432 AND ABOVE EME NEWS
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CONDITIONS: We are running a little later than planned due to Covid. Nothing serious but it slowed us up. The Dubus 432 CW Contest was affected by uncooperative Faraday that made QSOs between European (EU) stations without pol rotation difficult. The top score comes from **DL0BLA** operated at DL7APV's station by DK5OZ. He made 26 QSOs in one moonpass. The ARI Contest had similar problems on 432 with Faraday to the Dubus weekend, but did have a nice turnout on 1296. In the ARI Contest on 23 cm **the I2DB group was tops** with 86 QSOs, 60 using Q65C, 26 with CW and 2 on SSB for 2,296 points. However, OK1DFC had the top QSO total with 66 on 1296 and 30 on 432 for a combined score of 96 QSOs. **Coming up on the weekend of 7/8 May is the Big One, the 1296 VK3UM Memorial CW Contest.** The 70 cm ATP is on 8 May 1200-1400 & 2000-2200.

Dxpedition Activity is back! N1V kicked the season off with is trip to Hawaii on 1296 and 902. Weather (WX) was a problem, but Jay made it work – see his report in the is newsletter (NL). KB7Q provided the States of UT and CO on 1296 and 432 – see Gene's report. KA6U also continued his extended grid hopping dxpedition. Coming up on is TK/HB9CRQ return to Corsica dxpedition on 27 thru 31 May on 23 thru 3 cm (no 9 cm). PA2CHR also has a surprise EME dxpedition operating on 144, 432 and 1296 roughly between 29 May and 7 June. See the reports.

N1V's 2.4 m folding dish with circular patch feed in HI

ARRL CONTEST HIGH SCORES FROM K1DS: **Single Op, All Mode, All Band:** #1 UA3PTW 5.6 M. #2 DL7APV 4.0 M. #3 YL2GD 2.4 M. **Single Op, All Mode**: **70 cm** #1 PA5Y 706 k. #2 S56P 387 k. #3 7M2PDT 218 k. **23 cm** #1 OK2DL 1.1 M. #2 DF3RU 809 k. #3 PA3FXB 612 k. **13 cm** #1 OK1CA 31 k. **3 cm #**1 OK2AQ 47 k. #2 G4RFR (G3YGF op) 24 k. **Single Op, CW, All Band:** #1 G3LTF 567 k. #2 WA6PY 248 k. #3 SP3XBO 158 k. **Single Op, CW, 70 cm** #1 DL9KR 31 k, #2 JA0TJU 1.2 k. #3 F6HLC 0.1 k. Single Op, CW, 23 cm #1 DG5CST 702 k. #2 G4CCH 450 k, #3 KL6M 378 k. **Multi Op, All Mode, All Band** #1 UA5Y 7.6 M. #2 NC1I 4.2 M, #3 K2UYH 4.2 M. **Multi Op, All Mode: 70 cm** #1 S51LF 273 k. **23 cm** #1 SK0CT 665 k. #2 IQ2DB 607 k. #3 IK5VLS 504 k. **13 cm** #1 OK1KIR 65 k. **3 cm** #1 W3SZ 23 k. **Multi Op, CW, All Band:** #1 SP6JLW 839 k. **Multi Op, CW: 23 cm** #1 F6KRK 12 k.

REPORTS:

DK3WG: Jurgen dk3wg@darc.de (JO72gi) reports on his recent initials – I added QSOs on 23 cm using Q65C in March with JS6UJS, K6VHF, JH7OPT, DJ3JJ and SP7EXY; and in April IN3FCK, TO1Q, DK4RC, DJ7FJ, PA0PLY (at new QTH), F4DWB, KB7Q (in DM57 for States of UT and CO). I was not QRV on 70 cm in March, but in April using JT65B added DL4RCE, KB7Q (DM57) and W5EME.

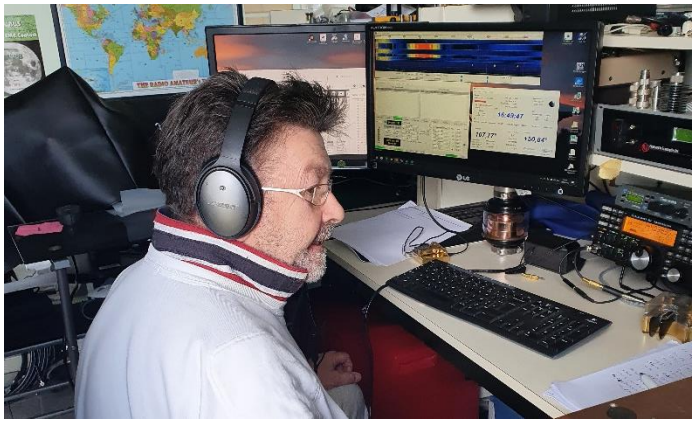
DL7APV: Bernd dl7apv@gmx.de and his XYL had Covid but it was very mild and did not slow down his EME -- My station was activated during the Dubus 70 cm CW Contest by my friend DK5OZ who used his club call DL0BFA. He made 26 QSOs in one moonpass. I filled out all QSLs cards for him that were sent via the bureau. If anyone needs one faster, let me know. I also made some 70 cm initials (DL7APV), most of which were using Q65B, which seems to be the most used mode on 432. Initials added were in Feb KA6U (EL87) with 2 yagis on QRP, N9BX (EM50) 2 x 23 el yagis and 500 W, FG8OJ (FK96) with single 18 el yagi and 60 W, HA6NAB (JN97), K9MU (EN44) with single 38 el yagi and 50 W on the horizon, AB2VI (FM19) and JF2AIA (PM53) with single 15 el yagi and 30 W, and in March DL4RCE (JN68) with 4 x 16 el yagis and 1 kW, NN3Y (EL95) 4 x 18 el yagis and 800 W, W5EME (EM32) with 400 W, K7KQA (DN06) with 2 x 6 wl yagis and 150 W, KB7Q

(DM58), JM2FCJ (PM84) and KB7Q (DM57). On 23 cm, I tried to make some ribbs for a new 3 m dish, but my effort did not turnout well. So, if anyone in my area has a light weight 3 m dish available, plase contact me. I can offer a 5 m dish in exchange.

DL9KR: Jan bruinier@t-online.de enjoyed some nice QSOs with my CW partners since my last report – Although not as active as I would have wanted, I added at the end of 2021 initials with N9XG #1115, N1H #1116 (strong) and EA3MS #1117 (how QSL?). In 2022, I began by working SM3LBN #1118, then a SOTA station K7ATN #1119 who was fully portable and battery-powered. In the March 432 Dubus CW Contest in only 4 hours of operation, I accumulated 21 QSOs; among them were OH1LRY #1120 (how QSL), DL1VPL #1121 and unexpectedly strong VE6BGT #1122. Another highlight was 3 QSOs with dxpeditioner KB7Q who throughout Q5 signals for initials #1123, #1125 and #1126 from his awesome QTHs. April also brought a nice initial, #1124 with the very strong, and newly appeared OK1VUM #1124.

EW7CC: Ihar ***EW7CC@mail.ru*** (KO44va) is QRV on 1296 from Belarus – I worked in March using Q65C I5YDI, PY2BS, W5AFY, SP7EXY, RD9SAC, F9ZG, EA1IW, SK0CT, PA0BAT and possibly more with a 3.5 m dish and 80 W SSPA. [TNX to DK3WG for forwarding this report].

F2CT: Guy f2ct@wanadoo.fr was QRV on 1296 in the ARI EME Contest – I worked using CW on 10 April at 1247 DU3T (559/559), 1256 IK3MAC (569/569), 1300 DF3RU (569/569), 1339 G4CCH (569/569), 1353 IQ2DB (559/559), 1400 DG5CST (579/589), 1411 IK2DDR (559/559), 1430 OM4XA (559/559), 1446 PA3FXB (559/559), 1453 OK2ULQ (559/569), 1458 DK3WG (559/559), 1654 IK1FJI (569/569), 1706 IK5VLS (559/559), 1717 IZ2DJP (559/559), 1727 IK3COJ (559/569), 1732 RA4HL (569/569), 2142 G3LTF (579/579), 2149 PA3DZL (569/569), 2208 FG8OJ (559/559) for initial (#) and DXCC and 2238 W6YX (559/559) for a total of 20 QSOs. On 15 April I added CX2SC using Q65C (15DB) for an another DXCC; I think that a CW QSO would also have been possible! I plan to be QRV for the upcoming REF Dubus EME Contest on 23 cm CW on 7/8 May.



F2CT operating the ARI Contest on 1296 CW

G3LTF: Peter's g3ltf@btinternet.com March-April EME report follows – I have had quite a lot of activity since my last report. The weather stayed calm here for the 70 cm Dubus–REF and the ARI Contests. I was on 70 cm for the Dubus CW weekend and worked on 12 March G0JLO, UA3PTW, VE6TA, KL6M, K2UYH, DL0BFA, OH1LRY, SM6FHZ, OK1CA, SP9VFD, SM2CEW, DL9KR, OZ4MM, PA5Y, OH2DG and WA6PY, and on 13 March G4RGK, LX1DB, DF3RU, PA2V, DL1VPL for initial #490 and ES5PC. I ended with a total of 22 QSOs x 22 mults; activity was fair although several regular calls were missing, and Faraday was a very sharp 90 deg for most of the time. In the ARI contest I started on 23 cm on 9 April and worked, all on CW, OK1CA, DU3T, IQ2DB, PI9CAM, CT1FGW, DF3RU, DJ3JJ, IK1FJI, DL6SH, G4CCH, IK5VLS, OM4XA, G4RGK, F6KRK, OK1DFC, SM4GCC, SP7EXY, F5JWF, DL1AT, IK3COJ, NQ7B, PA3FXB, PA0PLY, K5DOG, XE1XA, KL6M (with Mike running only 10 W), LZ1DX and N5BF. The next day, 10 April I started on 70 cm where Faraday was again a sharp 90 degs and the QSB was difficult due to a geomagnetic storm. I worked PA2V, PA5Y, OK1VUM #491, OK1DFC, DL1VPL and SM2CEW. I realized afterwards that I missed HS0ZOP; my excuse(!) is that the sequence of 7 dots at the start is hard to decode in bad QSB. I moved back to 23 cm for the end of the contest and worked I1NDP, PA3DZL, F2CT, FG8OJ #521 and DXCC 81 followed by K1DS #522 and KN0WS #523. My totals were 6 on 70 cm and 35 on 23 cm. Fewer Italian stations showed up than anticipated, but I believe they had a big wind storm in northern Italy.

