432 AND ABOVE EME NEWS
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CONDITIONS: High winds in Europe (EU) reduced activity in the 13 cm Dubus CW EME Contests, but there still was a good turnout and generally good conditions. The top reported score is by SP6OPN (Klodza group) with 34x30.

SP6OPN's antennas – big dish used in 13 cm contest

Coming up on 13/14 April is the Big One, the 23 cm DUBUS CW EME Contest - see rules at: marsport.org.uk/dubus/eme.htm.

This month W5LUA has joined the list those having DXCC on 23 cm – see Al's report in this newsletter (NL). Congratulation to Al!

The next 70 cm CW Activity Time Period (ATP) is 13 April 1130-1330 and 2100-2300.

The TO2MB (Martinique) dxpedition on 432 and 1296 was a great success. [If you did not know, Martinique is unique DXCC and not the same as operated from by TO2EME] – see their report later in this NL. Unfortunately, EA9LZ had problems and was never QRV on 70 cm. There are many upcoming dxpeditions, see the following reports:

UPCOMING EME DXPEDITIONS IN SPRING 2019 > 432

LY/DL2NUD and LY/DL4DTU: Arunas' (LY2IJ) ly2ij1@gmail.com reports his Lithuanian country home in KO25tf will be the location for the dxpedition. They will use DL2NUD's dxpedition equipment consisting of a1.5 m dish with automatic moon-tracking and various SSPAs. Operation will start on 6 and 7 April on 23 cm (2 full moon-paths on each band), move to 13 cm on 8 and 9 April, then on 10 and 11 April for 6 cm and on 12 and 13 April for 3 cm. The period from 14 to 17 April is currently undecided. They will have internet access and will be on HB9Q EME Logger.

EA8/G4RGK: Dave zen70432@zen.co.uk will be back on 70 cm from Fuerteventura for a few days between 3 April and 6 May with his 1 yagi.

VP2EMB: Chris (PA2CHR) post@pa2chr.nl sends an updated timetable for his and PA3FYC's dxpedition to Anguilla (FK88mg) – see the last NL for more details – We expect to have moonrise at about 15 degs of el! Our house is located partly in front of our antennas to keep the coax short. We may be able to operate on 2 m and 23 cm at the same time. VK, JA and ZL stations can be worked only during moonset from VP2 where we have moonset over the ocean. We plan to be QRV on 1296 on 13 April at 1730 to 14 April at 0600; on 14 April at 1830 to 15 April at 0700; on 16 at 2030 to 17 April at 0830; possibly on 17 April at 2130 to 18 April 0915; possibly on 18 April at 2230 to 19 April at 1000; and possibly on 19 April at 2330 to 20 April at 1045. We plan to be QRV on 432 on 15 April at 1930 to 16 April at 0745; and on 21 April at 0030 to 21 April at 1130. Please look on mmmonvhf.de/latest.php for update's as we might not be QRV for all full moonpasses all the time! We will listen on our own echo on 70 and 23 cm, and hope to be online at the HB9Q logger. Pictures can be found at http://pa2chr.nl/News.html, and our online log is available on our QRZ page: VP2EMB. The setup is basically used last year in Guatemala. This trip is again a big challenge and we hope for some support. If you can make a donation via PayPal to postpa2chr.nl

SV9/HB9CRQ: Dan (HB9CRQ) dan@hb9q.ch and his Qteam will be active from Crete (KM25xa) on the GHz bands -- We will begin operation on 1296 on 10 and 11 May. On 12 May, we will switch to 13 cm (all sub-bands); then to 9 cm on 13/14 May, on 6 cm on 14/15 May and 3 cm 15/16 May. Operation on all bands will be moonrise to set. The 16/17 and 17/18 May Moon windows are open.

GM4JJJ/SK: David GL Anderson became Silent Key on 15 March after long fight with spinal cancer. He was well known by VHF/UHF community and as an author of famous MoonSked EME software. He was always friendly and helpful, especially to new comers. RIP Dave.

EME REPORTS:

BV5CE: Tom tom33638998@yahoo.com.tw is having excellent success on 1296 EME using his 4 yagi array since he move it to his roof -- With my new antenna location, I completed 23 cm QSOs with VA6EME, DL0SHF, PA3CSG, KA1GT, K7CA, YL2GD, UA9YLU and OZ4MM during the past month. I should be active next month when the Moon is high and will be looking for more QSOs.

DK3WG: Jurg dk3wg@web.de added in March a new DXCC on both 432 and 1296 – I QSO'd initials on 70 cm using JT65B with TO2MB for DXCC 138 and KO4MA, and on 23 cm using JT65C TO2MB for DXCC 64 and FR5DN.

