

432 AND ABOVE EME NEWS

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EDITOR: AL KATZ, K2UYH; DEPT. ELECTRICAL/COMPUTER ENGINEERING, THE COLLEGE OF NEW JERSEY, PO BOX 7718 EWING, NJ 08628, TEL (W 609-584-8424), (C 609-947-3889), E-MAIL alkatz@tcnj.edu
ASSOCIATE EDITOR AND REFLECTOR/NETNEWS MATEJ PETRZILKA, OK1TEH, SIMUNKOVA 1609/21, 18200, PRAHA 8, CZECH REPUBLIC, TEL (+420 603 489 490), E-MAIL ok1teh@seznam.cz
CW INITIAL LIST G4RGK, DAVID DIBLEY, E-MAIL zen70432@zen.co.uk, AT: <http://www.zen70432.zen.co.uk/Initials/index.html>
SUN & EXTRATERRESTRIAL NOISE LIST MANAGED BY OK1TEH: http://www.ok2kkw.com/next/nl_k2uyh/sun_table.xls
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DL0SHF 3 CM EME BEACON, 10368.025, SEND INFO & QUESTIONS TO PER (DK7LJ) per@per-dudek.de.
NL EMAIL DISTRIBUTION and EMAIL LIST CORD: WARREN, W2WD wbutler@ieee.org
THE NL WEB VERSION IS PRODUCED BY REIN, W6SZ rein0zn@gmail.com, AT: <http://www.nitehawk.com/rasmit/em70cm.html>

CONDITIONS: April/May was a tremendous time for EME Contests. It started with the ARI's Spring Trophy Contest on 4/5 April. We expect that this year's contest had a record turnout. PA3FXB reported in this newsletter (NL) 63 QSOs on 1296. The contest results are now posted at <http://www.eme2008.org/ari-eme/Results%20Trophy%20Spring%202020.pdf> – TNX I5WBE. Next was the 6 cm DUBUS Contest on the weekend of 25/26 April. There were many good scores this year with G3LTF's of 30x28 at the top of those received. **The 70 cm CW activity time period (ATP) was also this weekend – see G4RGK's report. The next 432 ATP is on 24 May 0600-0800 and 1530-1730.** And there was also 24 GHz activity this same weekend in prep for the 10 GHz & Up contest the next weekend. In the 10 GHz DUBUS event on 1/2 May OK1KIR has the top reported scores for 3 cm of 31x28 and for 1.25 cm of 8x8. **Coming up is the DUBUS 13 cm CW EME Contest on 23/24 May.** As with the 6 and 10 cm contests, we expect JT65C activity besides the CW will be attracted to 13 cm this weekend.

Dxpedition wise: There is not a lot to report because of COVID-19. Both the SV5/HB9CQG and the TX7EME dxpeditions are postponed – see their reports in this NL. KB7Q will be active on 432 from MT grid DN55 on 30 May - see Gene's report. HB9CRQ announces that the Q-team will make a microwave grid dxpedition to JN46. The call will be HB9CRQ and be QRV on 23 May on 13 cm (2320 & 2304), on 24 May 9 cm, on 29 May 6 cm, on 30 May 3 cm and 31 May 23 cm. See the HB9Q webpage/logger for more info. Otherwise it looks like we are in for a bit of a dry spell.

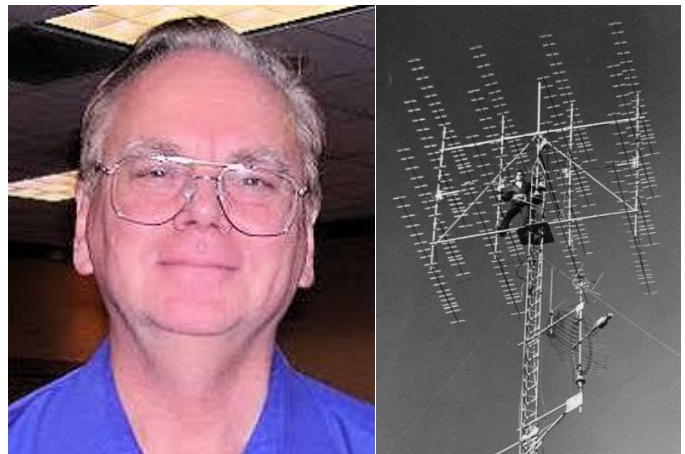
We are very sad to report that K2RIW joined the SKs in the beginning of April. Although Dick did not make many EME QSOs, he was a key contributor to 432 and up EME. His RIW 432 Power Amplifier design was probably more reproduced than any other PA. This was before digital when you needed power to make EME QSOs. His version of the stressed dish was also copied and used by many EMEers. These are just two of the many innovations that he contributed to our hobby. Dick will be greatly missed.

We also learned that noted 2 m EMEer KB8RQ is also an SK. See more details in the FINAL section of this NL.

REPORTS:

4Z5CP: Dimitry dibor@iname.com is still QRV 2 m and 70 cm EME from Haifa. He suffers from lot of noise and during

April he tried a new TRX IC9700 instead of his old TS2000. On 70 cm he uses 4 x 16JXX70 yagis and about 500 W. During ARI Contest in April he worked on 70 cm using JT65C DG5CST, PA2V, UT5DL, JH3BHB, DL6SH, DL7APV, G4RGK, LZ1DX, K2UYH, DK3WG, SM7THS, DF3RU and PA4VHF, and with CW DL7APV for a total of 14x9. He is now thinking about taking down his yagis and replacing them with a dish.



Dick, K2RIW and his 16 x RIW yagi array – Now SK

BD9BU: Wang wangqidsb@sina.com sends news of his EME activity on 432 in March and April -- I use 4 x 13 ei DK7ZB yagis, a 200 W HL250U SSPA, HB LNA and a FT897D. City noise is a big problem for me and degrades my reception. I QSO'd using JT65B unless noted on 2 March JA6AHB (21DB), DL7APV (14DB), DL8DAU (29DB), DK4RC (28DB) and UT6UG (27DB), on 4 March DL7APV (18DB) and DF3RU (27DB) – I had problem with my rotator's elevation angle at this time, on 6 March VK4EME (23DB), on 7 March DL7APV (9DB) and UA3PTW (15DB), on 9-11 March DL2HWA (23DB), UT6UG (26DB), JA6AHB (21DB), DK3WG (24DB), HB9Q (10DB), DL7APV (10DB), DL6SH (22DB) and UA3PTW (13DB), 28 March DK3WG (23DB), DL7APV (14DB) HB9Q (14DB), DL7APV PV (14DB) and PA2V (25DB), 29 March VK4EME (27DB), PA2V (22DB) and JA6AHB (24DB), on 30 March DL9KR (519) on CW and DG5CST (24DB), on 31 March G4YTL (25DB) and JA4UMN (26DB), on 1 April VK4EME (25DB), DK3WG (24DB) and G4YTL (24DB), on 3 April VK4EME (22DB), DG5CST (23DB) and PA2V (24DB), in the ARI EME Contest on 4/5 April [QSOs not included], 6 April R6CS (20DB), 7 April DL7APV (9DB) and JA4UMN (28DB)

– also switched from 25 m of 1/2" to 7/8" coaxial cable, on 25 April DK3WG (16DB), and on 26 April DL7APV (14DB) and PA2V (19DB), DL9KR (539) on CW, OK1YK (25DB) and HB9Q (10DB).



BD9BU 4 x 13 el DK7ZB yagis array used on 432

DB6NT: Michael db6nt@gmx.de reports on his recent operation in the 6 and 3 cm DUBUS EME Contests – On the weekend 25/26 April I worked in the 5760 Contest using CW unless noted VK3NX, PA0DZL, OK1KIR, SA6BUN, ES5PC, OK1DFC, OH2DG, PA0BAT, SM6CKU, G3LTF, OZ1LPR, G4NNS, DF3RU, VE4MA, JA1WQF, G4CCH, UA3PTW, LX1DB, PA0BAT on SSB, DF3RU on SSB, K2UYH and W5LUA for a score of 20x18. On the following weekend, 2/3 May, I worked in the 10368 Contest using CW OK1KIR, SA6BUN, OH2DG, OK1CA, OK1DFC, OZ1LPR, IW2FZR, ES5PC, HB9BHU, DL4DTU, PA0BAT, HB9Q, F5IGK, LX1DB, IK2RTI and IK0HWJ for a total of 16x13. I also tested my new station for the first time on 24 GHz. I have modified a RW1127 TWTA for 40 W. Everything worked great and I had a lot of fun with the many QSOs. Worked were OK1KIR, JA1WQF, S57NML, LX1DB, G4NNS and OZ1LPR for a total of 6x6.



3.7 m dish used by DB6NT for EME on 24 GHz

Notes on DB6NT's 24 GHz Station by OK1TEH: Michael

uses 3,7 m dish from Andrew with F/D 0.35 with VE4MA feed, MKU LNA 24 243 RX2 with 1.5 dB NF. The WG R220 relay is from Spinner. The PA is a retuned TWT RW1127 originally for 12.5 GHz (68W), which deliver 40W on 24 GHz. Transverter is a MKU 24 G3. For real time power monitoring Michael uses a 2nd horn with Shottky diode BAT15-03W detector. He gets Sun noise of 14.4 dB, Moon noise of 1.7 dB and Earth noise of 3.25 dB. (Sun and Moon noise measurements were on 27 April at about 45 deg elevation and air temperature of +20°C. See more info at http://www.db6nt.de/fileadmin/userfiles/_pdf/download_arc_hiv/24_GHz_EME_Transverter.pdf.

DK1KW: Werner wkraus@wkraus.de had a good time on the Moon between the end of March and the first weeks of April -- Although I could use only one of my 2 yagis (EF7017) because of noise problems, I managed 41 EME QSOs on 70 cm using JT65B. Worked were PA2V, R6CS, OH6UW, DG5CST, DL8DAU, EA5CJ, W2HRO, R1NW, VK4EME, JH3BHB, DL7APV, DL9KR on CW, DL6SH, HB9Q, DK3WG, UT5DL, SM7THS, ZS6JON, G4RGK, K2UYH, DK4RC, W7MEM, UA3PTW, DF3RU, LZ1DX and PA4VHF. 20 of these QSOs were made during ARI EME Contest. I was surprised to measure 3 dB of Sun noise with a single yagi.