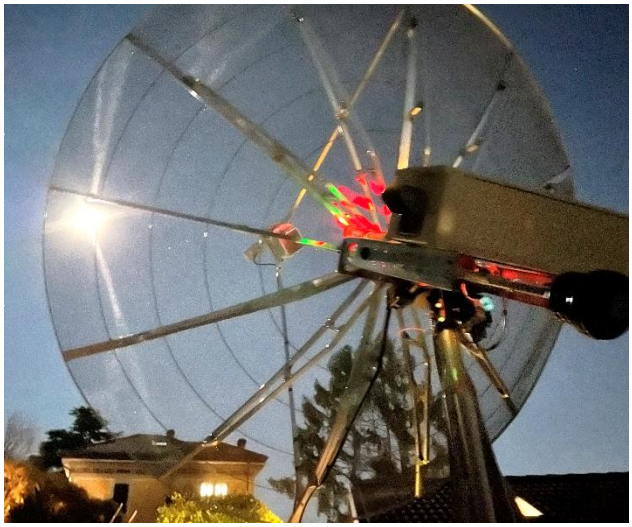
G4DDK: Sam jewell@btinternet.com writes about recent happenings – I had the virus and now recovered, although the after effects seem to linger. Activity wise, I have been rearranging my shack. I have tried to make my 23 cm EME system more permanent. I can still swap out bands, but cables are now more *permanently* installed. I'm still using the KTI 2.3 m dish with OK1DFC septum feed on 23 cm and my own VLNA. The power is 125 W at the feed. I have a W6PQL 600 W PA module that needs to be boxed and the addition of protection circuitry. I operated the ARI Contest on 9/10 April and worked 17 stations on 23 cm, including ~ 4 initials. All were on digital. Several CW stations were readable, but my failing hearing and tinnitus make copy difficult. Activity levels were good to excellent in spite of the high degradation level. I closed down DDK VLNA Kits last Nov, but am still getting enquiries and orders. I ceased production because of difficulty in obtaining key parts and changes to import regulations. The additional paperwork is a real burden. However, I am still supplying complete VLNAs, especially for 23 cm, which have been in very high demand. The requests have persuaded me that I should continue to offer kits as a service to fellow EME enthusiasts. I will also offer built and aligned units for 23 cm, but if I get too many requests, I will stop accepting orders, as it takes a lot of my time to build and align them. Built units are essentially kits that customers then request me to assemble and tune. I only have limited reflow facilities and most are built using a hand soldering iron. Prices may have to change slightly,

depending on component costs. You may see a different label on the VLNAs, as well.

HB9Q: Dan dan@hb9q.ch updates us on his activity since January -- All my initials are via JT65 or Q65 if not marked CW or SSB. On 432 we added GW4ZHI on the horizon with a single 25 el yagi and 200 W, DL4RCE with 4 x16 el yagis and 1 kW, K5DNL with 2 x 25 el yagis and 100 W, K7ATN with a single 22 el yagi and 100 W, N9BX in EM50lm with 2 x 23 el yagi and 50 W for 1st EME, KE0HQO with 2 x 27 el yagis and 100 W for 1st EME, **KA6U in EL87sq with 2 x 25 el crossed yagis and 3 W**, N6WS with 2 x 50 el yagis and 300 W, KA6U in EM31 with 2 x 25 el crossed yagis and 600 W, NN3Y with 4 x 18 el LFA yagis and 400 W, KB7Q in DM58cv with a single 9 wl yagi and 500 W and OK1VUM with 32 x 9 el yagis and 800 W to bring us **to mixed initial #1237***. On 1296 we added BH4PVP with a 2.1 m dish/loop-feed and 6 W for 1st EME, G6HEF with 3 m dish and 200 W, KD5CHG with 1.8 m dish and 100 W, F4DWB with 1.9 m dish and 80 W, K5QE with 2.4 m HRO dish and 300 W, K3WM with 4.5 m dish and 60 W, PA1PS with 3 m dish and 8 W for 1st EME, RW9ST, N6WS with 2 x 67 el yagis and 150 W, GI4DOH with 2.4 m dish and 20 W, F9ZG with 3.7 m dish and 200 W, K9MU with 4 x 67 el yagis and 120 W, K6VHF with 3.2 m dish and 400 W, KU4XO with 2.4 m dish and 350 W in SC, W5AFY with 5 m dish and 350 W, N1V in BL11 HI with 2.4 m HRO dish and 350 W for 1st EME, KN2K with 1.8 m dish and 360 W, KB7Q DM57 2.4 m HRO dish and 400 W and SP7EXY **to bring us to mixed initial #837*.** On 13 cm we added BH4PVP in OM95qx (18DB/7DB) with a 2.1 m dish and 20 W for 1st EME and OK1USW with 1.8 m dish and 50 W for 1st EME **to bring us to mixed initial 199***. On 6 cm we added CT1BYM in IM68bn (5DB/6DB) with 3 m dish and 120 W for 1st CT-HB9 QSO and DXCC 45 and WA3RGQ with 3 m dish and 20 W for 1st EME **to bring me to mixed initial #102*.** We are always looking for initials. QRP stations are very welcome! During our activities, we are on stand-by on the HB9Q band-loggers. If you'd like to work us, e-mail or look for us on the loggers.

IK1FJI: Valter valter_dls@yahoo.it sends news of his latest activity for 1296 – I QSO'd on 15 March at 0138 N1AV in Hawaii using Q65C. In the ARI Contest using CW unless noted I worked on 12 April PA3FXB (559/569), IK3MAC (569/569), DF3RU (54/54) SSB, SM4GGC (549/559), K6VHF (O/O) for initial #151, OK1DFC (579/589), DL1AT (O/O) #152, W5AFY (569/559) #153, EA1IW (O/O) #154, OK1DFC (56/57) on SSB, SM5DGX (579/579) and on SSB (55/55), N0CTR (O/O) #155, VE4MA (559/559) and KB7Q (19DB/16DB) UT (DM57) using Q65C; and on 13 April at 2322 KB7Q (19DB/16DB) in CO (DM57) with Q65C. During the ARI Contest, we had high wind here in Italy, especially on Saturday afternoon/evening. I worked 34 on CW and 2 on SSB for a total score of 1400 points. I don't run digital during any contests. I have added a choke to my Septum feed and it seems work very well. I am still waiting for my new dish.

IQ2DB: Alessandro (I2SVA) i2sva@i2sva.it reports on his group's (A.Volta EME Team's) activity on 1296 in the ARI Spring EME Contest -- It is now 6 months that IQ2DB is on 23 cm EME with a 3 m mesh dish, 500-600 W at a Septum feed, G4DDK LNA (0.28 dB NF), MKU13G4 Kuhne transverter and Flex Radio 6400 RX with WSJT-X and MAP65 running in parallel. Our station can be operated completely by remote control; we can be QRV quite often during weekdays. During the ARI EME Contest we fine-tuned our station for CW operation. We participated in the 1296 MIX-A Category and completed a total of 86 QSOs, 60 with Q65C, 26 with CW and 2 with SSB for 2,296 points. We found it very useful to operate during Digi QSOs on Q65-30B; this mode is much faster than Q65-60C and allows an higher QSO rate mainly with medium/higher power stations. It allowed us to have a lot more time to work small stations on CW. This "high speed" mode should be used much more, mainly by the big guns! Very interestingly, the use of Q65-120D for QSO with very low power/small antenna stations was also helpful. We made 2 QSOs using 120D where it was absolutely impossible to notice any synch line on the screen! We have now made 800+ QSOs (all modes) with 205 unique calls, 44 on CW, 5 on SSB, have 46 DXCC, 23 US States, 22 Zones and 158 Grids. We are quite happy and looking forward to more activity from the Far East/Oceania and South America - hopefully.



IQ2DB 3 m dish with Septum feed

K1DS: Rick rick1ds@hotmail.com was able to operate on 23 cm for the second moonpass of the ARI Contest weekend -- I concentrated on CW with 200 W and my new 2.4 m folding dish. During my setup, I touched a hot line and blew a preamp but fortunately had a backup. I first copied I1NDP calling CQ. I also copied F2CT, G3LTF and G4CCH but only completed with UA3PTW. I'm sure I could have had CW QSOs with many others with more time. I also tried Q65C, my settings were troublesome and I only decoded W6YX; and they were busy working others. I'll work on refining the digital techniques in the future.

K4QF: Ben LoWeb@esp-inc.net updates us on his status on 23 cm EME from AL – My dish suffered snow damage about 2+ months ago. I managed to get the damaged hinges replaced that allow me to elevate the dish. Several of the ribs were bent. I now have them bent back into shape.

I was then able to rotate the dish and retrieve the feed from the dish. I recently had some decent WX (not too cold and not raining) and was able to take the and set up an outside test system to measure ground vs. cold sky noise. I expected > 3.0 dB, but saw no difference what-so-ever. I was using a K2UA feed, which I am certain is working as advertised, I can only assume that there's an issue with my preamp. I am now working on a new preamp. I should have it completed in a couple of days, and we'll see what happens.

