is similar to decreasing a state of the art LNA NF from 0.25 to 0.15 dB, or less. The 1P/2T Transco Y relay has two independent 28 V dc coils, so that the T/R sequencer should provide voltage for both switching to ground the LNA input when TX'ing, and then switching the feed RX port to the LNA input when receiving. Since sequencers usual provide 12 V dc, you will need to put two 12 to 28 V "boosters" to properly operate the relay. When TX'ing, the LNA 12 V dc power is turned off. I got from Bang good.com two very small "boosters" that were mounted directly to the relay's coils. They are reliable and work very efficiently. On my system, the change provided about 0.75 dB of added sky noise. This means the input/LNA noise contribution was reduced by more than 11 K and confirms the expected result. The relay and LNA were mounted into a Bud die cast aluminum box.

SUN NOISE MEASUREMENTS: Since the 60's EMEers have been comparing Sun noise with the predicted values (often from VK3UM's EME Calculator) to determine the performance of their systems. How to do such a measurements is well described at (1) http://www.ok2kkw.com/next/dj3jj_70cm2010.htm & (2) http://www.k5so.com. About one year ago OK1TEH prepared table of Sun noise measurements in Excel at http://www.ok2kkw. com/next/nl_k2uyh/sun_noise_table.xls and PDF at http://www.ok2kkw.com/next/nl_k2uyh/sun_noise_table.pdf. Send please any updates to ok1tehlist@seznam.cz. How the noise measurements can be used for improving a small 23 cm EME station is described in RW3BP's articles. The English translation you can found at: http://www.vhfdx.ru/apparatura/accurate_noise_figure_measurements_1296_mhz, http://www.vhfdx.ru/apparatura/rw3bp_1296mhz_lna_optimization and http://www.vhfdx.ru/apparatura/1296-mhz-small-eme-station-with-good-capability-part-5.
Other interesting articles in the Russian language can be found at http://www.vhfdx.ru/apparatura/.

RADIOASTRONOMICAL CORNER: 4 May was the 85th anniversary of Karel Jansky's announcement of the discovery of galactic radio noise, which is considered to be the beginning of radio astronomy - https://www.nrao.edu/whatisra/hist_jansky.shtml.
PAF is a new milestone in Phased Array Feed technology! The PAF design can form multiple views ("beams on the sky," in radio astronomy terms) with same efficiency as a classical receiver. It means faster scans of multiple astronomical targets. The New Phased Array Feed for the 1.4 GHz band is described at https://t.co/lYQHQRNlAN + http://iopscience.iop.org/article/10.3847/1538-3881/aab965/ Zmeta.
Pulsars: Pulsars are rapidly rotating neutron stars and some of them are known to have a "glitch", and astronomers have captured one as it happened. See https://theconversation.com/captured-radio-telescope-records-a-rare-glitch-in-a-pulsars-regular-pulsing-beat-94815.
Ghana: Are you interested in finding a big dish for use during an EME dxpedition to Africa? Read http://skatelescope.ca/wp-content/uploads/2017/05/01_asabere.pdf.

FINAL: We continue to make changes to the format of the NL. This month we have moved reports on future dxpeditions to the beginning of the NL and listed them based on expected dxpedition date rather than alphabetically in the regular reports.

► We would like to get the Microwave WAC Club started. Please email to alkatz@tcnj.edu information on your WACs for on 1296 and above and the dates they were awarded. We are looking for a volunteer to keep track of the database and manage the overall WAC Club. This topic and related issues such as should we include 432 will be discussed at EME2018.

► Have you completed your plans for the EME Conference? EME2018 is now only a little more than 3 months away! Jan (PA3FXB) writes -- The conference

booking process works via the standard booking module of the hotel. This is not the most logical software I ever saw (Hi). But it works. To make it easy on you, we selected some arrangements that would probably be the most wanted: Arriving on 15 or 16 Aug and leaving on 18, 19 or 20 Aug. Arriving earlier and staying longer is perfectly possible but for that you need to contact the hotel, t.schripsema@zuiderduin.nl, They are very flexible and helpful. It can all be arranged! The program is now close to final and will include: DJ3FI - LNA technique, DJ5YL- 70 cm @ PI9CAM, DL7APV – A big 70 cm Array, EB3FRN – 10 GHz LNA, F2CT – Tonna Legacy, G3LTF – 6 cm, G4BAO – Small EME Station, G4DDK – 70 cm transverter, G4LDR – Goonhilly, IK1UWL – Polarization on 2 m, K2UYH – SSB EME, N2END Antenna Control, OE5JFL/I1NDP/Iw5BHY/ I0NAA – Pulsar Hunting, OK1DFC – EA9 Dxpedition, PA0PLY – Polarization on 70 cm, PA0SSB – EME History in PA, PA2CHR/PA3CMC – Swaziland Dxpedition, PA3FXB – PI9CAM, RW3BP/UA3AVR – Cold horn NF measurements, W1GHZ – Offset Dishes, ZS6EME – UADC4. If you have questions about the conference, things you would like to see or visit in the Netherlands before or after the conference, please ask us. We can advise you! I and the conference team are looking forward to welcoming you in Egmond aan Zee and in Dwingeloo at PI9CAM.