DL0SHF: Chris (DF9CY) christoph@cpetermann.de notes that in these Corona times what else can we do but be QRV off the Moon -- Since last year the 23 cm station was struggled with PA cooling problems. After each QSO, I had to take a break to let the PA "breath" - cool down. Nevertheless, I was able to make a number of contacts even with very small stations and our power down by 8 dB. I worked on 11 Jan using JT65 ON4BCV and DG0FE, and on CW I5YFI, IK1FJI, VK4AFL, DK0SF, DJ3JJ and 4X4AJ, on 6/7 Feb using JT65C SP2SCQ, UA4LCF, 4X1AJ, ON4BCV, SM3KPX, RA4HL, LA3EQ and IZ4VSS, on 27/28 March using JT65C LU8ENU, W7SZ, PA2DW, RN4AT, ON4AOI, GM4PMK, IK5EHI, IU0BTM, DK3WG, GM0PJD, SP5GDM, OK2DL, IZ4VSS and CX2SC. Then, DK7LJ and friends found the reason for our network problems and fixed them. Its working perfectly now. On my side my son (15) set up a new computer for me and I reinstalled all the software. Now, I am able to instantly switch modes and - voila - SSB is possible as well. In the ARI Contest, I QSO'd on 4 April, using CW AA4MD, PA3FXB, DF3RU, FR5DN, OK2ULQ, IW2FZR, IK5VLS, SP6ITF, F2CT, IK1FJI, OK2DL, G3LTF, VK5MC, PA3DZL, SP3XBO, DL3EBJ, SM4GGC, IK3MAC, IK3COJ, SP2HMR and LX1DB (on SSB). I could not be QRV on 5 April because the dish became stuck at a very low angle, and ended with a total of only 21x14. This incident made Per work very hard on the 23 cm station. Now the antenna is working again and even the PA problems are solved - thank to Per's efforts. (A PDF log of my remote operation is on my website, www.df9cy.de). Per also has the DL0SHF 10 GHz beacon in full operation again.

DL7APV: Bernd dl7apv@gmx.de worked a lot of new stations on 70 cm since the end of Feb and reached DXCC 150 (mixed mode) – All of these mixed initial (#*) QSOs

were made on JT65B. I added in Feb **PJ2T**, OH1ND (KP00), IK2RHE (JN45) using a single 21 el yagi and 70 W and W9VHF (EN71) using a single 18 el yagi, 500 W and no el – I was his first EME on 432; in March ZL3AAD (RE68) - glad to find Graham back on from a new square after 20 years!, 2M0ETJ (IO85) using 14 el yagi and 50 W for 1st EME, VK4FB (QG62) using single 19 el yagi and 50 W, DG5CST (JO60) using OK1DFC's old dish, RV3YM (KO63) using 2 x 5 m yagis and 50 W for first 432 EME, IK8YSS (JN70), JH4ADK (PM64), VK4RF (QG62) using single 30 el yagi and 70 W with no el, MJ/DH7FB, RK3T (LO16) using 8 x 33 el yagis and 700 W, **XE2AT on grid dxpedition tour with a single 13 el yagi 25W from grids (DL82), (DL91), (DL92), (DL81), (DL80), (DL90), (DL93), (DL94) and (DL83)!;** IK2TIF (JN45) for 1st EME, and IZ4FUA (JN45) using single 16 el yagi and 20 W for 1st EME; and in April G4BWP (JO02), VE3MIS, WQ5S (EM13) using single 11 el yagi and 50 W, IZ1ERR (JN35) using single 19 el yagi and 50 W for 1st EME, K2UA (FN12), IU2EFA (JN45), R3KK (KO90) using 4 x 12 el yagis and 75 W for 1st EME, PA9R (JO22) using 8 x 14 el yagis and 400 W, GW3TKH (IO81), **HI8DL using single 9 wl yagi and 75 W for DXCC 149**, RA9UKW (NO34), LW2DAB (GF05) using single 18 el yagi and 50 W, IU0BTM (JN61) using a single 10 el yagi and 20 W, **9Y4D (FK90) using a single 14 el yagi and a 120 W for DXCC 150**, and IK2WPM (JN45). 70 cm produces a boost in activity from time to time. I hope to see more of this level of activity in the future – it was a very nice surprise! Here in the country, the corona crisis is not so big of a problem, and keeping everyone at a 1.5 m distance is easy.

F2CT: Guy f2ct@wanadoo.fr reports on his recent 1296 activity and other projects – I have been working hard on my 6 and 3 cm systems in order to be QRV during the upcoming REF-DUBUS Contests. My 70 cm setup is in standby, but I will be back in operation soon. On 23 cm I worked on 2 Feb using JT65C I5YDI, DJ2DY, PA3FXB, F1RJ, RA4HL, UA6LCN, ES3RF, OK1KIR, G4FQI, DF2VJ and GM0PJD; and on 4/5 April **in the ARI Contest** using CW DL0SHF, IK3COJ, JH1KRC, IW2FZR, DL3EBJ, G4CCH, IK3MAC, SP6ITF, SM4GGC, DF2VJ, UB6JNS, N4PZ, K7EME, K2UYH, IK1FJI, OK2PE and SP2HMR, on SSB LW1DB (55/55), and on JT65C, OK2DL, SP2SCQ, ES6FX, AA4MD, VA6EME, DG0FE, PA2DW, IW8RRF, PA3FXB, GM4PMK, WX4F, VE4MA, N5BF, KA1GT, VE3NXX, K2UYH, ES3RF, VK4CDI, I7FHW, IK3COJ, EI2FG, DL3EBJ, JA6AHB, F1RJ, ON4QQ, FR5DN, OE3FVU, GM0PJD, DJ2DY, IU0BTM, UA6LCN and DL1DWI. It was a very nice contest on 1296 with both analogic and digital counting for a total on CW/SSB of 18 and JT of 32 and over all 50x27. I hope to see you in the 6 and 3 cm contests.

G3LTF: Peter g3lft@btinternet.com reports a lot of good activity this month -- I was on 23 cm using CW and worked on 31 March SP6ITF, RA2FGG for initial #490 and R6CS #491, and **in the ARI Contest** on 4 April IK5VLS, W4OP, IK1FJI, DL3EBJ, PA3FXB, K2UYH, WA9FWD, SP3XBO, SP2HMR, DL0SHF, and SP6ITF. I then changed to 13 cm and worked PA0PLY, SM2CEW and G4BAO. The next day, 5 April I was on 70 cm and worked PA2V, G4RGK, DL8DAU, LZ1DX and G0JLO for a total of 11 QSOs on 23 cm, 3 on 13 cm and 4 on 70 cm – all on CW. At the absolute

perigee, on 7 April I worked on 13 cm PA3DZL for initial #147 on CW and strong on SSB. Moon noise was measured as 0.91 dB and Taurus at 0.40 dB. I was **on 6 cm for the DUBUS/REF Contest** and worked on 25 April OK1KIR, SA6BUN, OZ1LPR, PA3DZL, ES5PC, DB6NT, PA0BAT, UR5LX, SM6CKU, OH2DG, UA3PTW, G4NNS, HB9Q, SM6PGP, F5IGK, DF3RU, VE4MA, OK1DFC, VE6BGT, WA6PY, W5LUA, VE6TA and KL6M, and on 26 April JA1WQF, VK3NX, G4CCH, JA6XED for initial #88, 9A5AA, K2UYH and LX1DB for a total of 30 stations x 28; plus SP6GWN CWNR. This was a 25% increase in QSOs over last year's total. The WX was extremely kind with no wind at all, so my 6 m dish tracked really well. Sun noise measured 15.1 dB with an SF of 69 and moonnoise was 1.3-1.4 dB. My 3 cm dish was damaged in the gales this winter, but I was able to temporary lash it up to **listen during the 10 GHz contest**, but my sun noise was down from 13 dB to 9.5 dB most likely due to not having the feed properly aligned. I only had limited time to listen but heard good signals from OH2DG, SA6BUN, OK1KIR, W5LUA and OZ1LPR. I am now working on a more permanent installation arrangement.

G4BAO: John john@g4bao.com is now set up for 3 cm – I just installed a new dish to replace my not so good 1.9 m mesh dish. This change is part of a long-term plan to get on 24 GHz. It's a 1.1 m solid offset. I'm receiving the DL0SHF beacon at -10 dB and see around 7.5 dB of Sun noise. I presently have 12 W at vertical pol and F1OPA 0.7 dB NF preamp. My first week of 10 GHz operation brought digital mode QSOs on 7 April OZ1FF (14DB/19DB), on 29 April OZ1LPR (7DB/21DB), F5VKQ (14DB/19DB) and OK2AQ (15DB/20DB), on 1 May OK1DFC (16DB/15DB), on 2 May OK1KIR (12DB/18DB), PA0BAT (15DB/19DB), W5LUA (11DB/23DB) and VE4MA (17DB/15DB), and on 3 May K2UYH (12DB/22DB). QSOs were either JT4F or QRA64D and all were initials except OZ1LPR, who was also worked (569) on CW. The 1.1 m offset dish easily outperforms my old 1.9 m mesh prime focus dish! On 4 May, I fitted my 24 GHz receive system in the dish, and before optimization (only 0.4 dB Moon noise) I decoded OK1KIR on QRA64D. On The following day, I focused the dish properly to get 0.7 dB of Moon noise and look forward to next month to decode some more 24 GHz signals. I'm looking for a 25 W (or similar) TWT for 24 GHz and am happy to modify it if anyone has one going unwanted. I am afraid an SSPA is out of my price league! I am interested in skeds. Please email me direct. Clearly QRA64D seems the best option with my QRP.



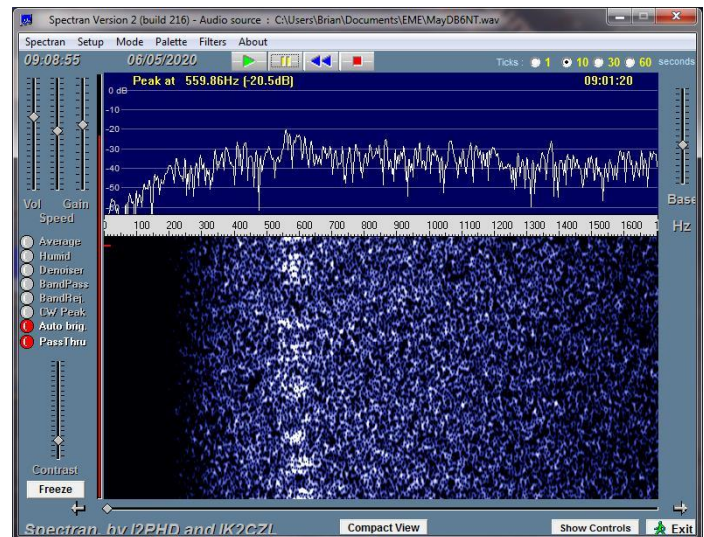
G4BAO's dish used for EME experiments on 24 GHz

G4CCH: Howard howard@g4cch.com reports on his 6 cm DUBUS/REF Contest results -- After being inactive on 6 cm since 2014, I was really pleased to be able to make a reappearance on the band in this year. The equipment is basically the same as I had in 2014, except for the feed – I built my own scaled down version of N2UO's septum feed. I was running approx 40 W at the feed of my 5.4 m dish, and 0.5 dB NF LNA. In the last few days before the contest, I finally finished my feedbox, but was unable to get it mounted on the dish for the start of the contest. I spent most of the day on Saturday making temporary attachments to the feedbox and finally got it attached to the support frame at 1700, and made my 1st QSO at 1738 with UA3PTW. Fortunately the wind was light over the weekend, as my azimuth drive has approx 1 deg of backlash, so keeping it on the Moon could have been a lot harder. I'm going to have to fix this sometime soon. I found my echoes and most signals to be weaker than I remember from 2014, but I decided to leave the finding out why till later. After checking the position of the front of my 9 cm feed in comparison to my 6 cm feed, I am convinced that my 6 cm feed is 10 to 15 mm too far out from the dish. I didn't have a chance to check Sun or Moon noise, so have to do it before and after checks when I refocus the feed. Despite all of these issues, I was really pleased to make 25 QSO's x 23 and 10 Initials in the contest. QSO'd UA3PTW for initial #42, SM6PGP, ES5PC, G4NNS, OK1KIR, SA6BUN #43, HB9Q #44, PA3DZL, VE6TA, VE4MA, KL6M #45, K2UYH, VK3NX, UR5LX #46, OH2DG, DB6NT #47, PA0BAT, OZ1LPR #48, G3LTF, SM6CKU, OK1DFC #49, DF3RU #50, W5LUA, 9A5AA and VE6BGT #51. Gotaways were WA6PY, JA6XED and JA1WQF; there were probably more from earlier on Saturday. I also made JT4F QSO's with OK1DFC (12DB/17DB) for digital initial {#2} and VE4MA (13DB/15DB) {#3}.