KA1GT: Bob ka1gt@hotmail.com discusses WSJTX and experiments he has been conducting with G3WDG (DL3WDG) -- Sometime back Joe enabled Q65-30 for EME operation and it works very well. On 1296, I made about 50 Q65-30B contacts back in the 2021 ARRL EME Contest. Over the last year I've made around 250 QSOs using Q65-30B. Running 240 W to a 3 m dish, I've made 30B contacts with small stations including one running 150 W to a 1.9 m dish. We had about 4-5 dB margin; so 30B is not just a "big gun mode". More people should try it! Currently WSJTX 2.5.4 does not allow Q65-15 decoding. The short period has a number of potential issues including loss of symbols due to EME delay and the timing of decoded responses. Nevertheless, working with Charlie, I made a few modifications to WSJTX, which enable Q65-15 decoding and it works quite well (with a few limitations). Time limited copies of the modified code were made available to a few test stations. My 1296 Q65-15A signals can be decoded by DL3WDG using a 1.2 m dish and full decodes can be made when signal strengths are (-19DB) or better for unassisted (Q0) decodes and (-22DB) for AP assisted (Q3) decodes. Working KB2SA with his 1.9 m dish was easy. QSOs were also completed with PA3FXB, N2END and IQ2DB. I estimate stations with 2 m dishes and 150 W would have no problem working each other on 1296 with Q65-15A. Again, Q65-15 would not be a "big guns only" mode, should the WSJTX development team decide to make it generally available in a future release. I have a brief technical discussion posted at https://bobatkins.com/radio/Q65-15_eme.html.

KB7Q: Gene geneshea@gmail.com and his XYL, Joyce headed south from cold Montana to Utah and Colorado in early April to put both States on 70 and 23 cm EME. The first ops took place on 6 April just south of Green River, UT (DM58) on 70 cm using Q65-60B. There was only a moderate turnout of 15 folks, which didn't bode well. However, DL9KR and I completed an outstanding random CW contact (559/559). It was the strongest CW contact I've ever made. I guess I was running the 500 W amp pretty hard. A small piece of Teflon coax used as a capacitor in the output circuit unsoldered itself and output dropped to zero. This trip I had a solder pencil and solder along, so after tacking it back in place, we were QRV again. KB7Q 1 Murphy 0. Note to self: add a small fan inside to move air across the output circuit. On 8 April, we gave 23 cm a go from the Valley of the Gods, UT (DM57). This is an awesome spot full of sandstone spires and few people. 24 stations were logged using Q65-60C; I worked all that I heard. VE4MA had just rolled into home base from AZ and fired up his station to work me for a new State. While still in Utah at Goosenecks State Park, UT (DM57), we put 70 cm back on from a new grid on 10 April. 14 stations were logged. DL7APV was king of the hill with a (-5DB) report! In Colorado, we were challenged by the weather. A huge storm that hit most of the USA locked us out of the high country for a few days, but on 13/14 April, we found a fantastic cliff top site in DM57oj and had a great 23 cm session despite high winds. I added ropes running to anchors upwind to hold the 2.4 m dish in place. This worked like a charm. 28 folks completed with me. FG8OJ was the most stratifying contact as we both had to scratch for it. As a bonus, I put 70 cm on from CO on 15 April. I did have to re-build the power relay in my pre-amp switching box after I twisted the output N connector off the body of the relay with the wiper still intact. Oops! Still from my CO cliff top perch, I was able to work 21 guys and complete with W7JW after a many hour fun chase. On CW I worked DL9KR (549), DG5CST (429), and OK1KIR (419). Not bad for a single 9 wl yagi and 500 W. It was fun to put these needed States on, and a special thanks to all the guys in Europe that crawled out of bed in the middle of the night to work me.

KB7Q on the road in the Valley of the Gods UT (DM57)

KL6M: Mike melum@alaska.net reports the first 902 Alaska – Hawaii QSO -- I did not have a chance to test anything prior to N1V's 902 HI dxpedition's operation. I was out having my birthday dinner and got home late and almost missed everything. My setup was hay-wired together. My background noise on 902 was bad. I had less than one dB sky noise to termination, but I actually saw pretty good signals. For some reason my amplifier bias was not switching on/off with my T/R. With bias on, the RX was totally swamped; so I quickly wired in a manual push button switch. On each transmission, I had to manually hold the button down. I was seeing power output on my meter, but not seeing my signal on spectravue. I finally realized my FT-736 was in repeater mode so my TX was offset 600 kHz? I didn't know it would do that in SSB mode! In addition, I had positioned my TX converter on top of my PA, so it was heating up and changing frequency. Thanks to VE6TA, who was seeing my signal 5 kHz low and guided me on to N1V's frequency on HB9Q, I was able to catch Jay's attention just before he went QRT. Our QSO was nothing short of a miracle. The next day I checked the calibration of my

directional coupler and it seems that I was running about 175 W.

KN0WS: Carl carlhasbargen@q.com writes about his prep for spring and recent home activity -- With spring arriving, I drove to my northern dish site to survey conditions. All dishes were still standing, much of the snow was melted, but it was too muddy to drive onto the property. I did install a carburetor on my tractor. (I need if to pull me out of the mud, should I get stuck). I decided to operate the ARI Contest from my home QTH with my 8' offset dish. Because of blockage, I was limited to only about 5 hours of moon time each day. **[Remember this is a different grid square from my northern site and thus counts as an initial]**. My laptop computer died this winter, so I pressed an older laptop into service. It was not setup for MAP65, but had the latest version of WSJT-X. Unfortunately, the day before the contest it could see 23 cm signals beautifully on the waterfall display, but decoded none of them. I bought a new laptop; but I discovered that I had not "checked the box" in WSJT-X saying "single decode". Could it be that the default for the software was not to do single decodes? I ended up being able to get audio to and from the radio but did not have CAT rig control. That meant I had to go "old school" and dial in my own Doppler offsets on the radio. *How 2019ish of me!* Over the weekend I heard AA6I (20DB) and VE4SA (21DB). I was able to complete using Q65C with OK1UGA (15DB), LZ1DX (11DB), PA3DZL (14DB), IQ2DB (16DB), W6YX (11DB), K3WM (12DB), OM4XA (19DB), N0CTR (18DB), KB2SA (22DB), N5BF (16DB), VE3KRP (23DB), K5DOG (15DB) and W2HRO (18B). I also worked the new dish of OK1DFC (10DB), had initials with W5AFY (18DB), FG8OJ (DB24) and new DXCC, DL1SUZ (23DB) after much trying to get him on my screen, K6VHF (19DB), PA3FXB (19DB) even though I was accidentally in Q65A mode, to get KN2K (24DB) using Q65D120 (he copied me at 29DB). My highlight was finally working G3LTF using CW after 5 years of trying! Although he is only my 31st CW QSO in those 5 years, I do not think I would have a single one if he had not prompted me on the HB9Q logger for several years in a row to try CW. The day AFTER the contest I downloaded IC-9700 USB drivers so now I should have CAT rig control of my radio. I also fabricated a new feed mount so I can try my W2HRO 23 cm patch feed. My OK1DFC septum is so long that I have to rest it on top of the neighbor's fence and wait for a 35 deg Moon elevation before I can operate. The patch feed should get me started 1.5 hours earlier. I was not pushing myself too hard and am satisfied with 21 QSO's x 21 mults, and was happy to get 6 mixed initials from my backyard - especially Peter.

LU8ENU: Juan lu8enu@yahoo.com was QRV for the ARI Contest on 1296 and 144 -- On the weekend of 9/10 April I was on 23 cm. As is usual for most contests, the Moon was obstructed most of the time because of its high northern declinations. There were only very few clear spots; anyway, I managed to make about 20 QSOs on 23 cm. [When you hear Juan in a contest, keep in mind his limited window].

N1V: Jay (N1AV) whereisjay@gmail.com reports on his dxpedition operation as N1V in Hawaii (BL11) -- My 1296 trip was full of excitement, disappointment, frustration, learning, adapting, and of course FUN. All the gear made it OK to HI; and no major problems operating were encountered aside from the wind. My original plan to operate KH6 was for the best lunar weekend in Oct 2021. Then there is typically much less wind. When the Governor of HI asked that non-emergency travel be restricted due to COVID, (tourists don't come here!), we pushed the trip to March. I was so focused on finding another good moon weekend with high declination that I totally forgot about the winds on the windward side of the island in March. March is the end of "surf" season, aka "windy" season. In talking with W2HRO: "If the winds are sustained over 15 mph, don't deploy the dish". Well, I can attest that the sublunar folding dish can stay deployed in much stronger winds! However, keeping it on the Moon was another story! The feed was swinging left and right of the Moon as well as north and south. Keeping it on the moon was frustrating, especially as I was getting sent screenshots of all the EU stations calling me. Most of the time, I was searching for a lighter shade of blue in the blue background to decode. For most of the passes decoding was very difficult. Many times during the evening, I was holding the counterweight arm to keep it from swinging, then running over to the picnic table to check decodes or TX cycles, then back to holding the counterweight arm. Not the relaxing dxpedition I was expecting! Then there would be a few hours a pass where the wind died down and I was able to work stations and SEE traces on the screen. Wahoo! All of this did provide a lot of education and adaptation and each day, I tweaked the system a bit more. My last night of 1296 operation was the first day of rain on the island. Mind you, the chances of rain that day were 4%. I got on as usual and had to shut down my outside operating position within 30 min due to the rain. Sadly, I missed the entire EU window on the last day. Several hours later, I was able to complete with N7GP (30DB) with me sitting in the rain, a tarp over all the gear and wiping the rain off the computer screen between decodes for my last 1296 contact. I was soaking wet, but we were able to complete. Thank you all for your patience and participation. Stations worked starting with Q65C were HB9Q (13DB), DG5CST (15DB), NC1I (26DB), OK1KIR (23DB), DK4RC (21DB), OK2DL (22DB), DF3RU (23DB), OK1DFC (24DB), PA3DZL (24DB) - 1st ever 23 cm QSO from KH6 to PA, G4CCH (20DB), W5LUA (17DB), IQ2DB (23DB), OM4XA (27DB) - 1st ever 23 cm QSO from KH6 to OM, IK1FJI (29DB), DL7UDA (21DB), OH2DG (20) 1st ever 23 cm QSO from KH6 to OH, ON4AOI (27DB) - 1st ever 23 cm QSO from KH6 to ON, DG0FE (26DB), PA0BAT (24 DB), ES3RF (23DB) - 1st ever 23 cm QSO from KH6 to ES, UA3PTW (23DB), DL6SH (23DB), K2UYH (24DB), OK1DFC (14DB), SM5DGX (15DB), YO2LAM (18DB) - 1st ever 23 cm QSO from KH6 to YO, K5DOG (22DB), PA3FXB (29DB) and WA3RGQ (24DB), and using Q120D W2HRO (25DB), K6VHF (28DB), KA1GT (28DB), VE6TA (21DB), KB2SA (26DB), N5BF (28DB), JA6AHB (28DB), K3WM (22DB), PA9RX (32DB), DL4DTU (26DB) and N7GP (30DB). The 902 night went off great on 17 March. Wind was still present, but down to 5-8 mph. I ended up working W5LUA (23DB) and VE6TA (23DB) right at

moonrise with less than 5 degrees of Moon, then KL6M (18db) later that evening. All signals were very loud and I was heard well with only 165 W at the dish. I know other stations were out there wanting to work me, but they were fighting their own aiming or hardware issues. I was very glad to provide the first three 902 EME QSOs from KH6 to US, to VE and to KL6. I am a not an artist - but I threw something together for those guys to commemorate the first three 902 EME QSOs ever from Hawaii.