DL0SHF: Chris (DF9CY) df9cy@web.de reports on his results in March on 23 cm -- I again operated DL0SHF (remote). My time was quite limited, but I made a number of contacts using JT65C. Despite the changing latencies, it worked quite well. Here are the stations I QSO'd: K5DN, LU8ENU, DL7AIG, VE3KRP, RU4HU, UA1CCU, IK5QLO, BV3CE, G4FQI, W1PV, NC1I, KA1GT, W5LUA, W2HRO, AA4MD, K7CA, UA1CCU and 4X1AJ. I had hoped to be on for the TO2MB dxpedition, but I could simply not be at home early enough. Unfortunately, I will not be on for coming 1296 DUBUS Contest as I will away on a train voyage. For those wanting a QSL card for the QSOs I made from DL0SHF, please send your cards to me (DF9CY's address at QRZ.COM is good). For the moment, I have no idea of what others may have worked under the DL0SHF callsign. Switching between CW and JT always takes about 15 minutes, because I have to reconfigure several settings each time I switch.

DL9KR: Jan Bruinier@t-online.de brings us up to date on his recent activity -- Since July last year I worked on 70 cm many initials often arranged via the HB9Q logger. All QSO were of course on CW. Among these are W2HRO for initial #1052, G0JLO #1053 (nice to work again after > 30 years), EA/PA3DZL # 1054 (lowest ERP ever in superb condx and 2 min periods), EI8JK #1055, TR8CA #1056 and DXCC 144, ZS4TX #1057, DF7KB #1058, S59DGO #1059, DL8UCC #1060, SM7EOI #1061, 4X1AJ #1062, PA3DOL #1063, G4HGI #1064, F5AOU #1065, and TO2MB #1066 and DXCC 145. In the ARRL EME Contest, I only made 9 QSOs during the Oct weekend. For personnel reasons, I had very little time in the 432 DUBUS CW Contest, but did work on 16 Feb 20 stations in less than 2 hours. It felt like the good old times! I am interested in seeing 4U1UN come back on EME. Another possible dxpedition location would be ER, Moldova. To my knowledge, it has never been on 432 and up EME.

G3LTF: Peter g3ltf@btinternet.com sends news on his March activities – We had strong winds for most of the week before the 13 cm contest. They continued through Saturday, so I missed the first pass completely. On Sunday the wind prevented operation until 3 hours after MR, between then (at 2345) I worked OK1KIR, UA3PTW, OH1LRY, SP6OPN, OH2DG, RA3EME, SP3XBO, ES5PC, JJ1NNJ crossband (XB) for initial #141, UA3TCF, G4BAO, IZ2DJP, F5JWF, SP2HMR, W5LUA XB, WA9FWD XB and K2UYH XB for a total score of 17x16. I also heard VE6BGT (579) on 2304. Its hard for me to draw any conclusions about activity from only part of the final moonpass. Signals were good, as you would expect from near perigee. I copied the TO2 dxpedition (439) on 23 cm, but CW seemed to be a low priority at there end, so I went off to bed. They did work later OK1KIR on CW. I didn't bother to look for them on 70 cm. I hope the VP2 expedition will give CW operation more time.

G4BAO: John john@g4bao.com reports on his results in the13 cm CW Dubus Contest -- I was on for only a couple of short sessions on Sunday evening due to the Cardiff Microwave Round Table on Saturday. It was a long drive back on Sunday. I completed random CW QSOs with G3LTF, UA3PTW, OH2DG and SP6OPN in the early session, but signals were lower than usual due to tree blockage. In the second session, with no blockage I worked, ES5PC, RA3EME and W5LUA XB. I also heard another (unidentified) station in the US band. I ended with a score of 7x7. My special thanks to RA3EME for his persistence during the first session, where he called me a number of times, but I only copied partial callsigns. He was much stronger later when I replied to his CQ and we completed for my mixed mode initial #50* and CW initial #28 on 13 cm! I know many of you are used to "ragchew" levels of signal on 13 cm, but with my small 1.9 m dish on these low bands, 200 W (and, alas my poor hearing!), I sometimes struggle to copy the weaker signals. So please be patient. I can also be QRV on 6 and 9 cm if you give me a bit of notice to change feeds. I now have 60 W on 9 cm.

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp was QRV on 13 cm for the Dubus 13 cm Contest weekend -- I worked 8x7 with KL6M, WA6PY, SP6OPN, OH2DG, OK1CA, OK1KIR, OH1LRY for initial #69 and K2UYH.

JA8ERE: Mikio sgl01011@nifty.ne.jp was QRV in the Dubus 13 cm contest and worked KL6M, JA6XED, OH2DG, OK1CA, JJ1NNJ, WA6PY, W5LUA, OK1KIR and SP6OPN for a total of 9x8.

K4QF: Ben LoWeb@esp-inc.net is still moving forward to becoming QRV on 1296 EME -- My progress was slowed by QRL activities, but I should now have more time for hamming. I have my polar mount's automatic tracking working. It "bumps" the dish 1.2 degs once every 5 min to matches the Moon's rate of ~ 14.45 deg. per hour. I'm now working on the sequencer, to be followed by the final task of getting the power amplifier in operation. I'll certainly be listening during the April 23 cm DUBUS CW Contest.