G4DDK: Sam jewell@btinternet.com is close to QRV on 3 cm – I have repaired problems with my Spid rotator azimuth tracking thanks to help from G4BAO. A quick check showed the DL0SHF beacon was being received at -8 dB. My Moon noise was 1 dB and Sun noise was 12.0 dB on my KTI 2.3 m prime focus dish. The feed is linear with a Kumar choke ring. I have not tried to optimize the feed position yet. I have taken delivery of some sheet aluminum and angle in order to build a reasonably weatherproof focus box for housing the LNA and SSPA. With luck, some effort and not too many distractions, I hope to be QRV on 10 GHz in the next few weeks. My transmit power will be limited to 12 W.

G4NNS: Brian brian@brcq4nns.org wanted to join in the fun on 10 GHz during the 3 cm & Up DUBUS Contest on 2 May but had problems -- I put the 3 cm gear in the dish, but found I had only 9 dB of Sun noise instead of the expected 16-17. A quick investigation did not reveal the cause. Although not a solution, I decided to wait until Sunday and set up then for 24 GHz. It was a very cloudy day, not good for 24 GHz, but I pressed on and found 12 dB of Sun noise, which is about right. I waited until moonrise before TXing, only to find I had no drive. A quick trip to the dish found the cause and with the aid of a soldering iron was QRV. By this time there were low clouds and light rain, but I found my echoes and went on to make 4 CW QSOs with RSTs

exchanged in all cases. Stations worked were OK1KIR, DB6NT for initial #6, LX1DB and OZ1LPR #7. Unfortunately, heavier rain arrived before the transatlantic window. I watched the noise floor rise by more than 1 dB in just a few seconds and my echoes disappeared. [Brian was also active during the 6 cm DUBUS Contest].



DB6NT's 24 GHz signal as copied by G4NNS

G4RGK: Dave zen70432@zen.co.uk sends his first report for 2020 -- During Jan and Feb, we had one storm after another, and extensive damage was caused to my antennas. The dish survived with only minor damage, but my 70 cm and 2 m arrays were badly damaged along with my tropo/HF antennas that were pretty much destroyed. So, most of Feb and March was spent making repairs. The first 70 cm activity was on 29 Feb when I managed to work PJ2JT for DXCC #105 with very good signals from him. The same day I worked W2HRO, I think for the first time on 70 cm. The following weekend I attempted to get the dish running on 23 cm; I found damage to the elevation readout, but managed to fix it in time to work PE1CHQ and ES3RF. I was QRV in April for the ARI Contest. I worked on 432 a total of 17 stations. Initials were R1NW, PA4VHF, RA2FGG and BD9BU. On 25 April, I got the dish going on 23 cm again and QSO'd FR5DN, ON4QQ, CX2SC and AA4MD. I was on for the 70 cm ATP, but the only CW station I found on was OZ4MM. As usual Stig had an excellent signal. I am concerned that EME2020 will have to be put back until 2021 because of the COVID-19 situation. I was looking forward to seeing many of my EME friends there.

IK1FJI: Valter valter_dls@yahoo.it participated in the ARI EME Contest on 1296 – I was QRV in both Moon passes, but not on full time; and only used CW/SSB. I worked DL3EBJ, PA3FXB, G3LTF, W4OP, SP2HMR, K2UYH, IK5VLS, WA9FWD, N5BF, OK2DL, SP2HMR, DL0SHF, JH1KRC, SP6ITF, DF3RU, SP3XBO, IK3COJ, SM4GGC, IK3MAC, DL3EBJ (SSB), OK2ULQ, G4CCH, FR5DN, RA2FGG, PA3DZL, LX1DB (SSB), AA4MD, PE1LWT, IW2FZR, F2CT, JA6AHB, SP6ITF (DUP) and PA3FXB (DUP) for a total of 32x17. All had very FB signals. I found very nice conditions with low libration, clear signals. I may have missed only one or two stations that were too weak

for me to copy. I used my 3.2 m dish with a septum feed (no flare), TH327 tube PA and 0.3 dB NF LNA from (JN44II). If interested in skeds, please email me.

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp send news on his recent activity -- I was QRV on 3 cm in DUBUS EME Contest and worked JF3HUC (559/549), OK1KIR (569/559), OK1CA (559/559) crossband (XB) - 10450/10368, OZ1LPR (579/569) XB, PA0BAT (569/569) XB, SA6BUN (569/569) XB, IW2FZR (559/559) XB, OH2DG (559/569) XB and PA3DZL (559/559) XB for a total of 9x8. Nothing was heard during my NA window on Sunday. MY equipment was a 2.4 m offset dish and a 40 W SSPA.

JH1KRC: Mike jh1krc@syd.odn.ne.jp writes on his experiences during the ARI EME Contest -- I enjoyed some very nice QSOs with good stable signals on 23 cm CW during the 2020contest. QSO'd were VK5MC, K2UYH, JA4LJB, OK2DL, IK1FJI, DF3RU, F2CT for initial #140, I5YDI, DL2EBJ, SP2HMR #141, G4CCH, IK2MMB and SP6ITF for a total of 13x9. Heard were DL0SHF, IK3COJ and KA1GT. I was very pleased to work Guy (F2CT) for the first time! Only a few JA CW ops were heard; mostly because most of 23 cm guys went up to microwave bands. NA activity was very low as usual, and I didn't operate in the second window on Sunday. I now have many trees cut down so that I can see the Moon to below 5 deg EL. In my west window, below an EL of 15 degs, signals are much attenuation due to the branches of trees, even if they have no leaves. Even in my QTH, 160 km away from Tokyo, one COVID-19 infection was reported this week. I hope everyone take very much care and keep to healthy activities.

K1DS: Rick R rick1ds@hotmail.com was QRV from his QTH in FL in the ARI Contest -- I managed to get on with single yagi antennas and a station reassembled for the ARI weekend. I was on both 2 m and 70 cm. On 432, I only worked two, DL7APV and K2UYH using JT65B; but did decode CQs and call LZ1DX, DG5CST, KU8Y and PA2V with no responses. I hope to be on with more power and also on 23 cm in the Fall.

KB7Q: Gene geneshea@gmail.com announce a 432 grid dxpedition to MT - I'm planning on 30 May for some 70 cm EME action from grid (DN55gl) in Montana. I will use WA7U's ranch location. However, things could change. I'll post pertinent info to <http://kb7qgrid.blogspot.com>.

KL6M: Mike melum@alaska.net was QRV in the 6 cm DUBUS Contest -- I was happy to get my 6 cm TWTA peaked up on the bench putting out 100 W. When I put it back in the rack; however, it only put out 65 W. I also tested my feed line, 90 feet of EW52, followed by 10 feet of flexible WG, followed by another 50 feet of elliptical guide with 2 feet of flex in the middle to go over the edge of the dish; and finally 4 feet of flex to the feed. It measured 5 dB of total loss. I think it was only 2-3 dB last year. So after all that - maybe 30 W at the feed? But, I still had great results on 6 cm with 26 QSOs with 24 mults and 7 initials as follows: VK3NX, K2UYH, VE6BGT for an initial (#), JA1WQF,

JA6XED, PA3DZL (#), OH2DG, OK1KIR, ES5PC, SA6BUN, VE6TA, PA0BAT, W5LUA, HB9Q, VE4MA (#), G4CCH (#), G3LTF, WA6PY, UA3PTW, OK1DFC (#), G4NNS (#), OZ1LPR, SM6CKU, LX1DB, SP6GWN and 9A5AA (#).

KN0WS: Carl carlhasbargen@q.com is concentrating on backyard microwave EME from his home QTH -- I tried my hand at 6 cm EME again this past month, but my RX was marked by loud static and very poor signals. I tried changing my preamp without effect, which left me to fear either my transverter or radio. [Could you have WiFi interference? Have you tried a filter?] I was at one point able to decode UR5LX at (25DB). During the DUBUS weekend I was decoded by him at (21DB) and by OK1KIR at (15DB), but I had no successful QSOs this month. The next weekend during the DUBUS weekend, I tried 3 cm and struggled again to get adequate signals from DL0SHF. Once someone on the logger suggested I check my polarity, I was able to gain 5 dB! Using QRA64D, I then QSO'd on 2 May OK1KIR (17DB), OK1DFC (18DB) and had an initial with W5LUA (14DB), and on 3 May OK1CA (17DB) and initials with K2UYH (13DB), OK2AQ (19DB) and PA0BAT (15DB). Because of the work load from Covid-19, I do not expect to have much free time this summer, and thus little time to spend at my country EME location. And do not plan to put the mesh onto my 6 m dish this year, so 70 cm is off the list for 2020.