There are already plans underway to go back to KH6 for 1296 EME and one other band. I am calling it the "Unfinished Business" tour. New upgrades and improvements are underway to the portable system.
Thank you all for the patience and Q's, it was a lot of fun!

N5BF: Courtney courtney.duncan.n5bf@gmail.com writes on his 1296 activity during the first quarter of 2022 -- Since the ARRL Contest in Nov and Dec, I've been able to get on for a few days and log some new stations. Mixed initials added using Q65C unless noted were K6VHF (19DB/17DB) for #271*, KU4XO (22DB/23DB) #272*, K9MU (21DB/28DB) #273*, OK1USW (21DB/20DB) #274*, N1V in KH6 (24DB/28DB) #275* using Q65-120D for State 31, TO1Q (21DB/15DB) #276* a special callsign at FG8OJ, KD5CHG (23DB/23DB) #277*, W7MEM (22DB/18DB) #278* with a single yagi and KB7Q in CO (24DB/22DB) #279*. These were among 196 QSOs so far in 2022. It is good to see all the newcomers and adventurous dxpeditioners on 23 cm, along with some of the "historically hard to get." I remember reading somewhere some years ago that a good measure of the activity on an EME band was the QSO count at the 10th place station in a contest. The argument is that the little stations can only work the biggest stations and because the biggest stations can work everyone including the littlest stations their count somewhat inflates the median serious activity level in any given year. Tenth place, on the other hand, is likely to be a "typical station" and representative of what a "typical station" could work. With this in mind I was amused to be 10th place in the 23 cm section of the ARRL contest for 2021. Having made a full bore of it both weekends, I'll just report my QSO count of 94 as the activity level. Having informally kept track of who is on, base on my initials and postings on the various reflectors, loggers, and spotters, I see that currently there are 156 23 cm EME stations that I know about and think I could work, given the right scheduling, plus the 279 initials already in my log. These include 46/55 confirmed DXCC, 29/31 states, and 5/5 provinces. So, all told, I'm about "half way there!" Yes, I realize that the "other half" is going to be tougher.

N8DJB: Craig n8djb@coastalwave.net is basically QRV on 902 from KY and was on for the N1A dxpedition – I had no visibility during the operation and my AZ heading was evidently way off. When I checked my sun noise afterwards, the shadow didn't correlate with beam heading readout. I guess when trying to turn it during a 20 deg icy cold snap the weekend before, I must have slipped or stretched the chain on the AZ drive. It appears to have been at least 11 degs off! I'm open and anxious to try again next time there is EME activity on 902.

NC1I: Frank frank@NC1I.COM was not nearly as active in March and April as earlier in the year but still added some nice initials -- Since my last report, I have worked the following initials on 432: DG5CST, JH1OLB with 2 x 20 el yagis and 35 W, PE1JXI with single 19 el yagi and 50 W, GI7UGV with single 23 el yagi and 100 W, KB7Q in UT, OK1VUM, W5EME with 4 x 6 wl yagis and 400 W, and KB7Q in CO. These bring my 432 digital initial count to {#532}. On 1296, I added initials with KA6U in EL88, DK4RC, KN2K with 1.8 mdish and 220 W for his first 1296 EME QSO, GI4DOH with 2.4 m dish and 20 W, N1V in HI for a new State, F9ZG with 3.7 m dish and 200 W, SP7EXY with 3 m dish and 500 W, K5LA with single 70 el yagi and 300 W, KB7Q in UT for a new State, and KB7Q in CO. These initials bring my mixed total to #448*.

OK1CA: Franta fr.strihavka@seznam.cz was active during the spring part of ARI Contest -- I prepared my 23 cm rig on Friday and measured a Sun noise of 22.4 dB (SFU111), a moon noise of 1.2 dB and Cassiopeia A noise of 2.3 dB. In the evening, I made Q65C QSOs with N2END for digital initial {#120}, KD5CHG {#121} and State of CT for WAS 39, TO1Q - special prefix of FG8OJ and dxpedition KB7Q {#122} in UT for WAS 40. I was QRV in the contest only on Saturday, but made 41 QSOs with 19 on CW. I added CW initials with CT1FGW, IQ2DB and SP7WXY to bring me to #394. By operating using Q65C, I made 23 QSOs - including digital initials with IK7EZN, EW7CC, PE1LWT, PA0PLY, VE3KRP, KU4XO in SC for WAS 41 and K6VHF to bring me to digital initial {#129}. The weather was not very good; three snowstorms swept through my QTH during Saturday afternoon!

OK1DFC: Zdenek ok1dfc@seznam.cz was very active in March/April -- I was finally able to work on finishing many details for my new offset dish. The WX calmed down a bit and I was able to work outside for a few days without restrictions. My original intention was also to participate in the 432 DUBUS EME Contest, but I did not have my 70 cm feed/LNA completed in time. The KH6 was also coming up,

so I decided to dedicate the nice weather to finishing the work on the dish. It was necessary to make a jig for precise alignment of the feed in the focus. I hadn't had time to do this in the autumn, so I waited until the WX had calmed down and I could work on the metal parts with my bare hands. The antenna with the feed installed "by eye" did somehow work; I had 14 dB of sunnoise, but it was still 7 dB below my expectations. So, I made a fixture that can be installed using simple mechanical cubes in the new and original center of the dish, so that the apex of this fixture, the "triangle", is exactly at the focus of the dish. By making the jig mechanically rigid, the optimum position could be found by varying the length by sliding the side winding arms of the feed holder. Also, the tilt plane clearly shows how the tilt angle (36°) of the feed should be set in offset. After roughly aligning the feed, I measured the Sun's noise. It was already 21 dB; the value I expected. After moonrise, I measured 0.8 dB of moonnoise indicating that everything was on track. I waited for N1V to show up. At 0100 I tuned to 1296.052 and waited to see when he would appear. While the Moon was still rubbing its belly in the Pacific, a signal appeared with a level of (17DB). I immediately started calling and got a report in reply. As the Moon rose above the horizon, the signal got better and better. Later I decoded him at (10DB to 8DB). The signal indicated that he would be (539-559) on CW. I received a report of (17DB) and the QSO was done for WAS 47 and DXCC 121. In addition to Jay, I worked 20 stations including Q65C initials with VE7ZD (15DB/30DB) for digital initial {#455}, K6VHF (7DB/9DB) {#456} and K5LA (14DB/20DB) {#457}, and on CW DL1AT (559/549) #451 with a 1.8 m dish and EA1IW (539/559) #452 also with a 1.8 m dish. In April, I had my 432 feed ready for the ARI Contest. This time my activity was divided into two days. The first orbit was dedicated to 1296, where I tried for the first time to contest with an optimized antenna. I managed to make 66 valid contest QSOs and add two CW initials with UA6AH in KN94gq (529/559) for #462 and NQ7B in DM42cl (559/569) #463; and two using Q65B with PA1PS using a 3 m dish and only 8 W in JO21ux (20DB/8DB) for digital initial {#472} and VE4SA in EO15br (2DB/4DB) {#473}. In the second orbit, I was back on 70 cm after three years of inactivity. The feed-horn is a version for an antenna for an F/D of 0.38 – 0.4; I wanted to try it out. It appears to be over-illuminated on first testing. Compared to 1296, I am having problems with Earth noise. When the antenna is raised in elevation to an angle of 18.6 degs, the noise starts to increase up to a level of +6 dB. The angle of 18.6° is an offset angle, which means that up to this value the feed-horn is pointing into the sky. After reaching this angle, it can no longer see over the ground and starts to see ground noise. I need to come up with some kind of adjustment to get the radiation pattern narrowed. I'll try extending the edge of the existing feed first. The feed is mounted on a Yaesu rotator, so a smooth polarization change from vertical to horizontal is possible. I made 30 contest contacts on 432. The smallest station I worked on 23 cm was 180 cm offset dish and 50W! On 70 cm it was a single 23 el yagi and 300 W. So, the equipment even in its current state allows me to work QRP dxpeditions. On 432, there were some very interesting conditions due to the unstable electromagnetic field of the Earth after solar a flare. For the first time in a long time, there were SFUs of 123, 111 and 110 during the weekend. I was very pleased to contact HS0ZOP for DXCC 135. Another highlight was a QSO with KU4OX in SC that brought me to WAS 48. I only need WVA and TENN to complete WAS. Initials worked on 432 using Q65B were HS0ZOP in OK03gr (13DB/20DB) #479 and DXCC 135, DL1VPL in JO61ua (19DB/19DB) #480, VK2CMP in QF56ne (12DB/18DB) #481, RD3FD in KO95co (25DB/25DB) #482, 7M2PDT in QM05ek (24DB/20DB) #483, PA3HDG in JO31 (12DB/12DB) #484, WC8RK in EM79ui (14DB/17DB) #485, KU4XO in EM84vt (12DB/16DB) #486 and WAS 48, AA5C in EM13se (13DB/17DB) #487, DG5CST in JO60ds (14DB/4DB) #488, N1QG FN34mm (20DB/18DB) #489, KB7Q/UT in DM58cv (22DB/26DB) #490, SM3LBN in JP80io (13DB/16DB) #491, W7JW in EN82 (12DB/10DB) #492, W5EME in EM32ai (22DB/23DB) #493 and W2HRO in FN20ll (23DB/14DB) #494. Overall, I made 96 QSOs. My next project is SSPAs for 432 and 1296 to be located directly in the dish. Look for me in May during the Dubus VK3UM Memorial 1296 CW Contest.