KA1GT: Bob ka1g@thotmail.com contributes the following for this month's NL -- Not a lot of activity here in March, but I did work BV3CE (150 W to 4 x 30 el yagis) and the TO2MB dxpedition (1.5 m dish with linear feed and 250 W). Both QSOs were using JT65C pretty difficult using my 3 m dish and 240 W at the feed. Persistence pays off though! I also worked BD4SY (15DB/12DB) and I think I was the first 1296 EME QSO for VA3ELE using his 1.87 m

dish. I'm currently at around mixed initial #130* on 1296. I probably won't be on for the 1296 DUBUS Contest due to travel to UK in April.

KL7UW: Ed kl7uw@acsalaska.net has been QRT for some time as a result of damage to his 4.9 m dish sustained last summer – It happened while we were on a long vacation trip. The ½" el actuator bolt sheared off, allowing the dish to drop about 2' to the ground. The result was a little deformation to the edge of the dish. However, winds were able to buffet the unsecured dish and bend the steel back frame structure. Repair will probably require removing the dish to allow it to be rebuilt. I also want to redesign the azimuth drive for slower tracking. I may also change the digital encoding system in the process. It is going to take some time as feed will need to be removed to lay the dish face-down. With luck I will have 1296 QRV by fall and maybe also get 3400 installed. Another project I am working on is a 1.8 m offset feed dish for 10 GHz. I am guessing that might not get done before the snow, but maybe I can have it completed for RX with 0.55 dB NF WG LNA.

N5BF: Courtney courtney.duncan.n5bf@gmail.com up dates us on his recent happenings -- I missed TO2MB because I missed the announcement about the one day they were QRV on 23 cm, and then they were rained out on my chance for a second try the following weekend. I also tried to work FR5DN on my eastern horizon, but discovered that geometry makes a QSO impossible. However, Phillippe's western horizon is excellent, and he can actually see below 0 degs elevation! After, finally fixing my sequencing issues, I installed a new Kuhne preamp (0.47 dB NF and 38 dB gain) in mid Jan before the rains started. I made about ten 23 cm QSOs with the usual operators over the following rainy month; but I was giving out such poor reception reports (typically 10 dB lower than usual), and getting such poor echoes (could barely see myself at a peak of (22DB) when I'm normally at (14DB) that I knew something had to be wrong. Also, the beacon, ON0EME was 8 to10 dB lower than normal. I did statistics on my logbook reports and I was able to show that my performance was indeed down from "normal"; it wasn't just subjective. I decided to thoroughly check out my receive system with a vector impedance analyzer. After checking every cable, adapter, relay, and bias-T in the entire receive and transmit path, and the septum feed, I found no problems and ruled out every component as being defective, except the LNA itself. I also used a signal source in the far field to carefully check the feed focus and found no (new) problems. The second weekend in March, the Sun was finally high enough in the south to do some careful Sun noise measurement. In the middle of these measurements, the LNA just quit working. Meanwhile a new LNA from VHFdesign had arrived (claimed 0.3 dB NF and 20 dB gain), so I installed it and carried on. Right away, the Sun noise, echoes, ON0EME, and subsequent QSOs were back up to what looked normal to me. It's not what it should be, but it is what it used to be, so I'm essentially back to "normal." Inspecting the Kuhne LNA, it looks to be weather sealed, but it also appears to have gotten some water inside. This would explain the low performance. A little moisture could explain it quitting while it was pointed at some other directions than straight up (in the park position) during my Sun noise measurements. I'm going to take it to the next San Bernardino Microwave Society meeting and pass it around for some expert opinions. I'd also welcome comments from NL readers. I am looking forward to the DUBUS 23 cm Contest and will definitely be QRV.

OK1CA: Franta strihavka@upcmail.cz writes about his 13 cm Dubus Contest activity on Saturday, 16 March -- The start was interesting with signals from 4 JA stations of which JJ1NNJ gave me initial #150. Then followed VK3NX on 2301.975, but G, F, PA, ON, and others were missing; probably due to bad weather. UA3TCF was on to give #151. My contest total was 30x30. I was QRV on 18 March on 23 cm for the TO2MB dxpedition and I worked with (14DB/21DB).