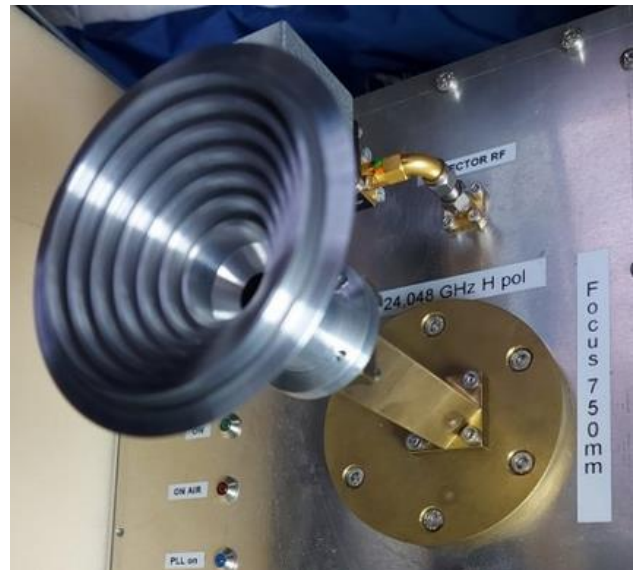
N5BF: Courtney courtney.duncan.n5bf@gmail.com in March was tied up with QRL (he is involved with the Mars 2020 Rover Perseverance project that must launch in July), and did not have much time for EME, but was able to be more active in April -- Since my last report, I worked on 1296 using JT65C CX2SC (23DB/23DB) for mixed initial #178* and W7SZ (21DB/13DB) #179*, and in the ARI EME Contest a total of 11 on JT and 4 on CW including one Italian JT and two Italian CW QSOs for multipliers. I didn't realize until near the end when working K2UYH on JT that I could work everyone in both modes for contest credit. I would have done a little better if I had realized earlier. My contest QSOs included two initials GM0PJD (24DB/16DB) #180* and W4OP (569/559) on CW for initial #49 and #181*. After the contest I had a partial with IU0BTM. We will try again when degradation is less than 2.06 dB!

OK1CA: Franta fr.strihavka@seznam.cz reports on his activity in the 3 cm part of DUBUS EME Contest -- I wanted to test my new FT991A transceiver. I installed the rig on Friday, but it was raining in the afternoon and evening, so I did not operate. On Saturday the weather was also not very good. During the EME window, there were several periods of very heavy rain, and in the evening it rained continuously. Even so, the activity on the band was great! I QSO'd OH2DG, OK1KIR, SA6BUN, JA4BLC, DB6NT, OZ1LPR, ES5PC, HB9BHU, F5IGK, DL4DTU for initial #94, 9A5AA, IW2FZR, HB9Q, SP3XBO, LX1DB, PA0BAT, VE4MA, W5LUA, SM2CEW, K2UYH, WA6PY and OK2AQ. On Sunday, the weather at my QTH was better; I added PA3DZL, JF3HUC, UR5LX, SM6CKU and IZ2DJP for a total score 28x27. I also heard UA3TCF and SP2HMR. Outside the Contest, I worked 7 stations using QRA64D for

digital initials with IZ4BFA, HB9DUK, UA3TCF, IK6CAK and SM6CKU to bring me to {# 41}.

OK1DFC: Zdenek ok1dfc@seznam.cz was active in the ARI, the DUBUS 6 cm and the 3 cm and up EME Contests -- In the ARI Contest, I chose to operate on the 10 and 24 GHz bands. During this weekend, very good conditions were predicted for 24 GHz, so I spend one orbit just on 24 GHz. I used my 2.4 m offset dish on 3 cm with 52 W and a 0.7 dB NF LNA, and on 1.25 cm with 23 W and 1.1 dB LNA. I QSO'd on 3 cm using QRA64D unless noted on 29 March at 1926 EA3HMJ (16DB/12DB), 1938 IW2FZR (17DB/16DB) and 1946 VE4MA (11DB/11DB), on 30 March at 1000 VK7MO (14DB/16DB), on 3 April at 1603 DB6NT (579/559) on CW, 1613 DF1SR (12DB/14DB), 1625 IZ4BFA (14DB/15DB) for mixed initial #53*, 1640 HB9DUK (8DB/12DB), 1640 IK6CAK (15DB/11DB) and 1653 IK0HWJ (7DB/8DB), and during the ARI Contest on 5 April at 1546 UR5LX (16DB/15DB), **1606 UN6PD (11DB/11DB)**, **JT4F #54* and DXCC 33**, 1616 I4TTZ (14DB/15DB) JT4F #55*, 1624 IW2FZR (13DB/14DB), 1633 OK2ULQ (9DB/12DB) JT4F #56*, 1647 IZ4BFA (14DB/14DB), 1651 ES5PC (8DB/13DB), 1703 IK6CAK (16DB/13DB), 1724 S57NML (9DB/12DB) JT4F #57*, 1726 UA3TCF (16DB/16DB), 1840 IK0HWJ (8DB/11DB), 1848 ES5PC (579/579) CW for initial #36, 1859 LX1DB (579/579) CW, 1916 IK2RTI (539/559) CW, #37, 1926 OK2ULQ (539/559) CW #38, 1932 OH2DG (539/559) CW and 2359 VE4MA (559/559) CW for a total on 3 cm 16x11. I QSO'd on 1.25 cm using QRA64D unless noted on 4 April in the ARI Contest at 1521 JA1WQF (12DB/19DB) for mixed initial #9 and DXCC 8, 1803 LX1DB (559/549) CW for initial #2 and DXCC 9, 1853 OH2DG (14DB/21DB) #10* and DXCC 10, 2208 PA0BAT (16DB/19DB) JT4F, 2232 OZ1LPR (15DB/22DB) JT4F and 2308 OK1KIR (15DB/17DB) JT4F for a total on 24 GHz of 6x6. In the DUBUS 6 cm Contest conditions were good, with only spreading at maximum elevations of up to around 160 Hz causing signals to sound like aurora. The activity was great. I worked 27 QSOs and 25 multipliers. A highlight was a QSO with VK3NX my last continent for 5760 WAC. Equipment and the dish worked well all the time and Mr. Murphy took a vacation this time. I used my 2.4 m offset dish and 110 W at my septum feed and a 0.7 dB NF LNA. I QSO'd using CW unless noted on 25 April at 0700 JA6AHB (18DB/19DB) QRA64D, 0709 OK1KIR (559/559), 0730 PA3DZL (559/559) for initial #22, 0738 SA6BUN (559/539), 0827 OZ1LPR (559/549), 0845 OH2DG (559/559), 0851 JA1WQF (559/559), 0911 DB6NT (579/559) #23, 0934 UA3PTW (539/549), 0948 G4NNS (O/O), 1516 HB9Q (599/559) #24, 1532 DF3RU (559/559), 1542 IK3COJ (539/559), 1549 K2UYH (539/559) #25, 1557 G3LTF (559/559), 1601 UR5LX (O/O) #26 and 1606 W5LUA (559/549) #27, and on 26 April at 0747 **KL6M (O/O) #28 and DXCC 24**, 0756 PA0BAT (559/559), 0811 ES5PC (559/559) #29, **0824 VK3NX (O/O) #30 and DXCC 25 for WAC**, 0945 JA6XED (539/559) #31, 1520 G4CCH (17DB/12DB) JT4F for mixed #33*, 1532 OK1KIR (15DB/14DB) JT4F, 1538 VE4MA (17DB/15DB) JT4F, **1604 LX1DB (579/569) #32 and DXCC 26**, 1720 G4CCH (O/O) #33, 2014 VE4MA (559/559) #34, 2038 VE6TA (O/O) #35 and 2051 VE6BGT (O/O) #36. In the 3 cm & Up Contest I was QRV on both 10 and 24 GHz. I worked on 3

cm using QRA65DOK2AQ (15DB), IK6CAK (15DB), G4BAO (15DB) and IZ4BFA (15DB), and on CW OZ1LPR (579), SA6BUN (569), PA0BAT (559), OH2DG (559), DB6NT (569), OK1CA (569), IW2FZR (559), ES5PC (559), OK2AQ (559), F5IGK (559), SP3XBO (O), UA3TCW (O), OK2ULQ (449), OK1KIR (579), DL4DTU (559), SM2CEW (539), 9A5AA (539), IK0HWJ (559), K2UYH (559), OE5VRL/5 (559) and VE4MA (559), and back on QRA64D KN0WS (16DB) and VE6TA (17DB). My CW total was **21x19**. On 24 GHz, I worked OK1KIR (11DB) QRA64D, OK1KIR (O) CW, OZ1LPR (O) CW, W5LUA (7DB) QRA64D and heard DB6NT (559) CW. My CW total was **2x2**.



OK1DFC's 24 GHz feed optimized by OK2AQ
(For info <http://www.ok1dfc.com/eme/24ghz/feeds.htm>)

OK1KIR: Vlada vlada.masek@volny.cz and Tonda report on the 6 cm DUBUS and 3 cm & up DUBUS Contests results – Despite very bad WiFi interference, we did reasonably well in the contest. On Friday, 24 April before the contest, we tested our 6 cm equipment to verify how bad was the WiFi disturbance. We measured a moonnoise (MN) of 2 dB and decoded KN0WS (15DB). However, Carl's RX was still deaf. In the 6 cm contest on Saturday, 25 April we made CW QSOs at 0542 OH2DG (569/569), 0553 VK3NX (559/559), 0557 UA3PTW (559/569), 0602 SA6BUN (579/569), 0621 JA1WQF (559/559), 0659 UR5LX (O/O), 0711 OK1DFC (559/559), 0718 KL6M (569/559), 0728 HB9Q (589/579), 0740 PA3DZL (569/569), 0832 DB6NT (559/559), 0845 G3LTF (559/559), 0855 OZ1LPR (559/569), 0910 SM6CKU (559/569), 0924 G4NNS (559/569), 0935 ES5PC (569/569), 0954 PA0BAT (569/569), 1508 W5LUA (569/559), 1522 DF3RU (569/559), 1555 K2UYH (559/559), 1609 VE4MA (559/559), 1734 SM6PGP (559/559), 1755 VE6BGT (569/569) for initial #112, 1813 VE6TA (559/559), 1828 WA6PY (559/569) and 1845 G4CCH (569/569), and on Sunday, 26 April at 0656 JA6XED (569/569), 1142 9A5AA (O/559) and 1255 LX1DB (579/559). Head were IK2RTI, F5IGK, JA6AHB and SP6GWN. During both moonsets, somebody called us very carefully but due to local WiFi interference, which raised up during the weekend (Covid-