OK1KIR: Vlada vlada.masek@volny.cz and Tonda were recently on 70 and 23 cm EME -- In March we active only on1296; we made QSOs using Q65C unless noted on 12 March at 1802 RD4D (+1DB/5DB) for digital initial {#453}, 1817 PA1PS (23DB/8DB) {#454} with 3 m home-made dish and only 8 W, 1905 GI4DOH (18DB/9DB) {#455} for a new digi DXCC, 2049 PA0BTR (18DB/3DB) {#456} with a 3.5 m dish and just 3 W!, 2115 K5QE (15DB/21DB) {#457} and 2231 K6VHF (8DB/6DB) {#458}, on 13 March at 0011 KU4XO (15DB/18DB) {#459} from SC - (Matt's QSL will replace card of N4CNN (SK) to confirm SC for WAS) and 0116 HI dxpedition, N1V (20DB/22DB) {#460} for new digi DXCC and new digi BL field, and on 14 March at 2219 SP6ITF (1DB/1DB) {#461} using JT65C, 2335 K5LA (19DB/18DB) {#462} and 2359 F9ZG (4DB/3DB) {#463}. Using CW, we worked on 14 March at 2152 SP7EXY (569/579) for initial #499 and on 15 March at 0032 W5AFY (569/579) #500. We also added on 13 April using Q65C at 2310 the CO dxpedition (DM57) of KB7Q (13DB/16DB) {#468} for a new digi US State. To complete WAS on 23 cm we are still missing QSLs from K5PJR in MO and need a QSO to WV. On 432, on 10 April with Q65B we worked at 1109 OK1VUM (8DB/8DB) for digital initial {#308} – located nearby and suffered from decoding troubles due to strong tropo signal, 1410 JR7PJS (19DB/10DB) {#309}, 1504 EA5CJ (9DB/18DB) {#310}, 1513 RD3FD (17DB/19DB), 1519 PA2V (8DB/14DB), 1522 DL1VPL (12DB/14DB), 1556 PA5Y (8DB/14DB), 1627 DL4RCE (23DB/27DB), 1857 W4ZST (19DB/17DB) {#311}, 1946 KU4XO (15DB/17DB), 1956 N1QG (18DB/21DB), 2002 WC8RK (21DB/12DB), 2010 PA2CHR (13DB/18DB) and 2018 dxpedition by KB7Q (18DB/19DB) {#312} in DM57; and using CW at 1544 OK1VUM (579/579) for initial #403. On 15 April with Q65B we worked at 0100 KB7Q (13DB/16DB) {#313}, also during Gary's CO dxpedition, for a 432 new digi US State, 0119 W5EME (23DB/20DB) {#314}, 0143 NN3Y (14DB/13DB) {#315}, 0233 using CW KB7Q (O/O) #404

and close to moonset partial also on CW VE3MIS (549/O) - probably due to pol misalignment.

OK1TEH: Hi (Matej) ok1tehlist@seznam.cz as I'm very busy at work and I had some health problems, I wasn't QRV much and so I worked in ARI Contest only VK4EME on 70 cm. I keep selling 3 cm transverters, please check out the FOR SALE section.

OK1UGA: Martin ok1uga@volny.cz reports on the OK VHF Club's 30th EME and Microwave Seminar at Medlov -- The EME and Microwave meeting was held on 22-24 April and was attended by 25 stations from OK, DL, OE, ON, HB9 and OM. More information is on the website www.vhf.cz. EME stations that participated in the seminar were OK1DAI, OK1DAK, OK1DCI & OK1VAO from OK1KIR, OK1CA, OK1DFC, OK1DIX, OK1USW, OK1VUM, OK1UGA, OK2DL, OK2AQ, OK2PE, OK2ULQ, OM4XA, ON7UN, HB9BBD, DL6SH, DL4DTU, DG5CST, DK4RC, DL7UDA, OE4WOG and OE9ERC.

OK1VUM: Mila mail@hcsradio.cz wrote us a report on his recent EME activities -- I had my first EME success on 432 during ARI EME Contest. I worked 41 digi contacts (mostly Q65B) and 10 using CW. QSO'd 16 W's, 6 DL's, 5 PA's, 3 UA's, 2 VK's, 2 G's, 2 SM's and one from EA, JA, HS0, OK, ES, ON and I. My antenna is 32 x 9 el yagis, 800 W SSPA capable of about 1.6 kW (can't use yet because I am limited by my antenna relay), and LNA with ATF54143. I tried to measure Sun noise and found it to be around 13.5 ~ 14.2 dB; however, it fluctuates and I haven't found the reason yet. Many of the stations worked with Q65B were speaker copy so that they could be workable using CW, but either they can't, or not set up to switch modes. I was pleased to log KB7Q's dxpedition that used single yagi. Some further pictures of my station can be seen at https://ok1kze.com/radioklub/klubove-akce/stavba-velke-anteny-pro-432-mhz. [Thanks to OK1TEH for translating this report].

OK2AQ: Mirek mirek@kasals.com participated in spring part of ARI EME Trophy -- After last year's poor autumn part the contest, I was looking forward to this year's spring round. My vision was of great participation and good conditions, as last spring. Unfortunately, the exact opposite was true. Looking at the phase of the Moon last year and this year, it confirms what I have been saying for a longer time. If the organizers of EME Contests choose the dates with the highest declination of the Moon under the impression that as many stations as possible will reach the Moon, then they are wrong at least on 10 GHz. At present, high declination is associated with the position of the Moon near apogee and thus with the greatest degradation, and on the microwaves also with a large "spread" throughout the window. This discourages many small stations. Further, stations in the southern hemisphere are also at a disadvantage. When the weather develops with strong gusts of wind and showers, like last weekend, it cannot turn out well. Stations with larger antennas decided to keep them parked. The result was in my case: only six Q65 QSOs with IK6CAK (16DB), DL4DTU (14DB), IZ4BFA (19DB), W5LUA (9DB), F6BKB (18DB), DL6ABC (8DB) and two CW QSOs with HB9BBD (539/429) and W5LUA (559/O). The weakest result in many years.

PA0PLY: Jan pa0ply@pa0ply.nl was active on 1296 during the ARI Contest -- At my new location I finally installed my 23 cm rig after operation/tests on 3 and 13 cm. Before installing, I replaced a noisy fan in the SSPA and discovered that around one of the devices were burned spots. 3 ATC caps were destroyed. Luckily, the device was still OK. After installing new ATCs, the amp performed OK. I use 2 x DF9IC amplifiers, which should be good for 400 W. Both halves ran 250 W on the test bench. After running some initial QSOs with IN3FCK (13DB/17DB), DJ7FJ (14DB/14DB), ON4LX (14DB/19DB), DK3WG (16DB/15DB), LA3EQ (19DB/17DB), F4DWB (19DB/18DB), OK1USW (19DB/19DB) and VK2DJS (13DB/10DB) on 1 and 3 April, I found that the RF output decreased with time during each TX cycle. The week before the ARI Contest, I rechecked everything but did not find any problem. At the dish, it still shows this behaviour. I concluded it might be the TX coax running to the feed. After replacement, all looked OK; and I started to prepare for the ARI Contest. Before the contest, I worked RA9FLW (20DB/20DB), IQ2DB (15DB/14DB), HZ0ZOP (22DB/18DB), KU4XO (23DB/24DB), TO1Q (17DB/16DB), KD5CHG (21DB/22DB) and KB2SA (16DB/15DB). In the ARI contest, I made 33 QSOs with 5 using CW. Besides RF power concerns during the night, Murphy passed by again. My keyboard had a drink spilled on it, causing some keys to stick. It was almost impossible to use the keyboard, HI! QSOs of note were PA0TBR using a 3 m dish and 3 W, OK1USW using a 1.8 m dish and 150 W, KD5CHG with a 1.8 m dish and 100 W. I tried with LZ1DX using CW, but Ned could not copy me due to QRM, etc. After the contest, I added using Q65C unless noted, OH3DP (25DB/27DB), ON4LX (19DB/26DB), I5YDI (519/519) using CW, PE1LWT (14DB/16DB), UA9FA (17DB/15DB), LA3EQ (19DB/19DB), II2OM (11DB/13DB) and RJ3DC (20DB/19DB).

PA2V: Peter pa2v@advipe.nl updates us on his 432 EME operation since Feb – We experienced some quite frightening storms in Feb. Some commercial communication and ham masts were destroyed. Happily, my array survived. I had my doubts watching antennas violently dancing in the wind. Because of the WX, I did not do much EME, but did add N9BX (30DB) using JT65B for an initial. March started with much better WX and better EME. I made using mainly Q65C on 5 March 2 QSOs, on 6 March 2 more including an initial with K7ATN (30DB/20DB)

for mixed #304*, on 7 March 4 more with an initial from 4X1AJ (31DB/26DB) #305*, on 8 March including a CW QSO with SM6FHZ, on 12 March one more and 13 March NN3Y (23DB/15DB) for #307*. In the Dubus 432 CW Contest on 12/13 March, I worked DL0BFA, OZ4MM, OH2DG, SM2CEW, DL9KR, OK1CA, SM6FHZ, SP9FVD #306* and G3LTF for a total of 9x9. During early March, Faraday rotation seemed higher than usual and sometimes produced locked out conditions [no echoes]. This was the case during the contest and was really annoying. I did not seriously participate but still like CW a lot. The contest offered the opportunity to work some. Because of the bad conditions, I was not active during the EU night time hours. Next time I hope to work some of my NA friends. I made on 3 April 6 QSOs, on 6 April 2 QSOs including a QSO with KB7Q during his UT dxpedition and another QSO on 8 April. During the ARI Contest on 9/10 April, I made 26 QSOs with 2 on CW. I also worked KB7Q in CO. I will be submitting my ARI log as a check log.