OK1KIR: Vlada vlada.masek@volny.cz and Tonna send their club's EME report for March – We primarily searched for initials in the 13 cm part of EME Dubus Contest. We QSO'd using CW on 16 March at 0002 UA3PTW (569/579), 0006 OH1RLY (559/579), 0016 K2UYH (569/569), 0027 KL6M (569/569), 0032 WA6PY (569/579), 0040 VE6TA (569/579), 0049 SP2HMR (559/599), 0112 W5LUA (579/579), 0118 VE6BGT (569/579), 1147 OK1CA (569/579), 1156 VK3NX (569/579), 1215 RA3EME (569/579), 1225 ES5PC (569/599), 1234 OH2DG (569/589), 1315 JJ1NNJ (O/O) for initial #167 and 1352 JA4BLC (559/569); then had to take a break to fix troubles with our TX, while making the repairs we heard JA6XED who would have been an initial, but unfortunately by the time the repair was completed, he had disappeared; then continued at 1539 JA6AHB (559/559), 1558 SM3BYA (569/579), 1607 IZ2DJP (559/579), 1702 OK2ULQ (569/589), 1709 SP7DCS (559/579), 1736 SP3XBO (559/579), 1740 S59DCD (559/579), 1803 SP6OPN (579/579), 1906 SV3AAF (569/579), 2052 SM6PGP (569/569), 2156 WA3RGQ (569/0) #168, 2215 WA9FWD (569/559) and 2225 WD5AGO (569/559), and on 17 March at 1315 JA8ERE (569/559), 1549 UA3TCF (559/559) #169, 1636 G3LTF (579/589) and 1644 F5JWF (579/599) for an overall score of 33x31 and 3 initials added. Then, we switched to 70 cm and worked using JT65B at 1950 TO2MB (24DB/19DB) for digital initial {#234} as the first1 TO (Martinique)-OK 70 cm QSO. On Monday, 18 March we installed our 23 cm feed and worked at 2024 TO2MB (15DB/18DB) for 1296 digital initial {#327} and 1st TO-OK 23 cm QSO. Later we worked them on CW at 2322 TO2MB (O/449) for initial #442.

OK2ULQ: Peter ok2ulq@seznam.cz was active in 13 cm contest only on Saturday -- I worked 11 QSOs added initials with SV3AAF and SM2BYA. For the next contest, I'm preparing a new 13 cm transverter. Some pictures at can be found at http://ok2ulq.blogspot.com/2019/03/dubus-eme-13cm-2019.html. [TNX to OK1TEH for the translation].

SP6OPN: Andrze (SP6JLW) sp6jlw@wp.pl reports on the Klodza group's active under callsign of SP6OPN during the Dubus 13 cm Contest -- We worked 34x30. Logged were VK3NX, RA3EME, OH2DG, UA3PTW, JA6XED, JJ1NNJ, JA4BLC, OK1CA, SP7DCS, IZ2DJP, JA6AHB, SP3XBO, OH1LRY, OK2ULQ, S59DCD, SP2HMR, SV3AAF, UA3TCF, SM3BYA, ES5PC, OK1KIR, SM6PGP, ZS6EME, K2UYH, W5LUA, WD5AGO, WA9FWD, VE6BGT, VE6TA, WA6PY, JA8ERE, F5JWF, G3LTF and G4BAO. We were happy with the high traffic of SP stations (5). [TNX to OK1TEH for translating from http://emejo80jk.cba.pl/aktualnosci.html].

TO2MB: Peter (DL1RPL) peter@dl1rpl.de and his team of DJ4TC and DL3RKS were active from Martinique Island on 70 and 23 cm. **[Martinique is a different DXCC than St. Martin operated from by TO2EME last year, even though the prefix is the same. TO2 can be used from at least 4 different DXCC locations].**

TO2MB's 432 2 x 17 el yagi array *(source DL1RPL.de)*

On 432 we used 2 x 17 el yagis and 500 W. We QSO'd 46 stations: DL7APV (17DB), UA3PTW (15DB), NC1I (22DB), LZ1DX (23DB), OK1KIR (19DB), UT6UG (25DB), UX5UL (23DB), DL6SH (23DB), DK3WG (23DB), YL2GD (26DB), UT5DL (23DB), PA2V (23DB), SM7THS (22DB), UR7DWW (20DB), G4RGK (26DB), DL2HAW (23DB), DL8FBD (25DB), DL5FN (24DB), DL8GP (24DB), DL9KR (559 CW), ZS4TX (21DB, DK4RC (28DB), US7GY (25DB), UX0FF (26DB), DL8DAU (24DB), KF8MY (26DB), G4FUF (26DB), UR3EE (23DB), G4EZP (26DB), W7MEM (19DB), UB4UAA (23DB), W5LUA (18DB), K2UYH (16DB), HB9Q (17DB) and OK1DFC (24DB). All QSOs were on JT65B except DL9KR on CW. On 23 cm we used a 1.5 m dish with linear ring-feed, 250 W SSPA and FT818 with GPS locked DB6NT transverter. We also QSO'd 46 stations on 23 cm: HB9Q (17DB), OK1KIR (18DB), OK1DFC (20DB), OK1CA (21DB), OZ4MM (19DB), G4CCH (27DB), DL7UDA (27DB), PA3CSG (26DB), DF3RU (25DB), LZ1DX (24), DJ9YW (26DB), ES6RQ (23DB), ON4AOI (28DB), DG0FE (27DB), RA3EC (25DB), EA8DBM (26DB), IK3COJ (27DB), YL2GD (23DB), UA9YLU (27DB), PE1CHQ (24DB), DK3WG (28DB), NC1I (22DB), PA3FXB (30DB), G4DML (24DB), ZS1LS (28DB), SP5GDM (28DB), W5LUA (19DB), OK1KIR (449) on CW, K5DN (23DB), OK1IL (32DB), K7CA (22DB), DL8FBD (29DB), DK5YA (29DB), K2UYH (21DB), UA3PTW (17DB), VA6EME (25DB), W2HRO (27DB), WX4F (22DB), OK2DL (21DB), RA3AUB (28DB), PA0BAT (27DB), XE1XA (27DB), KA1GT (28DB) and K5DOG (27DB). Our dxpedition arrived on 16 March after a 24 h trip with 150 kg of luggage. The first night was great as we worked 33 QSOs on 70 cm. Unfortunately because the Moon was blocked below 15 degs at moonrise we weren't able to work any JA stations. The next day we switched to 23 cm and logged 38 contacts. The temperature didn't get over 24 deg C. We then focused on 2 m EME and were not on 70/23 cm until the last day. More pictures can be seen at http://dl1rpl.de/pictures-6.html.