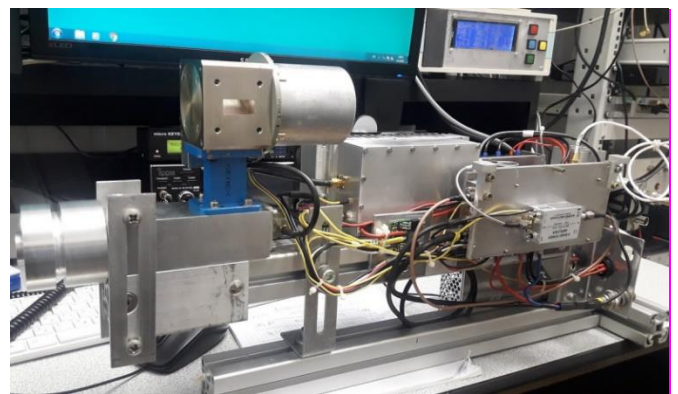
19 influence), we were unable to dig out the callsign. Maybe, a slower keying could help, sri. Overall we achieved a score of 29x26. Off contest, we worked on Sunday, 26 April using QRA64D at 0733 JA6AHB (10DB/11DB) and with JT4F at 1528 OK1DFC (14DB/15DB). Dubus contest 10 GHz and up at OK1KIR. The next weekend we were QRV for 10/24 GHz DUBUS Contest. The whole first Moon pass on Saturday, 2 May, we devoted to 10 GHz operation. We completed 31 CW QSOs. We added initials with OK2ULQ #133, IK0HWJ #134 and OE5VRL #135. Unfortunately JA6XED was not completed due to decreased output power due to our 10450 transverter (probably from overheating from long CQs in JA band, Hi). Overall our 3 cm results were 31x28. MN was 2.6 dB. Off contest, we worked with JT4F IK0EQJ for digital initial {#205} who used only an 85 cm dish and 20 W for his first EME on 3 cm, G4BAO {#206}, IZ4BFA {#207} and VE6TA {#208}. On Sunday, 3 May, we operated only on 24 GHz. Regardless of rainy and cloudy weather, we completed 8 CW QSOs, and initials with DB6NT for #29 - very nice signal from Michael's 3.7 m dish and 40 W, and S57NML #30. Overall 24 GHz contest result was 8x8. Off contest using QRA64D, we worked S57NML for digital {#46} and our first 24 GHz S5-OK QSO after many previous attempts when Andrej received us trying JT4F/QRA64D, but at quite high spreading windows. On 3 May, we were at last able to utilize the low spread time during the Andrej's otherwise quite limited Moon window. However, we passed minimum spreading time and still succeeded after jumping over the last hurdle. It was the fact that Andrej's 2 m IF TX was jumping some 1.5 kHz down from his RX QRG, becoming therefore invisible on our WSJT display window. Andrej is using 1.8 offset dish and up to 20 W from a TWT. Later on our QRA64D signal was received and decoded by G4BAO at (18DB). John is optimizing illumination of his 1.1m offset dish and it was his first EME signal reception on 24 GHz. Otherwise we measured SN at 15 dB. MN was up to 2.6 dB without clouds, but falling below 2.4 dB when cloudy. During the light showers especially at lower elevation, the atmospheric attenuation raised up and signals almost disappeared – quite typical for the 24 GHz band.

OK1TEH: Matej ok1tehlist@seznam.cz was QRV during ARI EME Contest in April and worked on 70 cm with his small yagi 24 QSOs all on JT65B consisting of DG5CST (23DB), JH3BHB (26DB) for a mixed initial (*), JA6AHB (22DB), UT5DL (23DB), DL7APV (13DB), DL6SH (18DB), DK4RC (23DB), PA2V (22DB), HB9Q (14DB), DK3WG (24DB), G4RGK (25DB), SM7THS (22DB), EA5CJ (19DB), R1NW (27DB) (*), DF3RU (18DB), K2UYH (21DB), LZ1DX (24DB), R6CS (24DB), W7MEM (23DB), OH6UW (28DB), UA3PTW (22DB), ZS6JON (24DB) - using a new 4.5 m dish, DL5FN (22DB) and W2HRO (25DB); and after the contest PA4VHF (29DB) (*) - using 4 x 21 el F9FT yagis and 200 W PA. Later at end of April I tried with ZL3AAD, who has 4 x LY and good power. Graham copied me very well, but I suffered from city noise at the low elevation and we didn't complete. What is interesting, is that he doesn't have moonset into ocean, but into a hill - forget any ground gain. He has to stop at an el of about 3 degs. I hope to try again with Graham during our next common

window, The QRB is something over 18,100 km, making our common window quite short.

OK2AQ: Mirek mirek@kasals.com writes on his recent 10 GHz operation -- One week before the 3 cm & up DUBUS Contest, I installed a long-prepared 1.8 m offset dish. After focusing and calibrating position, I measured Sun noise at 12 dB at an SFU = 69 and Moon noise = 1 dB, which corresponds to calculations. I was able to work several stations with small dishes (~ 1 m) and outputs of about 10 W worked, which was no small challenge. I QSO'd using QRA64D unless noted on 28 April, IW2FZR (23DB/15DB) for digital {#75} and DL6ABC (12DB/17DB), and on 29 April HB9DUK (14DB/16DB) {#76} and G4BAO (20DB/15DB) {#77} with JT4F, on 30 April S57NML (14DB/17DB) {#78}, IW2FZR (20DB/14DB) and IZ4BFA (22DB/18DB) {#79} and on 1 May OK1DFC (14DB/14DB) with JT4F and HB9DUK (14DB/16DB). Then for the DUBUS Contest, I switched to CW and worked on 2 May OZ1LPR (579/559), OK1DFC (549/539), OK1KIR (559/549), SA6BUN (559/529), HB9Q (559/539) for initial # 16, OH2DG (559/559), LX1DB (559/559), PA0BAT (559/549) #17, W5LUA (O/O) #18 and OK1CA (O/O), and on 3 May UR5LX (O/O), PA3DZL (549/529), IK0HWJ (559/519) #19, 9A5AA (O/O) #20 and SP2HMR (559/O) #21 for a total score of 15x13. Out of contest, I worked using QRA64D on 2 May W5LUA (10DB/16DB), and on 3 May OK1CA (13DB/11DB), KN0WS (22DB/23DB) {#80} and state of MN, HB9DUK (15DB/18DB), UR5LX (15DB/14DB), I4TTZ (22DB/19DB) {#81}, IK6CAK (22DB/17DB) {#82}, UA3TCF (17DB/14DB), IK0HWJ (10DB/14DB) {#83} and PA0BAT (10DB/10DB). More info can be found on my webpage at <http://www.urel.feec.vutbr.cz/esl/files/EME/EME10368.htm>

OK2ULQ: Peter ok2ulg@seznam.cz is new station on 10 GHz EME operating with a CP feed, good power and a 3.7 m dish – In the ARI Contest, I operated on 23 cm and completed 19 contacts using JT65 including initials with UA6LCN, F1RJ and ON4QQ. On 3 cm I made my first QSO with OK1DFC first on QRA64D and later on CW, followed by ES5PC, UR5LX (CW) and OH2DG (CW). During DUBUS Contest I worked on 3 cm OK1KIR, OZ1LPR, HB9Q, SA6BUN, PA0BAT and LX1DB all on CW for a score of 6x6.



OK2ULQ's system consisting of OM6AA feed, DB6NT LNA and OK2AQ PA (~ 50 W out)

ON0EME: Eddy (ON7UN) ejespers@telenet.be reports the refurbished PA was installed in the beacon again -- The antenna was also calibrated to ensure accurate Moon tracking. The beacon has now been transmitting for several weeks all has been well. Our ON0EME domain name got hijacked. The status of the moon beacon can be checked now at following URL www.on0eme.be. Reception reports are always welcome.

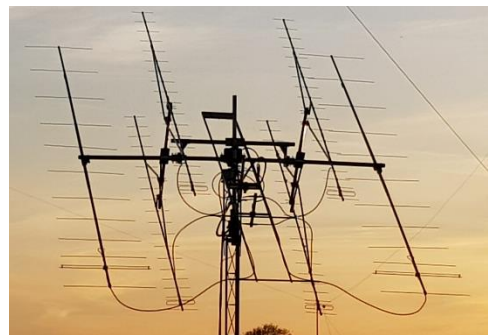
PA2DW: Dick <qtc@kpnmail.nl> was QRV on 1296 for one night of the ARI Contest [see end of report for back story] - I had fun working SM4GGC (CW), OK2DL (CW), F2CT (JT), DL3EBJ (CW and JT), G4CCH (CW), WX4F (JT), DG0FE (JT), LU1GCB (JT), VA6EME (JT), LU8ENU (JT), N5BF (JT) and PA3FXB (JT) for a total of 13 x 11. (Despite what I had in mind originally, I was only on for one night. Over the past weeks, I had mild symptoms of the COVID-19 virus; so my wife wanted me to take it easy. My smell has been totally absent for 3-4 days, followed by an enhanced temperature to 38 degs C and heavy coughing. I am well again now, just some coughing in the morning remains. Temperature is also back to normal and I can smell the coffee again. My wife so far only had a dripping nose and coughing. We cannot be sure if we really had the virus, in our country testing facilities are limited to worst cases.

PA3DZL: Jac pa3dzl@icloud.com writes on his activity before, after and during the ARI Contest – I worked on 4 April on 23 cm 30 QSOs and 7 initials with IW8RRF, ON4QQ, JA8SZW, EI2FG, F5IGK, DG0FE and IU0BTM; and on 5 April on 13 cm 8 QSOs and 1 initial with F5HRY. Prior to the contest, I QSO'd on 23 cm DL1DWI using a 70 el yagi and 500 W and FR5DN for a new DXCC. Both were initials. Later on 13 cm, I had very nice CW QSO with OH2DG (589/589) and G3LTF (579/579) and a solid (55/55) on SSB - very nice conditions. There were also nice conditions for 6 cm DUBUS Contest weekend. The WX too was very nice here in PA. Almost all the CW signals were very easy copy. I worked UA3PTW, OH2DG, VK3NX, HB9Q, KL6M for initial #71 on my moonrise, SA6BUN #72, JA1WQF, OK1DFC, OK1KIR, UR5LX, DB6NT #73, ES5PC, OZ1LPR, SM6CKU, G3LTF, PA0BAT, G4NNS, DF3RU, VE4MA, W5LUA, VE6BGT #74, VE6TA, K2UYH, WA6PY, G4CCH, 9A5AA, LX1DB and SM6PGP. I also heard KL6M on my moonset! The strongest CW signals were from HB9Q, SA6BUN, W5LUA and VE6BGT. There were also very nice SSB signals from DB6NT, PA0BAT and DF3RU. Unfortunately, I could not get the attention of JA6XED and WA9FWD. My score was 28x26 and 4 initials. I had a very nice time on 10GHz. Very nice signals and beautiful echoes. I also had an excellent time during the 3 cm DUBUS EME Contest. I was only able to be QRV on Sunday 3 May. Worked using CW were JA4BLC XB, SA6BUN for an initial (#), SP3XBO (#), OK1CA, SP2HMR (#), OZ1LPR, IW2FZR, HB9BHU, UR5LX, ES5PC, 9A5AA, OH2DG, PA0BAT and OK2AQ for a total of 14x14. Heard were JF3HUC and OZ1FF. I also worked using QRA64D, on the same day F5VKQ for a mixed initial (*), I4TTZ (*), PA0BAT and IK6CAK (*), and on 4 May HB9DUK (*), IZ4BFA (*) and SM6CKU, and on 5 May DB6NT using CW and SSB (54/54), UA3TCF and SM6CKU using CW and

QRA64D. My rig is 3.7 m Andrew solid dish, 60 W @ feed and 0.6 dB NF LNA. On the 4 May my Moonnoise was 1.8 dB. Note, I am not an initial because I moved to a new QTH in the same GRID (JO21).