PA2CHR: Chris post@pa2chr.nl is organizing another EME dxpedition to a new DXCC with operation on 144, 432 and 1296. -- I am sorry, can't give information on the location yet. I can say the time period will be roughly between 29 May and 7 June. We will use same equipment as during our previous very successful dxpeditions to TG and VP2. We will have on 432 a single long X-pol yagi, FT857 and 400 W SSPA; and on 1296 a single 67 el yagi, FT857, Kuhne transvtr and 120 W SSPA. I'll have more details for the next NL.

PA3DZL: Jac pa3dzl@icloud.com sends new on his recent activity -- I worked the following INTIALS on 23 cm off the Moon. During the ARI Contest I made 40 QSO on 23 cm including 7 with CW, 1 with SSB and 32 with Q65C. I also made 18 QSOs on 2 m. Initials were using Q65C unless noted on 12 March K5QE for mixed #443*, on 13 March KU4XO #444*, W5AFY #445* and SP7EXY #446*, on 14 March N1V #447*, DXCC 87 and first KH6-PA 1296 QSO – very pleased, on 9 April K3WM #448*, DJ7FJ #449*, OH3MCK #450*, PE1CKK (19DB) – not an initial but he was running his terrestrial station with a 1.8 m dish and 400 W, F6KRK #451*, VE4SA #452* and KN0WS #453*, on 10 April GI4DOH #454*, NQ7B using CW in UT #455*, and on 13 April KB7Q #456* CO.

PA5Y: Conrad tried to serious compete in both the Dubus 432 CW EME and the ARI Contests – I managed to re-build the LNA box on my 432 array just before the Dubus Contest's start. I was able to reduce the loss in front of the LNA by about 0.2 dB, which should make a significant difference. After suffering a few sticking relay incidents in the past, I now have an HF4000 relay; hopefully, this proves more reliable. I started operation at 1750 and had 11 QSOs in the first moonpass. I decided to put the most time in on the 2nd moonpass, which for a horizontal only 4 yagi station was a BIG mistake! The conditions for EU to EU were terrible. I could only hear those with variable TX pol, and I had already worked them. I ended with only 12 QSOs and 12 mults in total, so only one QSO on Sunday! I worked the following stations: G3LTF, SM2CEW, OK1CA, OH2DG, DL0BFA, SP9VFD, G0JLO, SM6FHZ, DL9KR, K2UYH, VE6TA and LX1DB. I do not consider myself the best CW op and the libration and poor Faraday were especially challenging, but it was still great fun! The ARI EME Contest also had poor EU to EU conditions on 70 cm. I worked on CW SM2CEW, OK1VUM and K2UYH. Using the digi modes (Q65B and a few JT65B), I added VK2CMP, DL8DAU, OK1VUM, DL1VPL, EA5CJ, WC8RK, K5DOG, PA3FWW, N9HF, W7JW, RD3FD, W5EME, OK1DFC, UA0ALA, PA2CHR, OK1KIR, PA2V, DL4RCE, DK4RC, G4YTL, SM3LBN, NC1I, W4ZST, N1QG and KU4XO for another 25. I ended with a total of 29 QSOs. I worked KB7Q in both UT (during the ARI Contest) and in CO; in both cases on Q65B (17DB).

SP9VFD: Rafal's rgrygorow@gmail.com activity report for the 432 CW Dubus Contest follows -- I was QRV on 432 for the 12/13 March contest weekend. Recently, I build a 432 "pan cake" ring feed. I completed it only a few days before the contest; and I installed it on my new 6.4 m dish. Analysis on SM6FHZ's website indicates that for my dish, this feed will provide superior performance to other available designs. I bought a pan cake form. It was convenient solution. The follow link provides photos of my feed and more info: https://drive.google.com/open?id=18YjI3e3TBod8_ioPNmfiDprPFNpPJ7OE&authuser=rgrygorow%40gmail.com&usp=drive_fs. I also found a solution for moving the polarization. I use a Superjack 8" actuator drive. It is slow and does generate a lot of wideband noise when in operation. This was my first attempt on 432 with the new dish. The conditions were difficult for EU-to-EU station QSOs. Most of time I didn't copy my own echoes. At moonrise, signals from EU stations were copied with vert pol. Pol rotation was very helpful. The 6.4 m dish is much superior to my 8 x 23 el DK7ZB yagi under these conditions. The dish has better Sun/CS, CS/GN and the possibility to change pol. I had QSOs with UA3PTW, DL0BFA (same QTH as DL7APV), OK1CA, SM6FHZ, OZ4MM, G3LTF, DL9KR, PA5Y for an initial (#), DF3RU (#), SM2CEW, K2UYH (#), VE6TA (#), LX1DB (#) and PA2V (#) or a total of 14x14. I also heard OH2DG and G0JLO. I plan to be active again on 7/8 May on the 23 cm part of the Dubus EME Contest.

TK/HB9CRQ: Dan (HB9Q) dan@hb9q.ch announces his spring 2022 Q-Team Dxpedition – We will be going to Corsica. As it is ten years since DL1YMK's very successful dxpedition there, it seemed that a return would be worthwhile. There has been a huge growth in 1296 activity since then. We also want to concentrate on the higher bands particularly 6 and 10 cm, where there is also a major increase in operation. On 24/25 May the Dubus CW 10 GHz Contest takes place. Since we don't want to interfere too much with this activity, we have adjusted our activity plan accordingly. We will be QRV Friday on 5760, Saturday on 10 GHz, Sunday on 1296 and Tuesday on 13 cm. We believe this arrangement will make it possible for those QRV 5760 and 10 GHz to spend full time on 3 cm during the weekend and still have a chance to work us on 5760. We'll travel by car and ferry to Corsica and stay there for 10 days, doing some sightseeing/vacation and of course EME

on 1296, 23xx, 5760 and 10xxx. Sorry, but 3400 MHz is not allocated to amateur radio in TK. We have already booked the house and the ferry tickets from Livorno to Bastia and back. Team members will again be HB9COG, HB9CRQ and Sue (Dan's YL). Our QTH is a nice little house on the southwest side of the island in JN41ml, directly at the beach. Since our QTH is located in a bay open to the east our MR should be perfect! For MS we expect some 20° to max 30° elevation due to the mountains and some trees (we will only know exactly once we are there). But in any case, we should have good enough MS to work the US-Westcoast. Due to the fact that many, if not most of you, already have worked TK on 1296 and 23xx 10 years ago and the fact that we will be, unfortunately, in the same QTH-locator (JN41) as DL1YMK was, we will be QRV only 1 moonpass per band. We will start on 27 May (Friday) 5760.100 Q65D TK/HB9CRQ 1st CFOM from 0230 to 1230. 28 May (Saturday) 10368.150 Q65D TK/HB9CRQ 1st CFOM from 0300 to 1300. 10450.150 1st (on request only, please send e-mail to dan@hb9q.ch); QSY will be announced on HB9Q 10xxx logger. 29 May (Sunday) 1296.100 Q65C TK/HB9CRQ 1st RX on own echo from 0315 to 13.30. 31 May (Tuesday), 2320.100 Q65C TK/HB9CRQ 1st RX on own echo from 0430 to 1500. 2304.100 (during W/VE window, QSY will be announced on HB9Q 23xx logger). 2301.990 and 2400.100 (on request only, please send e-mail to dan@hb9q.ch). CW: As always, we will work CW on all bands. However, only with big-enough stations and after the pile-up on Q65 is worked. The equipment (as in past): 1.5 m dish 1x2 mm mesh, homemade automatic az/el control; 1296: 100 W at feed, circular, preamp at horn; 23xx: 90 W at feed, circular, preamp at horn; 5760: 80 W at feed, circular, preamp at horn; 10xxx: 50 W at feed, v-pol, preamp at horn. We will be using WSJT-X 2.5.4. On 23 and 13 cm we use Q65-60C with Doppler Control ("Own Echo", in other words we listen on our own echo). On 6 and 3 cm we will be using Q65-60D (if necessary JT4F) including Doppler Control ("Constant Frequency On Moon" and if necessary "Full Doppler to DX Grid"). Hopefully more people will take advantage of automated Doppler control. Especially on 6 and 3 cm; it is a MUST for successful QRP operations. We'll have internet access. During our activities we'll be stand-by on the HB9Q band loggers. We also will check our e-mails several times a day. How big needs your station to be to work us? On 23 cm a 2 m dish and 150 W at the feed; On 13 cm a 2 m dish and 100 W at the feed; On 6 cm a 1.5 m dish and 80 W at the feed; on 3 cm a 0.75 m solid dish with 60 W at the feed. QSL policy: QSL only direct including SAE to: HB9Q, P.O.Box 39, CH-5737 Menziken. If you wish to sponsor our activity, you are welcome to do so by using PayPal dan@hb9q.ch (please mention your call). We are looking forward to our TK/HB9CRQ dxpedition and hope to work many of you!

UR5LX: Sergey ur5lx@ukr.net [in contact with Matej] writes – I had to leave my EME QTH near Kharkov, and move with my family 200 km West to a safer place. At the new location we had some air raids, but no explosions yet and we are doing well. The town where is my EME QTH, was hit by bombs just one night after our leaving, including school, shops and farms; however, there were no victims among the people. Missiles are still flying above the city and nobody knows when it will stop. Back before the war, on 3 cm EME, I had a random QSO on 13 Feb UR3VKE who has 30 W and 180 cm offset dish. This QSO was Anton's first EME QSO – see https://www.youtube.com/channel/UC8-kpv39O500F8gpRxYnqag/videos.