TO2MB 23 cm ring-feed *(source dl1rpl.de)*

UA3PTW: Dmitry ua3ptw@inbox.ru was active off the Moon in March – I added initials on 432 using JT65B with TO2MB, KO4MA and F8GHE, on 1296 using JT65C with FR5DN and TO2MB, and on 2320 using CW with UA3TCF, SP2HMR, IZ2DJP and SM6PGP. [TNX DK3WG for forwarding this report].

UA3PTW's antennas from qrz.ru

UA3TCF: Alex ua3tcf@mail.ru is now QRV on 13 cm EME – I am using my 2.2 m dish (f/D =0.31) and about 100 W at a Septum feed and 0.45 dB NF LNA. I made my first QSO on 15 March using CW with UA3PTW (O/O). I was active in the 13 cm Dubus Contest on 16/17 March and

worked with CW OK1CA, SP6OPN, OH2DG, OK1KIR, G3LTF, UA3PTW and ES5PC for a score of 7x6. I heard RA3EME, ZS6EME and JA6AHB. After the contest, I added on 18 March using JT65C G4BAO (O/27DB), and on 20 March with CW OH2DG (559/449). I am looking for skeds via email.

UA9YLU: Victor ua9yl@umail.ru reports adding initials in March using JT65C with BV3CE and TO2MB. [TNX DK3WG for forwarding this report].

UR3EE: Arthur ur3ee@i.ua in Ukraine (KM78ml) worked on 70 cm using JT65B with a single 34 el yagi the TO2MB dxpedition, who were using only 2 yagis. [TNX DK3WG for forwarding this report].

VE3KRP: Fast Eddie eddi@etbaytel.net reports that he has survived the harsh winter in his part of the World -- I still have some snow here, but it is quickly melting away. The good news is that I checked out my dish and it is in good shape. It is nice to be back on EME! I worked on 1296 using JT65C on 16 March PA3CSG for a mixed initial (#*), DL0SHF, UA1CCU (#*), K5DN and G4FQI, and on 23 March FR5DN (#*) and a new DXCC.

W5LUA: Al w5lua@sbcglobal.net sends his EME report for March -- **My big news is working DXCC on 23 cm**. On 15 March I worked FR5DN for DXCC 100 and then went on to work UA9FA, 4X1AJ, AA4MD, DL8FBD, UA1CCU, RA2FGG, DL0SHF and N5BF all using JT65C. I was on 13 cm CW for the Dubus Contest. I worked on 16 March SP2HMR, KL6M, OH1LRY, OH2DG, WA6PY, VE6TA, VE6BGT, OK1KIR, SV3AAF, OK1CA, ES5PC, SP6OPN, UA3PTW (XB), WD5AGO, K2UYH and WA9FWD, and CWNR S59DCD XB, then on 2400 (TX and RX) JJ1NNJ and JA8ERE, and on 17 March G3LTF XB, F5JWF, RA3EME and G4BAO XB for a total of 21x19. After the contest, I QSO'd on 18 March on 432 using JT65B TO2MB for a new DXCC and KO4MA. I then worked TO2MB on 23 cm for DXCC 101.

WA6PY: Paul pchominski@maxlinear.com was QRV in the 13 cm Dubus Contest -- I QSO'd ES5PC, JA4BLC, JA6XED, JA8ERE, JJ1NNJ, K2UYH, KL6M, OH1LRY, OH2DG, OK1CA, OK1KIR, SP2HMR, SP6OPN, UA3PTW, VE6BGT, VE6TA, W5LUA, and WA9FWD. Heard on 2320 and called S59DCD without success. I ended with a score of 18x16. On 2320, I am troubled from time to time high noise lasting for a considerable period of time, which can be up to 20 dB over cold sky! I should be on 23 cm in April for next leg of the contest.