PA3FXB: Jan jvm@netvisit.nl writes -- The ARI EME contest was a very welcome distraction from the CORVID-19 confinement. I had planned to operate this year's ARI contest at PI9CAM but ASTRON, CAMRAS and the dish are completely closed now because of the virus. So I entered the contest from my home on 23 cm. It was great fun. I ended up with 63 QSO's. 17 on CW and the rest on JT65C. It was my best ARI result ever. I fear that this year's EME conference may not happen. I cannot imagine how the virus can be 100% under control in Aug. I guess it will be postponed to 2021.

PA4VHF: Dick pa4vhf@gmail.com is a new 432 EMEer – I recently made my first attempts on 70 cm EME after I restarted on EME on 144 about 2 years ago. My station consists of 4 old 21 el Tonna (F9FT) yagis, 150-200 W at feed point from an SSPA and a Elecraft K3 with TR432H transverter. Nevertheless, the system seems to perform very well; my receiving capabilities seem to be excellent according the signal reports and comments from my QSO partners. When QRV, you can find me on HB9Q or N0UK EM chat. I have worked first with 2 yagis DL7APV (15DB/24DB), PA2V (20DB/27DB), HB9Q (9DB/19DB), DK3WG (DB18/O), UA3PTW (17DB/18DB), DL9KR for first 432 CW EME QSO, and UT5DL (21DB/28DB); then with 4 yagis UT6UG (16DB/23DB), DL5FN (13DB/24DB), DK4RC (20DB/24DB), OH6UW (28DB/26DB), DG5CST (13DB/O), JA4UMN (19DB/21DB), JH3BHB (21DB/16DB), DL6SH (9DB/18DB), R1NW (22DB/21DB), ZS4TX (17DB/26DB), SM7THS (17DB/20DB), G4FUF (15DB/24DB), DL8DAU (16DB/27DB), S51LF (17DB/24DB), W2HRO (15DB/24DB), G4RGK (13DB/22DB), LZ1DX (21DB/22DB), ZS6JON (13DB/23DB), DF3RU (13DB/O), OK1TEH (21DB/29DB) with single 23 el yagi, DK1KW (19DB/25DB) with single 17 el yagi, and 4Z5CP (24DB/25DB).



PA4VHF's 4 xF9FT array in center – still work well

SA6BUN: Michael sa6bun@gmail.com was QRV with a big signal in both the recent 6 and 3 cm DUBUS Contest; here he reports on 13 cm -- As my 2320 high power license is still valid, I have decided to give it a go with a more provisional lash-up. I would love to test on CW with someone. The station is marginal with a 3 m dish; I can hear my echoes pretty good. My Sun and Moon noise; however,

fall a little short. My TX power is about 500 W (2320), and I have US band RX capability for XB operation. If someone wants an initial, PSE send a request for a sked.

SM2CEW: Peter sm2cew@telia.com was QRV in 3 cm DUBUS Contest – Using CW in the 10 GHz contest, but only late during the window on Saturday evening, I worked on random OK1DFC, SA6BUN, ES5PC, OH2DG, OK1CA, OK1KIR and WA6PY for a total of 7x4. Heard were IK2RTI, PA0BAT, IK0HWJ?, LX1DB, W5LUA, K2UYH, IW2FZR and OZ1LPR. I have received another temporary license (6 months) for EME operation on 13 cm and will thus remain QRV with my 8 m dish and 50 W. I am looking forward to the 13 cm leg of the DUBUS/REF Contest. My license expires by the end of Sept, and am hoping to catch a few more new ones on 13 cm CW EME before then. Skeds welcome.

SM4GGC: Stig sm4ggc@gmail.com was active in the ARI EME Contest on 23 cm sporadically – I used only CW/SSB on 5/4 April to work DL0SHF (579/579), OK2DL (569/569), IK1FJI (559/559), SP2HMR (559/559), DL3EBJ (569/579), F2CT (559/559), LX1DB (56/569) SSB/CW, SP6ITF (559/559), IK3COJ (559/559), DF3RU (559/559), SP3XBO (559/559), W4OP (569/569), PA2DW (559/559), AA4MD (559/559), WA9FWD (559/559), G4CCH (569/569), IK5VLS (559/559), SP2HMR (559/559), IK2MMB (559/559) and PA3FXB (559/559) for a total of 20 QSOs in 14 mults. My rig is a 3.9 m dish with 500 W at my Septum feed and a G4DDK LNA.

SM5DGX: Anders jatk@live.se is a new *big gun* on 1296 EME -- Last time I worked EME was for more than 30 years ago. I have built an 8 m dish, f/d 0.55, and so far have 400 W at feed, but am working on a TH347 PA. The dish is made from 20x20x1.5 mm square galvanized steel (~1000 Kg) and covered with 12x2 mm chicken net. The concrete base is 15,000 Kg. Tracking is with US Digital readouts and F1EHN card. I use a hydraulic system for elevation. It took me starting from scratch in March to Oct 2019 to be ready for operation, but am still fine tuning everything. I am most interested in CW and SSB, but I will try the new digital modes a try. More details can be found on my webpage (sm5dgx.se) and my rotation system at <https://www.youtube.com/watch?v=nwp0zPfe2Ro>. In the near future, I will add 3 cm EME with a 4 m dish, DB6NT transverter and perhaps 150 W TWTA.



SM5DGX's new 8 m dish

SM6CKU: Ben ben@sm6cku.se writes on his experiences in the recent DUBUS Contest weekends -- Signals were pretty good and everything worked OK during the 6 cm weekend. Unfortunately, I am not able to point the 4 m dish before 106 degs in AZ and missed VK3NX and some of the JA's. I worked SA6BUN, OK1KIR, PA3DZL, DB6NT, JA1WQF, PA0BAT, ES5PC, G3LTF, OH2DG, OZ1LPR, UR5LX, OK1DFC, VE4MA, W5LUA, K2UYH, UA3PTW, G4NNS, HB9Q, 9A5AA, DF3RU, G4CCH, SM6PGP, WA6PY, KL6M and LX1DB for a total of 25x23. All stations heard were worked, but there were no initials. The next weekend I wanted to be on for the 3 cm Contest. However, Saturday was lost because of bad WX, but Sunday gave us sunshine, and my 10 GHz box was installed. I did lose some operating time due to our wedding anniversary, and had some elevation tracking issues with the 4 m dish. Nevertheless, I worked HB9BHU, OH2DG, SA6BUN, OK1CA, OZ1LPR, IW2FZR and ES5PC for a total 7x7 on CW. IZ4BFA (1.2 m dish and 8 W) and OK1CA were worked on QRA64D out of the contest. I also was on 23 cm on 28 April and worked DG5CST (strong) on CW and 4X1AJ, AA4MD, IK1FJI, UA6AH and PA3FXB on JT65C.

SV5/HB9CRQ: Dan (HB9Q) dan@hb9q.ch has been forced to POSTPONE the May dxpediton to Rhodes -- Our flight was canceled and there still is a 2 weeks quarantine in Rhodes if you arrive from abroad. The GOOD NEWS is we have already reserved the QTH and exchanged our flight tickets for May 2021. We will send out detailed information this summer. Please reserve 14 - 16 and 21-/23 May 2021 for microwave EME.

TX7EME: Giulio (IW3HVB) iw3hvb@gmail.com has had to also postpone their 23 cm dxpediton to Rangiroa due to the COVID-19 situation -- The new 2 m dish was ready to be tested, but we are forced to cancel the whole trip. I strongly hope to be able to go next year assuming the travel industry will have recovered from this unprecedented disaster, and will keep you posted.

UR5LX: Sergey ur5lx@ukr.net was QRV in the ARI Contest on 3 cm – Before the contest, I worked S57NML (14DB/15DB) using QRA54D for mixed initial #109*. During the contest on 4 April, I made 16 QSOs. 10 QSOs were with QRA64D and 6 using CW. Initials were F5JWF (559/559) #110* and OK2ULQ (O/O) using CW #111* (2.4 m offset dish and 20 W) – his first CW QSO via Moon, and I4TZZ (19DB/22DB) on QRA64D (1.2 m dish and 13 W) #112*. [Sergey was also QRV in the DUBUS 6 and 3 cm EME Contest, but have not received his reports].

VE6BGT: Skip macaulay.skip@gmail.com operated the 6 cm DUBUS event with his new feed -- Unfortunately there were high gusty winds that prevented participation for the whole weekend. There were times the signals shown on the bandscope would completely disappear, and when I looked up at my remote camera used for watching the dish, it would be bouncing back and forth similar to a flag pole! The next day, the wind gusts were still around, but had changed directions slightly and this helped a lot. This is typical for Alberta in the spring. My QSOs included many initial contacts for me on 6 cm. Worked were KL6M

(569/449), JA1WQF (569/569), VK3NX (559/559), JA6XED (559/569), ES5PC (559/559), SA6BUN (559/569), G3LTF (579/569), DF3RU (569/569), UA3PTW (569/559), OZ1LPR (569/569), VE4MA (569/559), OK1KIR (569/569), PA0BAT (569/569), WA6PY (579/569), W5LUA (579/579), K2UYH (559/559), G4CCH (579/569) and VE6TA (579/569) for a total of 18x18. Next is project to get my new 150 W SSPA for 9 cm tested and up to the dish mount for a test run.



VE6BGT's 6 cm 100W PA (based on SM6PGP design)

VE6TA: Grant ve6ta@xplornet.com send news on his recent DUBUS activity -- During the 6 cm contest I tried to put my new high power surplus amplifier in service for the first time. Never a good idea as things always seem to need some bugs worked out, and this time my TX signal sounded like hash. So listened for the first pass to Asia and heard several stations on, including JA1WQF, VK3NX, and others. Finally sorted out the problem and re-arranged the power supply at the dish feed so that the transverter didn't see any voltage drop. I worked in the contest (all on CW) SA6BUN, ES5PC, PA3DZL, PA0BAT, OK1KIR, W5LUA, KL6M, WA6PY, G4CCH, G3LTF, JA1WQF, K2UYH, VE6BGT, VE4MA and OK1DFC for initial #37 and a total of 15x14. After the contest I arranged a sked with UR5LX and worked him #38 as well as OZ1LPR, and SA6BUN. It was great to hear all the 6 cm activity and much nicer to work others with 75-80 W instead of 35. During the 3 cm contest I was primarily interested in testing my 5.5 m mesh dish to see if I could get it to work at all on 10 GHz. Sun noise was tweaked to 9.7 dB at 69 SF. Equivalent to a 4-5 ft dish... Still the beacon sounded as good as it did with the 3 m dish that I used previously on this band. I heard many CW stations, but with only 20 W, it was difficult to make a random QSOs. Eventually I was able to attract OK1KIR's attention and we completed a CW QSO for 1 contest QSO. I also used QRA64D for the first time on 3 cm. It was a large learning curve for me – my thanks to VE4MA for his coaching. I worked 4 stations with this mode, including two initials, OK1DFC mixed #14* and K2UYH #15*.