UX4IJ: Oleg ux4ij@yahoo.com previously active on 70 cm EME writes on his situation -- After the start of the Russian war, my wife, daughter and granddaughter were forced to leave Kramatorsk (KN88TR). The city was constantly fired on with rockets. They went to Poland. It was difficult to find housing because there were a lot of refugees. On 19 March 2016, I made one 432 EME QSO with SP1JNY. I wrote Marek asking for help, not expecting a positive response. He turned out to be a true ham friend. He accepted my family into his home. He met them at the train station in Szczecin and gave them the second floor of his house. Marek and his family have devoted a lot of time to my family and also provided financial assistance. I want to say a big thank you to Marek! I hope to back on EME after the war, if my house, antennas and equipment survive.

VE3KRP: Fast Eddie eddie@tbaytel.net sends his report on 23 cm for April -- Winter is not ending here and has affected operation on EME. The temperatures have been low, with wicked snow storms that had high winds. I did manage to get on after I cleared the massive amounts of snow away from the dish. During the ARI Contest, I worked on 23 cm using Q65C on 9 April PA3FXB, IN2DB, DJ7FJ for a mixed initial (#*), OK1CA and DL1SUZ, and on 10 April DF3RU, IK3COJ, FG8OJ, G7TZZ, OM4XA, N1AV for HI dxpedition, K3WM, W6YX, KN0WS, PA3DZL, DJ3JJ, KB2SA and RA4HL for a total of 18 QSOs.

VK2CMP: Mick vk2cmp@me.com had an excellent time during and around the ARI Contest -- Upgrading my station to 4 x 21 YU1CF X-pols yagis from 4 x 15LFA's in Nov has provided a bunch of initials and some great signal reports. The new system also has the benefit of picking up less QRM in the city with its tighter beam width, particularly low to the horizon at my moonrise. The 4x15LA have made their way to a VK7; so hopefully we will have VK7 QRV on 70 cm soon. I worked 8 initials including 2 new DXCC in April. Initials were ES3RF for new DXCC, DL1VPL, PA3FMV, NN3Y, N9XG, HSOZOP new DXCC, OK1VUM and OK1DFC.

W5LUA: Al's w5lua@sbcglobal.net report for March/April -- On 12/13 March I worked the following stations on CW during the 70 cm Dubus Contest: DL0BFA, DL9KR, OK1CA, K2UYH and SM6FHZ. During the same time period, I worked OK1CA, UA3PTW, W7JW, WC8RK, PA2V, and DL1VPL on the digital modes, mostly using Q65B on 70 cm. I worked on 14 March N1V on 1296 in BL11 HI; on 17 March on 902 N1V in BL11 for State of HI and new DXCC, followed by VE6TA and WA3RGQ; on 6 April on 432 using Q65B N9HF, and KB7Q in DM58 UT; on 8 April on 1296 using Q65C TO1Q, RA4HL, GM0PJD, K3WM and KU4XO; and on 9 April on 1296 AA6I. At 10

GHz, I managed to fix the interlock issue on my big 250 W Siemens TWT. I run about 250 W in the shack and a measured 100 W plus at the feed. On 9 April I worked on 10 GHz OK1AQ on both Q65D and CW. Back on 1296 using Q65C, on 13 April, I worked IQ2DB; and on 14 April KB7Q DM57 CO, CX2SC, K6VHF, W7MEM, KU4XO and N5BF. On 15 April I worked KB7Q on 432 Q65B in DM57 CO. **I now have my XVTR/TWT for 47 GHz out at the feed of my 2.4 m dish.** I am receiving nearly 10 dB of Sun noise and 1 dB of Moon noise on 47 GHz. I was able to fix the interlock issue with my Varian VPW-2931 power supply. My Hughes 932H produces 25 W, as measured at a directional coupler. I have spent a lot of time and money on HV connectors in the hopes of solving my flashover issues at 14 kV.

W5LUA's TWT VPW-2931 power supply

In a recent schedule with JA1WQF, on 16 March I had about 30 minutes of successful transmissions and then a flash. This time I saw the flash in the power supply and it was right at the 14 kV connection on the PCB. At this connection, I have a HV wire that connects to the Cathode terminal on the back of the power supply. I believe it is just corona buildup and maybe some sharp wires. I plan to clean this up and use more HV putty from GC Electronics. Part number 10-8880. The dielectric strength is 550 V/mil, which I assume is .001 inch. See picture of the VPW-2931 power supply (above). I just have the acrylic plastic top in place, so I can see where the action is. The old fashion meter in the gray box is a collector current meter. The tube runs about 40 mA. I use collector current as an indication if I have the grid to cathode voltage set properly. The meter box is sitting on top of the collector voltage divider box, which consists of 18 x 200 volt Zener diodes. My tube is a dual suppressed collector tube that requires both 3500 V and 5500 V with respect to the cathode. The VPW-2931 power supply was designed for single suppressed collector tubes. Typically, the VPW-2931 supplies collector voltage at about or slightly less than 50% of the cathode voltage. In my case I had about 6600 V collector voltage with respect to the cathode, which I needed to drop to 3500 V and 5500 V. At the output of the collector box, you can see my 30 kV HV connectors. These should be more robust than the original 15 kV Rowe HV connectors. I am making progress, but it is slow! Two years ago, when JA1WQF and DL7YC and I were testing on 47 GHz, both stations were consistently copying me using either JT4F or QRA-64. At the time, libration was only 250 to 300 Hz and we were operating very near to perigee. Two years later in 2022, minimum libration is only about 500 Hz and occurs further away from perigee. Path loss is about 1.4 dB worse and if double the libration, it provides an additional 3 dB of loss; then we have an additional 4.4 dB additional degradation from 2 years ago. This month Mitsuo and I were testing with Q65-60E and CFOM. The challenge continues on all fronts.

W6BB: Michael (KT6V) put on a demonstration of 1296 EME for his Berkeley students on 9 March (mainly 10 March Z) -- Thank you all for your signals and patience with us as we setup the portable station and perform some intial trouble shooting. The real culprit was the calibration of our AZ/EL readouts. The Moon was at max el (~76°) when we started and make it very hard to eye ball the alignment. It was actually a good experience for the students to see how we brainstormed a solution. We had 10 students with about half having a license. They were very excited and bombered us with questions. Thankfully I another faculty, K6EE to help meet the demand. There was quite some joy when NC1I's decodes finally showed up. They were very eager to check out the dB readings on TX and RX as QSOs rolled in. We worked 8 initials with KL6M, K2UYH, NC1I, KB2SA, K6VHF, FG8OJ, W2HRO and XE1XA. KB2SA with his smaller dish was logged later whend we could better correct our aiming. We also saw our echoes in the echo mode (-31DB) with a nice clear spike. We had some fabric samples of the dish's cloth skin courtesy of W2HRO that were used to measure resistivity. I also discussed how Paul uses 3D printing to make parts of the antenna. Overall, it was a very successful event and I could tell the students greatly enjoy it. Eventually the system should be transfer to the roof of Cory Hall on campus. We used W6BB our club call for this event. It is normally used at an offsite campus location. On campus we use NU6XB in memory of our first call 6XB. Consequently, this event will probably be the last W6BB QSOs off the Moon for a long time.

WB5AFY: Dan wb5afy@wb5afy.net sends his March/April EME report – I have now completed construction and have feeds for 222, 432, 1296 and 2304 available for installation in my 5 m dish. I am working to finish feeds for 3400 and 5760 later this fall. I have been concentrating on 1296 and worked the following stations using Q65C: on 5 March IQ2DB, KA6U (EL87), KB2SA, FG8OJ, DF2VJ, IK3COJ, ES3RF, W2HRO, LU8ENU and KU4XO; on 6 March EA1IW, KA6U (EL88), F1RJ, PY2BS, K6VUH, DJ7FJ, FW7CC, YO2LAM and N0CTR; on 8 March N5BF, K6VHF and K9MU; on 12 March K3WM, KB7Q (DN45) and DF3RU; 13 March K5DOG, IK1FJI, PA3DZL, SM6CKU and HB9Q; on 14 March XE1XA, K5QE and KN2K; on 15 March

OK1TL, VE3NXK [?], OK1KIR, IK1FJI, WA3RGQ, OK1USW, F9ZG, UA3PTW and N0CTR; on 19 March OK1DFC, LU8ENU, W1PV, K5QE, CX2SC, KB2SA and K6VHF; on 8 April W7MEM, KB7Q (DM57) UT, ON4AOI, KD5CHG, VE4MA, TO1Q and GM0PJD; on 9 April IK7FZN, RA4HL, G7TZZ, PA0PLY, OK1DFC, DJ7FJ, PA3FXB, OM4XA, IQ2DB, VE4SA, W6YX, KD5CHG, W1PV, N5BF and KN0WS; and 14 April KB7Q (DM57) CO, WA3RGQ, XE1XA and KU4XO.
I plan to stay QRV on 1296 and follow KA6U on his rove through the many US states. My total mixed initials on 1296 EME now stand at #149* with 35 States and 125 grids worked on the band. I am interested in skeds and available anytime.