WA9FWD: John WA9FWD@outlook.com operated in the 13 cm portion of the Dubus Contest -- I worked a total of 18x16 as follows: UA3PTW, OK1KIR, SV3AAF, OK1CA, SP6OPN, OH1LRY, W5LUA, ES5PC, KL6M, VE6TA, OH2DG, WA6PY, K2UYH, RA3EME, F5JWF, G3LTF, VE6BGT and SP2HMR – all on CW. I plan to be QRV again in April for the 23 cm portion of the contest.

K2UYH: Al alkatz@tcnj.edu – March was even better than Feb, but still not a great month for EME. I was only QRV for the 13 cm Dubus Contest and assisted for a part of the contest by NE2U. We QSO'd with CW on 16 March at 0015 OK1KIR (569/569), 0021 WA6PY (569/569), 0026 OH2DG (579/569), 0035 VE6TA (569/569), 0036 OH1LRY (569/559), 0104 KL6M (559/559), 0128 VE6BGT (559/559), 0530 JJ1NNJ (559/559) for initial #98, 2140 OK1CA (569/559), 2202 SP6OPN (569/559), 2212 ES5PC (569/559), 2220 SV3AAF (559/569), 2232 WD5AGO (559/339), 2252 W5LUA (569/569), 2383 SP2HMR (569/-) lost and 2342 UA3PTW (559/579) XB, and on 17 March at 0108 WA9FWD (569/559), 0702 JA4BLC (569/559), 0715 JA6XED (569/559) #99, 2257 F5JWF (55/559), 2303 RA3EME (569/579) and 2307 G3LTF (559/559) for a total of 21x19. After the contest, I worked on 18 March on 432 using JT65B at 0158 TO2MB (14DB/16DB) for mixed initial #987* and DXCC 136 and 0228 KO4MA (24DB/O) #988*, and on 19 March on 1296 at 0038 TO2MB (15DB/21DB) for mixed initial #600* and DXCC 116. I plan to be QRV for the 23 cm DUBUS Contest.

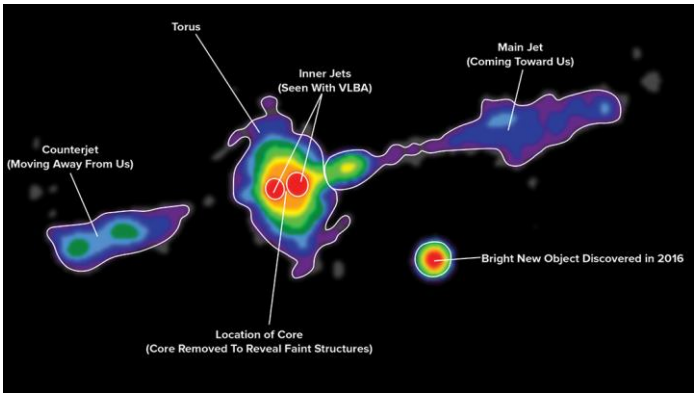
NET/REFLECTOR NEWS: **W4OP** should now have a new DB6NT 1 kW SSPA mounted at his dish. **WB2BYP** has added 23 cm to the list of bands on which he is QRV with his 28' dish. John just missed the 13 cm DUBUS Contest, but is interested in skeds and can be reached at storyavenue@hotmail.com. **EA8/G4RGK** will be back on Fuerteventura between 3 April and 6 May and try to be QRV on 70 cm EME for a few days. **W2HRO** is temporarily off 432 and has been concentrating on1296. He is also working on mounting a 2.4 m offset dish for 3 cm EME. **EA9LZ** dxpedition wasn't active on 70 cm and only was QRV on 2 m because of SWR problems. **OK1TEH** successfully found out how to fight QRM from local traffic on 426 MHz and he is now back on 70 cm EME with enhanced RX, Matej is looking for any skeds. **UA** microwave EME station photos can be found at http://www.vhfdx.ru/component/option,com_zoom/Itemid,99/catid,130/, http://www.vhfdx.ru/component/option,com_zoom/Itemid,99/catid,141/.

FOR SALE: **OK1TEH notes that f**riends are often asking where to buy long yagis for 23 cm with precision laser cut elements. Try checking out: https://www.wimo.com/yagi-antennas-shf-wimo_e.html#shf2367 or https://www.antennas-amplifiers.com/ 23cm-antenna and if you would like to know how to make long yagis yourself, see www.ok2kkw.com/dj9yw_dubus0601.pdf. **ZL1UKG** has for sale for ZL1EME's widow a completely packaged 1 kW DB6NT 23 cm SSPA and PSU. It is in two heavy duty cases for power supply and amplifier with water cooling by radiators and fans external to the amplifier case, including a 30 W driver module and a 1000 W module. The amplifiers are protected by circulators and dummy loads between stages. The PSU contains a Meanwell RSP 2400-48 = 48 V @ 50 A power supply, a Power Tech S-150-24 = 24 V @ 6.5 A and a 12 V supply for control circuits. (ZL power is 230 V 50 Hz). The PA is 20 kg and the PSU is 8 kg. If interested please contact Peter at peterlov@xtra.co.nz. [It appears a great deal].