W4OP: Dale parinc1@frontier.com sends his results for the Spring ARI Trophy Contest -- Given that I do not have a west window, the Moon was in poor positions for me. However, in the contest I worked on 1296 using CW DL3EBJ, IK5VLS, G3LTF, IK1FJI, K2UYH, SP2HMR for an initial(#), WA9FWD, N5BF (#), SP6ITF, IK3COJ, PA3FXB,

OK2DL, G4CCH and AA4MD for a total of 15x12. There is no new work on the 15' dish, although I did order aluminum to back up the ribs that will support my feed.

W5LUA: Al w5lua@sbcglobal.net sends news of his recent microwave EME QSOs -- On 9 cm on 25 April, I had a nice CW QSO with VK4AFL. Then, I moved up to 5760 for the DUBUS 6 cm Contest and worked using CW 24 stations including OK1KIR, SA6BUN, OH2DG, SM6CKU, OK1DFC, ES5PC, PA3DZL, G4NNS, G3LTF, OZ1LPR, PA0BAT, UA3PTW, VE4MA, VE6TA, KL6M, JA1WQF, WA6PY, K2UYH, VE6BGT, JA6XED, DF3RU, DB6NT, G4CCH, and 9A5AA for total of 24x21. On 1 May, I worked on 3 cm WA9FWD for a new state. On 2 May on 3 cm during the DUBUS 3 cm and Up Contest using both CW and QRA64D, I worked OK1CA, IW2FZR, OK1KIR, OZ1LPR, KN0WS for a new state, G4BAO, OK2AQ, SA6BUN, and VE6TA. On 3 May on 24 GHz, I worked OK1KIR and OK1DFC. At the moment, the 24 GHz feed is in place on my 2.4 m offset feed dish, and can be replaced easily with the 47 GHz feed.

WA3QXP: Paul wa3qpx@atlanticbb.net made his first contacts on 25 April on 23 cm with his new dish – I am now using a 3.5 m TVRO dish, 250 W PE1KR SSPA and Demi preamp. I found the optimum feed point was not where I expected it to be. I used a signal source about 500 m away to peak on its signal while sliding septum my feed's position. I sent the signal from my receiver (Flex radio) to my cellphone display. This saved a lot of back and forth to shack. I have worked using JT65C DLOSHF (2DB) - I could have copied him on SSB, OK1IL (14DB) to give him MD for State 25, PA3FXB, NC3I, AA4MD, K5DOG and a near miss with DK3WG. I am now using WSJT-X and I like its automatic Doppler tracking, but have some learning to do. I also have a noise problem from my SSPA and will probably have to turn it off on RX. It is great to finally be in operation after having lost 2 previous dishes in stormers before they were ready to be used.



WA3QXP's 3.5 m TVRO dish with 23 cm feed

WA6PY: Paul pchominski@maxlinear.com reports on his recent contest operation -- I was QRV in **DUBUS 6 cm Contest** on 25-26 April and QSO'd SA6BUN, UA3PTW, G3LTF, ES5PC, VE6BGT, OK1KIR, K2UYH, HB9Q, OH2DG, PA0BAT, PA3DZL, VE6TA, W5LUA, KL6M, JA6XED, DF3RU, SM6CKU and LX1DB for a total of **18x19**. I was suffering from WiFi like QRM; it was stronger than the last time that I operated on this band. The following weekend I was QRV for the **DUBUS 3 cm Contest** on 2-3 May and worked SA6BUN, 9A5AA, OK1CA, SM2CEW, ES5PC, OZ1LPR and OK1KIR for a total of **7x6**. I plan to be on 13 cm in the next section of the contest.

WA9FWD: John WA9FWD@outlook.com writes about the recent DUBUS Contest efforts -- The **6 and 3 cm contests** have been difficult for me. When I installed the 6 CM equipment, I found that the noise level had increased considerably with noise peaks were hitting S9+30 dB! I managed to work ES5PC and SA6BUN through the QRN, but gave up. Finding moon noise was out of the question and even Sun noise was difficult. I am looking at increased filtering, but if cannot find a solution will have to give up on this band. For the next weekend on **10 GHz**, I put the feed in my 4 GHz dish to see what it could do on 3 cm. I got off to a good start before the contest by working W5LUA for initial #11 and OK1KIR. Once the contest started, I worked OK1KIR again before I lost the Moon. On Saturday afternoon, I was hearing stations including PA0BAT, IW2FZR and SA6BUN, but called with no response. After checking, I found that my waveguide relay had failed. After losing time to repair the relay, I worked OZ1LPR and SA6BUN before EU I lost the Moon. I was on again on Sunday and found OH2DG and PA0BAT #12 for a total of **5**, one less than last year. It is clear that my 4 GHz dish doesn't work well at 10 GHz. For the foreseeable future, I will have to live with what I have, but I will be taking the dish down soon to rejuvenate the parts that have served me so well for the past 21 years. Hopefully I will be back on before the next contest segment.

WB2BYP: John storyavenue@hotmail.com sends news on his efforts to add 6 cm using his 28' dish -- I've recently installed a feed mount for 6 cm on a linear actuator to probe the feed point remotely, while looking at Sun and Moon noise. It did not turn out quite to predictions, may be due to combination of phase and feedthrough limits of the dish. I was able to copy on CW signals (presently RX only) from PA0BAT, PA3DZL, DF3RU, ES5PC, W5LUA, SA6BUN, UA3PTW, G3LTF, G4CCH, OK1KIR, OZ1LPR and KL6M during the **DUBUS event**. I am looking for a SSPA in the 25 W range.

K2UYH: I (Al) alkatz@tcnj.edu was QRV for the ARI, 6 cm and 10 DUBUS Contests -- This a busy, but fun month with all the contest activity. I was disappointed that none of the others that usually operate contest with me could join in because of the COVID-19 restrictions and common sense. During the **ARI Contest**, I operated only on 70 and 23 cm and switched between CW and JT. I QSO'd on 4 April starting on 1296 at 0037 IK1FJI (579/579) CW, 0043 G3LTF (569/579), 0047 SP2HMR (569/579) CW, 0051 W4OP (579/589) CW, 0057 SP3XBO (559/559) CW, 0111

DL3EBJ (4DB/5DB) JT65C, 0117 DF2VJ (13DB/9DB) JT65C, 0123 GM0PJD (15DB/O) JT65C for mixed initial #635*, 0129 PA3FXB (7DB/9DB) JT65C, 0135 AA4MD (2DB/6DB) JT65C, 0141 LU8ENU (14DB/O) JT65C, 0210 IK5VLS (12DB/11DB) JT65C and 0238 N5BF (559/559) CW; then on 432 at 0315 DF3VJ (13DB/13DB) JT65B for mixed initial #1011*, 0318 VE3MIS (12DB/13DB) JT65B #1012*, 0335 W2HRO (O/O) JT65B, 0637 JA6AHB (15DB/13DB) JT65B, 0650 JE2UFF (23DB/-) JT65B -- NG as my 432 TR relay failed; switched back to 1296 at 0738 VK5MC (559/559) CW and 0747 JH1KRC (569/569) CW and moonset; back to 432 when Moon returned at 2050 PA2V (5DB/13DB) JT65B, 2252 DL6KAI (7DB/11DB) JT65B, 2258 DL6SH (8DB/7DB) JT65B, 2304 OK1TEH (14DB/21DB) JT65B, 2307 KO4MA (18DB/18DB) JT65B, 2311 DK1KW (14DB/19DB) JT65B, 2319 DL7APV (1DB/6DB) JT65B, 2329 4Z5CP (10DB/1DB) JT65B, 2335 R1NW (8DB/19DB) JT65B #1013*, 2341 LZ1DX (4DB/17DB) JT65B, 2349 S51LF (9DB/O) JT65B, 2255 DK4RC (11DB/O) JT65B and 2357 OK2AQ (17DB/22DB) JT65B #1014*; on 5 April still on 432 at 0003 R6CS (5DB/18DB) JT65B #1015*, 0012 K1DS (23DB/O) JT65B, 0028 XE2AT (22/O) JT65B, 0035 LU1CGB (21DB/O) JT65B, 0053 DG5CST (7DB/O) JT65B and 0107 KF8MY (13DB/15DB) JT65B; switched to 1296 at 0137 IK5VLS (569/559) CW, 0141 DL3EBJ (569/579) CW, 0154 IW8RRF (12DB/10DB) JT65C #636*, 0204 LU1CGB (8DB/O) JT65C, 0212 F2CT (5DB/8DB) JT65C, 0222 F2CT (569/579) CW, 0245 N5BF (4DB/O) JT65C, 0737 JA6AHB (1DB/3DB) JT65C, 0754 VK2JDS (6DB/4DB) JT65C and 0810 JA6AHB (569/589) CW; back to 432 at 0841 VK4EME (15DB/8DB) JT65B and 0841 JH3BHB (12DB/O) JT65B #1016* for a total (CW and JT) on 432 of **24x13** and on **1296 of 25x14**. I like the counting of both CW and JT QSOs for the total score, but see the place for both types of contests. I was next active for the **5760 DUBUS EME Contest**. I worked on 25 April using CW at 0015 VK3NX (559/559), 0020 KL6M (559/559), 1546 OK1DFC (559/539), 1557 OK1KIR (559/559), 1603 OH2DG (559/559), 1615 SM6CKU (559/559), 1805 ES5PC (559/559), 1822 SA6BUN (559/529), 1835 WA6PY (559/O), 1845 PA3DZL (559/559), 1912 PA0BAT (569/529) and 2000 G4CCH (559/569); and on 26 April at 0034 W5LUA (569/549), 0056 VE6TA (559/559), 0106 VE6BGT (559/559), 1626 UA3PTW (559/559), 1655 DB6NT (569/559), 1702 G3LTF (559/559), 1708 DF3RU (559/559), 1726 OZ1LPR (559/449), 1736 VE4MA (559/559), 1801 HB9Q (579/579), 1832 9A5AA (O/559), 1907 G4NNS (559/559) and 1943 LX1DB (579/579) for a total of **25x17**, which was significant (2/3) increase over last year. Finally, I was **QRV for the 10368 Contest**, which did not turnout as well I had hoped. I set up on Friday before the contest on 1 May, but discovered my output power was way down. I ran a test at 2330 with OZ1LRP. Peter was (579), but could barely copy me. I found there was a problem with the T/R relay and fixed it. Because of the low power, I decided to use my TWTA, which gives a more than 3 dB increase in power. I QSO'd on 2 May at 2201 OZ1LRP (569/549), 2218 OK1DFC (569/569), 2233 OK1KIR (569/569) and 2241 OK1CA (569/569) all on CW, but after that activity slowed down. I decided to switch to QRA64D to add a few more QSOs. I worked on 3 May at 0006 KN0WS (21DB/18DB)

QRA64D for mixed initial #46* and the MN State, 0118 VE6TA (17DB/18DB) QRA64D #47* and **0129 OE5VRL (15DB/13DB) QRA64D #48*** and **DXCC 25**. I did not operate for the JA/VK because rain was moving in and I was concerned for the TWTA. I did not operate the next day because I only had about an hour of good Moon window before the contest ended. This was a bad decision because the WX was bad in EU on Saturday causing reduced activity, but many of these stations showed up on Sunday. I plan to be QRV for the 13 cm Contest on 23/24 May and will be looking for XB QSOs.