► DK7LJ just announced that the 10 GHz EME Beacon is back in operation after being QRT for 3 months. It is on 10368.025 with 50 W at a 7.2 m dish. Per sends his thanks to G3WDG for the new PA.

► The weekend of 19/20 May should be a fun weekend. Besides the EU 6 cm contest, the ARI EME Trophy Contest (spring leg) also takes place this weekend. EME operation is on 2 m and 70, 23, 6 and 3 cm in all modes. QSO by analog and digital count separately. You can work a station on both CW and JT for twice the points. The is a point multiplier for the bands 13 cm and above. 3 cm has a 10X multiplier. Details rules can be found at http://www.eme2008.org/ari-eme/Trophy%202018%20Rules.pdf.

► The ARRL's June VHF Contest starts at 1800 on 10 June and continues to 0300 on 3 June. This is primarily a tropo contest, but EME QSO are counted. The use of WSJT and loggers is also allowed, thus considerable EME activity from NA contest stations can be expected.

► There is still considerable interest in W2IMU's Crawford Hill Technical Reports. W1GHZ has put a copy online at http://www.w1ghz.org/EME/Crawford_Hill.zip.

► Do you need a good BPF or LPF for 70 cm? See http://www.pe1rki.com/144mhz70cmcavityfilter.html or http://www.antennas-amplifiers.com/Band-Pass-Filter.

► Want SDR direct to 3 cm? See https://www.crowdsupply.com/lime-micro/limesdr-mini/updates/lms8001-companion-extends-coverage-to-10-ghz.

► Want more info on offset dishes for the microwave, see OK2AQ's interesting article at http://www.urel.feec.vutbr.cz/esl/files/EME/Doc/Offset%20Dishes%20for%20MW%20EME.pdf and http://www.urel.feec.vutbr.cz/esl/ files/EME/Doc/Documents.html

► TNX for all the reports and tech material. June should be another fun EME month. [I – K2UYH plan to be at Dayton on Friday 18 May and hope to see some of you there. I plan to be back Friday night local to allow operation of the 6 cm contest]. Please send your thoughts on improving the NL. 73 Al – K2UYH and Metej – OK1TEH

EME World records - all modes:

28 MHz	SM2CEW	KP15CR	RU1AA	KO48VR	CW	EME	19-09-2005	873km
50 MHz	F6FHP	IN94TR	ZL3NW	RE66HO	JT65A	EME	03-03-2006	19442
70 MHz	ZS6WAB	KG46RC	GD0TEP	IO74SD	JT65A	EME	15-02-2009	9239
144 MHz	CT1HZE	IM57NH	ZL1WN	RF73HG	JT65b	EME	07-03-2007	19708
222 MHz	K1WHS	FN43MJ	KH6BFZ	BL11CJ	CW	EME	17-11-1983	8162
432 MHz	G3SEK	IO91IP	ZL3AAD	RE66GR	CW	EME	12-03-1989	18972
902 MHz	PY2BS	GG66PJ	VE6TA	DO33GS	CW	EME	21-06-2014	10686
1,2 GHz	VK4CDI	QG52XH	EA8DBM	IL18OH	CW	EME	05/11/2017	18923
2,3 GHz	CT1DMK	IN50RO	VK3NX	QF21EX	CW	EME	13-12-2010	17681
3,4 GHz	GB6GHY	IO70JB82AC	VK3NX	QF21EX	CW	EME	28/08/2017	17266
5,7 GHz	CT1DMK	IN50RO	VK3NX	QF21EX	CW	EME	05-04-2009	17681
10 GHz	VK7MO	OF76NK00MB	WA3LBI	FM28LO01VE	QRA64D	EME	09/09/2017	18951
24 GHz	G3WDG	IO92RG	VK7MO	QE36WV	JT4F	EME	31-12-2014	17464
47 GHz	RW3BP	KO85WS	AD6FP	DM04MS	CW	EME	23-01-2005	9739

More at: http://www.ok2kkw.com/dxrecords.htm (including separation MGM vs. CW)