RADIOASTRONOMICAL CORNER: We got good news from Mario, I0NAA, who has released the 10.0.0 version

of the popular **Murmur** software written for pulsar observation [TNX!]. He sent the following details -- I am glad to communicate that I released Murmur 10.0.0 (http://i0naa.altervista.org/index.php/downloads). This is a major upgrade as now Murmur is able to use the entire ATNF Catalogue data base that is included in the installation as a separate support file named ATNF.csv. This file can also be edited from the users. At the start, the program extracts the PSRs with S400 and S1400 >0 from ATNF.csv showing the result on the main form. With this new version, it is possible to sort the PSRs by all parameters and, most important by expected S/N allowing very detailed planning of observations! My Pulsar count is now at #10 and I am struggling to defeat increasing RFI from military activities (radars) and my goal is to reach #20 by the end of 2019. As far as Sun Noise prediction is concerned, I got a detailed feedback from Prof. Joachim Koeppen (DF3GJ) and basically my calculations matches quite well with his calculations (http://portia.astrophysik.uni-kiel.de/~koeppen/JS/AntennaCalc.html). The only thing I will need to update is the way to derive SFU from NOAA Data. Joachim suggests using linear interpolation instead of spline and, also, to analyze the history of data as sometime the data are affected from measurement problems; however, the impact is not big and so my calculations of expected Sun Noise can be considered accurate.

An amazing close view to Cygnus A: Radioastronomers used the National Science Foundation's Karl G. Jansky Very Large Array (VLA) to make the first direct image of a dusty, doughnut-shaped feature surrounding the super-massive black hole at the core of one of the most powerful radio galaxies in the Universe — a feature first postulated by theorists nearly four decades ago as an essential part of such objects. The scientists studied Cygnus A, a galaxy some 760 million light-years from Earth. This galaxy harbors a black hole at its core that is 2.5 billion times more massive than the Sun. As the black hole's powerful gravitational pull draws in surrounding material, it also propels superfast jets of material traveling outward at nearly the speed of light, producing spectacular "lobes" of bright radio emission. More at: https://public.nrao.edu/news/key-feature-powerful-radio-galaxies.



VLA image of Cygnus A's central region, with labels. Crdit: Carilli et al., NRAO/AUI/NSF

Another major discover is expected 10 April by the team at Event Horizon Telescope. Will it be the highly awaited pictures of shadow on Sagittarius A*? More at: https://eventhorizontelescope.org/blog/media-advisory-first-results-event-horizon-telescope-be-presented-april-10th.

SSPA INFO: At Google can be found some interesting presentations from the 24th Annual 2018 Pacific Northwest VHF Society Conference, see W6PQL's interesting notes about newest LDMOS devices and QRO UHF amplifiers available today: http://www.pnwvhfs.org/conference/2018/pdf/Jim-W6PQL-SSPA-Update.pdf

NEW BOOK ON EME: If you are an EME newcomer, you may be looking for a good book on EME? The RSGB has released a book called "Getting started in EME" By Stephen Appleyard, G3PND and Philip Malme, G4PQP. EME at 70 cm is covered and there is some info what a newcomer to EME might move on to, when they find themselves bitten by the Moonbounce bug.

Joe, K1JT wrote: "*Stephen Appleyard and Philip Malme have done an excellent job with the EME book. It aims at the right level, achieving a good balance between completeness and accessibility. Perhaps most importantly, it makes EME appear as something that nearly any amateur radio enthusiast could achieve, with some dedication of time and effort."* More at www.rsgbshop.org

FINAL: Besides all the dxpeditions and contests this time of year, there are also many conferences and meetinsg of interest to EMEers. Probably the meeting of most interest is **Örebro 2019**, the 432 & UP Swedish EME Meeting organized by SM4IVE to be held on 24-26 May, see more at: http://www.sm4ive.com/ememeetingmay.htm. There is now < 15 days left to get in your final payment!

► Last month we also mentioned the Super VHF Conference on 26-28 April at the Holiday Inn Washington-Dulles Intl Airport in Sterling VA. In July is the Central States VHF Conference in Omaha,NB.

► For Microwave EMEers there is the Microwave Update (MUD), which is sponsored this year by the North Texas Microwave Society – see full details at the end of the NL.

► The 28th EME and SHF OK meeting is now past history, but if you check www.vhf.cz/seminar-2019-eng/ you should find some interesting presentations published there.

► PA0PLY has updated his excellent **EME directory of active stations** on 70cm and higher bands. So if you're looking for sked, check out: http://www.pa0ply.nl/directory.htm.

► There is more to report and say about the 432 WAC Club and the 1296 Up WAC Club, but we ran out of time and will pick up on them next month.