NET/CHAT/LOGGER NEWS: **F8DO** was infected by COVID-19; fortunately Marius is recovering but is still very weak. **OZ1LPR** was QRV during both 6 cm and 10 cm DUBUS EME Contest weekends using his 2.4 m dish and 100 W at feed on 6 cm and 300 W on 3 cm. **WD6Y**: is getting started on 432 EME and is ready to receive with an 18 el XPOL yagi, but has only 75 W for TX. Carlos has a higher power SSPA on order and can be reached for skeds at wb6mcw@aol.com. **W2HRO** has a 1.2 m dish mount and receiving 8 dB of Sun noise on 3 cm. He has 11 W and should be QRV already. **XE1XA** has a new flare for his 1296 square septum feed - see following picture. Max is temporarily QRT on 23 cm while he repairs his SSPA, but should be QRV again very soon. **NQ7B** is a new station on 1296 CW EME. Chuck is running a 10' dish with 600 W, and can be reached at jaffe.chuck@gmail.com. **WK9P** believes he was NQ7B's first 1296 EME QSO. **OK7RA** is preparing 10 GHz EME with 2.3 m dish and 50 W SSPA. Jirka's LOC is JO60qc. **OK1YK** is back on 70 cm EME with a 4.5 m dish. Mira, however, suffers from lot of local noise. **ZL3AAD** is QRV on 70 cm after many years. Graham's new LOC is RE68lv and need to be up dated in most WSJT data bases.

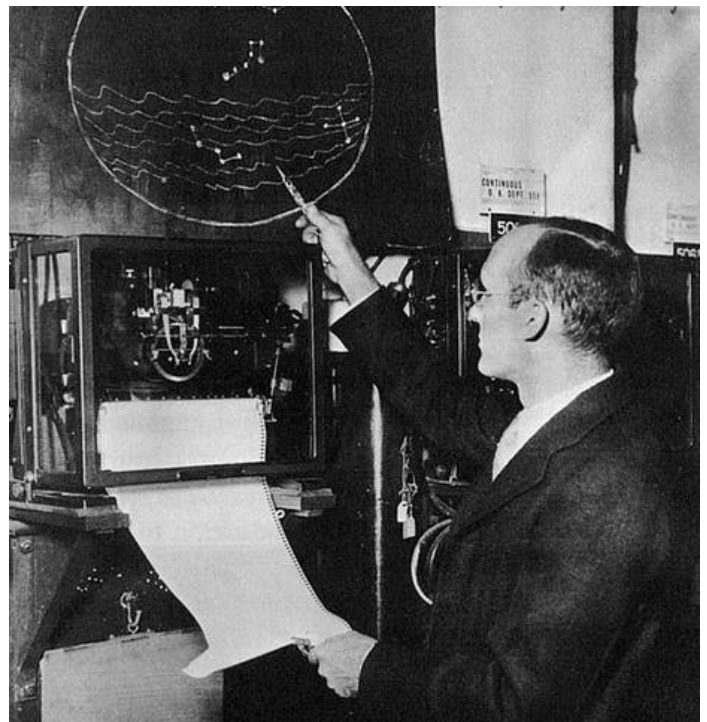


XE1XA's new flare for his 1296 feed. It replaces the choke-ring, is smaller, gives similar performance and is easier to fabricate. Dimensions are 151 x 194 mm (mouth) and length 127 mm with an additional 20 mm of overlap to the mouth of the horn. Inner dimensions are the same as aperture of the horn. Max's are 150 x 150 mm.

FOR SALE: **KA2LIM** has a Lunar Link LA-70B 432 PA w/ LA-70 Power supply for sale. Asking price is \$US1700 for the complete system. If interested contact Ken at ka2lim@stny.rr.com. **IK4NMF** is looking for a WR75 waveguide offset short. Contact Fausto at

ik4nmf@gmail.com. **ON7UN** has two 10 m solid dishes (in panels of course) with KU-band feeds available. The cost will be a part of the crane cost that will lift the reflectors off their pedestals, so dismantling of the reflectors can be done at ground level. If anybody is interested in these antennas, please contact Eddy at ejespers@telenet.be. If there is no interest, they will end up in a scrap metal container. **W1GHZ** has a batch of dual-band 10 and 24 GHz feedhorns for offset dishes available. Contact Paul at w1ghz@arrl.net if interested.

RADIO ASTRONOMY CORNER: Best greeting in COVID times by OK1TEH. What's new? On 10 April we celebrated 1 year since the first published direct photo of black hole shadow made by the Event Horizon Telescope at around 230 GHz. Since then we have been waiting for the first picture of Sgr A*, a supermassive black hole at the Milky Way center.



Karl Jansky some 88 years ago discovered Sgr A* and Cassiopeia on 20.5 MHz. Will we celebrate his 90th anniversary by the first direct picture of Sgr A*'s shadow and close space? We will keep our fingers crossed!

The Event Horizon team is working hard but such work is painstaking and time-consuming; for example, the M87 data that enabled last year's image were gathered in 2017. And Sgr A* is a tougher target still, even though it's much closer to us (25,640 light-years versus 55 million light-years for M87). Sgr A* is a relatively lightweight supermassive black hole, harboring the mass of "only" 4.3 million suns, and therefore operates on a shorter timescale than the 6.5-billion-solar-mass M87 monster. In data collected during a week in April 2017, Sgr A* changed its appearance over the course of a few minutes (!). So while M87's black hole lent itself to a single still image; "for Sgr A*, we may need to construct a movie," Akiyama from EHT (MIT) said: "The

simplest way to make a movie would be to break up one night's observations into segments, make an image from each segment and string them together." Says EHT team member Katie Bouman, a data scientist at Caltech: "But, there's not enough information in even the largest segment to produce a reliable image." Instead, the team is working on techniques to fill in gaps and carry information about the black hole's appearance forward in time. During mid 2020, the scientists hope to bring the total number of observatories in the EHT network to 11, by adding the Kitt Peak observatory in Arizona, the NOEMA array in the French Alps, and the Greenland Telescope. The team also planned to start observing at higher frequencies, which can penetrate the plasma surrounding black holes more easily. The EHT team hope to announce a movie or picture of Sgr A* before end of the year. We can expect that such a picture or movie will realize the dream, not only of radio astronomers, but a lot of EMEers as well, who use Sgr A* as a noise reference. More related info can be found at <https://www.sciencenews.org/article/black-hole-image-event-horizon-telescope-top-science-stories-2019-yir>.

FINAL: We also learned that EMEer KB8RQ has passed away on 9 May. Gary was one of the top 2 m EME operators who lead the 144 DXCC list (247 confirmed DXCC). He was also active on 432 EME on 70 cm during 80's and 90's. RIP Gary, you'll be missed.



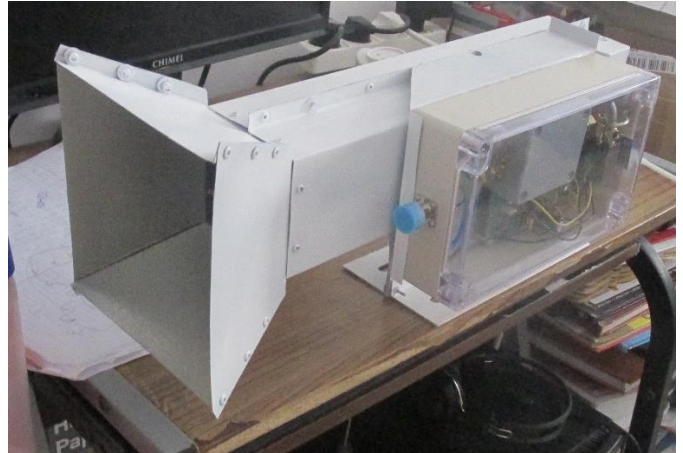
Visit to KB8RQ in 2016, from left: OZ2OE, KB8RQ, OZ5TG, OZ1DLD, OZ5KM and K6MYC.

► EME2020 Prague is still on and taking registrations. They are hoping the COVID-19 situation will allow the conference to be held on schedule; and have added workshops on using WSJT to make QSOs at 24 and 47 GHz, and on Microwave EME. They will a decision by July. All information will be posted at <https://www.eme2020.cz/>.

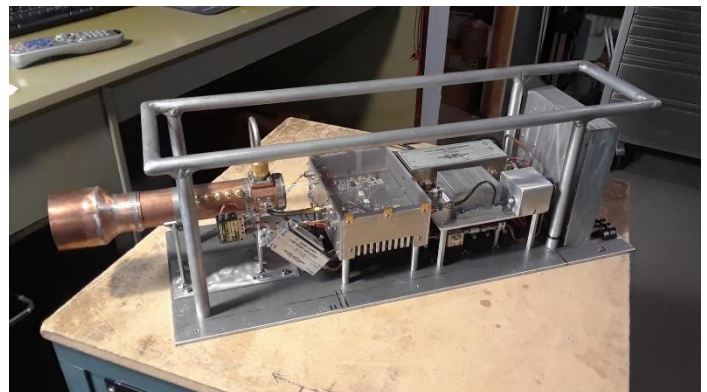
► HB9Q has a new feature on the Logger. They have a live webcam at the HB9Q station that updates pics every minute. See https://hb9q.ch/2018/?page_id=1787.

► The was quite a discussion on the dates for the ARRL EME Contest, (not in 2020, which are 12/13 Sept for microwave, 10/11 Oct and 28/28 Nov) but for 2021. It appears the 2021 dates will be 2/3 Oct for microwave, 23/24 Oct and 20/21 Nov).

► We hope and pray that everyone is surviving Covid-19. Please take care and stay healthy. Your reports, news and tech info are very much appreciated. Both of us plan to be active off the Moon toward the end of May. KB7Q will be on 432 from MT on 30 May; and the Q-team's microwave dpxpedition from JN46 will be on 23/24 May and 29/31 May. The 23/24 is also the DUBUS 13 cm EME Contest. If you have 2300 gear please show up no matter what the subband or mode you operate. Look for K2UYH in the 13 cm DUBUS Contest and both of us off the Moon. 73, AI – K2UYH and Matej – OK1TEH



4X4AJ 13 cm feed with flange and SSPA/LNA box



VE6BGT's feed box with new feed and 100 W SSPA



W2HRO's new 4 x cross yagi array for 432