► We will looking for you off the Moon. If you are QRV on 23 cm, don't miss the contest on 13/14 April. 73, Al - K2UYH and Matej – OK1TEH

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The North Texas Microwave Society would like to invite you to the annual Microwave Update Conference to be held October 3rd through the 5th 2019 at the Hilton Garden Inn and Conference Center in Lewisville (Dallas) Texas.

Microwave Update is the premier microwave conference of the year and was initially started by Don Hilliard W0PW (sk) back in 1985. This is the ideal conference to meet fellow microwave enthusiasts and share ideas and techniques that will help you conquer your next microwave band.

We have a full slate of speakers already set up including Rex Moncur VK7MO, Tony Emanuele K8ZR, Rick Fogle WA5TNY, Paul Wade W1GHZ, Joe Jurecka N5PYK, Doug Miller K6JEY, Greg McIntire AA5C, Steve Kostro N2CEI, Kent Britain WA5VJB, Bob Stricklin N5BRG, Barry Malowanchuk VE4MA, Tom Williams WA1MBA, Tom Apel K5TRA, Tom McDermott N5EG, Sam Jewell G4DDK, Dave Robinson G4FRE, Brian Thorson AF6NA, Skip Macaulay VE6BGT and Al Ward W5LUA. If you are interested in speaking, please let us know. Topics will include small dish EME, microwave propagation, parabolic dish feedhorn design and construction, SSPAs, circuit design, latest microwave devices, software defined radios, digital modes just to name a few.

Friday morning will be dedicated to antenna gain measuring led by WA5VJB, noise figure testing led by W5LUA and phase noise analysis led by AF8Z and KC4YOE.

We still have several surplus electronics and mechanical places in the DFW area that may still be worth a visit on Thursday. Those would include Tanner Electronics in Carrollton, Altex Electronics in Carrollton, and CDC Surplus in Richardson. Other places that would also handle walk-in business and be worth a visit include Texas Towers, Ham Radio Outlet, Fry's Electronics. A complete list is available on www.ntms.org.

On Thursday afternoon, we plan to have a workshop lead by Tom McDermott N5EG on GNU Radio. GNU Radio is a development and simulation environment used to create and test software design radio applications. This is a powerful learning tool and GNU Radio can be used to implement working radio applications.

Topics to be covered during the workshop will include:

Installation of the GNU Radio package in Windows.

Review of GNU Radio capabilities and core concepts.

Review of important GNU Radio modules, building a project, implementing and running projects involving hardware.

Use of Gnuradio Companion (GRC) graphical environment.

Demonstration of Gnuradio Companion (GRC) application with Ettus radio.

The attendee is encouraged to bring their 64-bit laptop with Windows 10. The focus will be on Windows but GNU radio works well in Linux also. Tom, N5EG has a good deal of experience working with GNU radio and communication systems. He has made presentations on the topic at the ARRL TAPR Digital Communication Conference. Tom will also have other speakers assisting him with the workshop.

We have tentatively scheduled the workshop on Thursday afternoon from 3 PM until 6 PM.

We plan to have an informal program for the spouses which will include local shopping and sightseeing in the Lewisville, Grapevine and greater DFW area on both Friday and Saturday.

Our Saturday night banquet speaker will feature Rex VK7MO who has activated over 100 grid squares on 10 GHz EME in both Australia and New Zealand. Rex will show us some of the beautiful places he has visited and talk about his adventures to some of the more remote places down under. This should be a real treat for hams and spouses.

Kent Britain WA5VJB will coordinate the publishing of the proceedings by the ARRL. We are always looking for additional papers for the proceedings. You don't have to be a presenter to have your paper published in the proceedings. If you have an article on your latest microwave related project that you would like published, please send your article to Kent WA5VJB at wa5vjb@flash.net

Hotel registration has been setup. The hotel link is http://hiltongardeninn.hilton.com/en/gi/groups/personalized/D/DALLEGI-MICRO-20191003/index.jhtml

I suggest copying and pasting the link into your internet browser for best results. Microsoft Edge gets fussy but Chrome and Mozilla Firefox work well. The conference rate for Thursday, Friday, and Saturday night is $104 per night for a King which includes breakfast. The rate on the same days for a Double Queen is $114 per night including breakfast. The rate for Wednesday night is $129 per night for a King including breakfast and $132 for a Double Queen. The hotel charges a higher rate on Wednesday as they have a lot of business travelers. We encourage everyone to register for the hotel as early as possible. If your plans change and you can't attend, you have until September 30th to cancel without any cancellation fee. Special room rate will be available until September 13. If you book without using the link above please mention North Texas Microwave Society so we can get credit for the room nights as this is required for us to keep conference registration rates as low as possible. The Group Code is "MICRO". If you have any problems with booking the hotel rate please contact w5lua@sbcglobal.net.

The Microwave Update web page will be updated shortly and it will include conference registration as well as other helpful information.

Hope to see you in the Dallas area once again.

73, Al Ward W5LUA Conference Co Chairman