K2UYH: I (Al) alkatz@tcnj.edu had many conflicts this month that prevented me from being properly prepared for the March/April contests -- I was on 1296 for KT6V's 10 March Berkley Berkley student demo to work at 0212 W6BB (19DB/23DB) using Q65C – not an initial. On the weekend on 12/13 March I was active in the 432 Dubus CW EME Contest, but found the my pol rotator was not working, which turned out to be a major disadvantage. Much of the time that I was QRV, my echoes were very weak or none existant. They started to come back toward the end of my EU window. I worked VE6TA (559/559), G3LTF (569/569), DL9KR (589/579), SM2CEW (569/569), SM6FHZ (559/559), OK1CA (569/559), DL0BFA (589/549) – same as DL9APV, PA5Y (559/559), WA6PY (559/O), SP9VFD (569/559), partial VE6BGT (569/?) disappeared, W5LUA (559/559) and OH1LRY (559/559). Shortly after starting operation on Sunday, my VSWR went very high. The problem turned out to be a bad coaxial bullet, but it to me a while to find and essentially eliminated my operating on Sunday. I ended with a score of only 12x12.
It was fun while it lasted. On 15 March, I was on 1296 to work N1V (18DB/24DB) with Q65C in HI for mixed initial #731*. The real fun was on 17 March. W2HRO and I joined forces to get on 902 EME for N1V's HI expeditions. I had all the pieces for a 902 system, but never had them working together. Paul wanted to try his new 902 patch feed design. We started work on getting the system functioning about 9 pm local time, and discovered my transverter did not have near enough drive for my PA. Fortunately, I was able to find a couple of watt amp that got us to about the 150 W level. Amazingly the whole system seemed to work, but my flea market transverter was drifting like crazy. Much too unstable for Q65C! Also the noise level was impossible with garbage every ware. VE6TA was copying us, but could not decode us because of the drift – thanks Grant. We never heard anyone. We will be better set up for next time. I decided to operate the 9/10 April ARI Contest on 432. In hindsight this was a bad decision. I had not gotten around to fixing my pol rotator, and it turned out that the Faraday rotation was as bad or possible worse as during the Dubus competition. Most of the time, my echoes were not copiable. I QSO'd on 9 April OK1VUM (O/559) CW for initial #749, DL7APV (579/579) CW, OK1VUM (9DB/10DB) Q65B mixed initial #1066*, K5DNL (21DB/16DB) Q65B #1067*, DF7KB (11DB/11DB) Q65B and RD3FD (15DB/20) Q65B, and on 10 April DL9KR (589/569) CW, OK1DFC (569/569) CW, PA5Y (559/559) CW, DL1VPD (11DB/16DB) Q65B #1068*, DK4RC (11DB/11DB) Q65B, W2HRO (12DB/15DB) Q65B. I2DJP (19DB/30DB) Q65B #1069*, PA5Y (6DB/11DB) Q65B for a total of 14 mixed QSOs. Look for us on 1296 in the VK3UM Memorial Contest in May.

NET/CHAT/LOGGER NEWS: **PI9CAM** was to be QRV during the ARI Contest on Saturday 9 April by PC4M, PA8A and PA2DW. Plans were for the 25 m dish Dwingeloo Radiotelescope to be on 70 and 23 cm EME using only CW and SSB, with a focus on SSB for those who need extra points in the contest. **TO1Q** is a special callsign used mainly for contests and special events by FG8OJ in Guadeloupe. [It should count as a different initial]. **W1TV** is working on setting up a 1296 EME station in Huntsville, AL. Dick wants to entice youth people into the hobby. **W0ZQ** (MN) made his first 1296 EME contact last summer using a small system, which has encouraged him to work on a better station this summer.

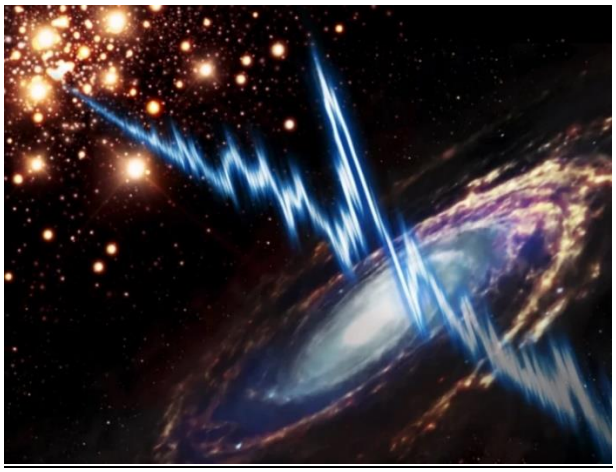
FOR SALE: **WA3ZKR** has for sale a 40' solid surface aluminum dish and other stuff including a big EL/AZ positioner. For more info contact Jeff at <kmec@aol.com>. **KB2ICI** is looking for large dishes (> 10' and more) that anyone wants to get rid of, for use by an amateur group trying to do radio astronomy. If interested contact Mark at 732-816-9168. **PA3DZL** has for sale some very nice high power 1296 30 dB Directional Couplers, 750 W avg with N-male and N-female; and SMA Radiall R570413000, 0-18 GHz, 28 Vdc, fail safe switches (40 pcs) - data sheet at https:// radiall-files.s3.amazonaws.com/tds/ramses/R570413000. pdf. I have for sale High Power 1296 Directional Couplers, 750 W avg and -30 dB coupling FWD/REF- Radiall SMA switch Fail Safe- Bandpass Filters (duplex filters) for 432 and 2304/2320/2400. I also have 1296 Isolators for sale. Very nice for a good and safe/stable isolation between your TRX and PA. Isolation ± 22 dB, Insertion loss ± 0.2 dB. Frequency Range 1.0 to 2.0 GHz. Forward PWR 50 W. Reverse PWR 10 W. Dimensions 70x70x25 mm, Weight 390 gr. Input and Output connector SMA Female. For more information, pictures and price email Jac at pa3dzl@icloud.com. **OK1TEH** has for sale cheap 3 cm OK1FPC transverters for serious DX hams (not QO100) for **290 EU** per one unit, further info can be seen at https://ok2kkw.com/next/ok1fpc_10g.pdf. Some of the first pieces were already shipped. If you need 3 m solid dish for 10/24 GHz EME, he has still one for pick up. Contact Matej at ok1tehlist@seznam.cz. **DU3T's** as reported last month is now concentrating on the production of KLNA 24 GHz preamps. These preamps are available from **PA0PLY not DU3T**. If interest contact Jan at info@pa0ply.nl.

OK1TEH's Tech Note: OK1UGA wrote an article with the of his dish's construction in the Czech language including details of his rib drawings that can be found at http://ok1uga.nagano.cz/soubory/eme/vystavba_EME_paraboly_pro_pasmo_1296MHz.pdf.

Radio Astronomy corner written by OK1TEH: Hi all, from time to time I find something very interesting to write up

from the radio-astronomy world; but I'd like to know what's interesting to the readers. Please don't be shy to write me of anything you would like to see more information on here.

A repeating fast radio burst source



In recent years, there have been several remarkable mysteries in the universe that scientists have not yet have answers. They include fast radio sources FRB (fast radio bursts), or short and very intense radio, which we hear from deep in the Universe. We have already detected a number of them, but unfortunately it seems that new observations and research only deepen the mystery. We still do not understand fast radio flashes and maybe we are missing something essential. This remarkable trend continues. The new research of the international team led by Franz Kirsten from the Swedish Chalmers University of Technology, recently detected additional fast radio flashes. They are so different from the previously known ones that they may be a whole new class of these signals. The new signals are about a million times shorter than the fast radio flashes, suggesting that we may have overlooked a large number of them. Another remarkable aspect is that they arrived from an area where practically no one would expect them. These are radio signals from the constellation Ursa Major space, which were detected in Jan 2020. Researchers used the EU VLBI Network radiothelshop, with which they traced a radio scream to its source. It turned out that it arrived from the edge of the Spiral Galaxy Messier 81, which is about 12 million light-years away from us. At first glance, it looks impressive, but most of the fast radio spores come from much greater distances, often in the order of billions of light years. Kirsten and colleagues even found that the ultra-fast radio flash came from a spherical star cluster, a densely arranged flock of old stars. This is quite atypical for the previously known radio spores. Usually the opposite is true. Among the main suspects produced by fast radio flashes are magnetars, pulsars with extreme magnetic fields. But the ball star cluster is a place where you wouldn't look for Magnetars. So where did an ultra-fast radio flash come from? Kirsten points out that during billions of years of evolution of spherical star clusters, many special things could happen. He and his colleagues believe that the originator of the detected signals could be a star (or its remnant) with an exceptional history. As for Magnetar, it is certainly not "ordinary" - even though this phrase sounds strange enough for such extreme and rare objects as magnetars. In this case, it could be a binary star with a white dwarf that stole the mass of his partner. It did not explode like supernova, but could collapse into the form of magnetar. This should be quite exceptional - but it is allegedly the easiest explanation of the source of fast radio flashes in the star cluster. But the hypothesis is quite uncertain. When it turned out that some of the signals of this ultra-fast radio flash lasted only a few nanoseconds, we found ourselves in the dark again. Such an extremely short signal should come from a very small body, according to the calculations with a diameter of perhaps only a few tens of meters - and at the same time extremely high energy. The mystery lasts, only in addition to the classic fast radio flashes, we also hunt their ultra-short version. More at: https://www.nature.com/articles/s41586-021-04354-w

FINAL: Plans for EME2022 are still in a state of flux due to Covid and the War in Ukraine. The date for the conference is now 12-14 Aug. See www.eme2020.cz for more details. Zdenek is confident that the conference will happen this summer, but we will have to wait a little longer before all the details can be worked out. Registration for participants is open again.

► We are sorry to report that W2RS recently joined the silent keys. Ray was well known among EMEers for his success at bouncing radio signals off the ionization tails of low earth orbit (LEO) satellites and QRP CW (before digital) moonbounce, primarily on 2 m. May he RIP.

► The popular Central States VHF Society Conference is back on again and will take place in La Crosse, WI on 21-24 July. It will be a fun event, and a great place to visit with many North American (NA) EMEers expected to attend.

► BEACONS – Both DK7LJ's 10 and 24 GHz Beacons are back in operation. The 3 cm beacon is now functioning well. G3WDG/DL3WDG reports that the sequence on the 3 cm Beacon after the callsign in the CW sequence is (I believe the minutes of that sequence) followed by random letters. The intended purpose was for SWL reports to be 'ratified' by correct copying of the random letters. The 1296 ON0EME Beacon is still offline, and there is no new news.

► We all own K1DS our thanks for his efforts to document this year's ARRL EME Contest results. Rick did not have an easy task. The Updated ARRL EME Contest Results are now on the ARRL Website at 2021 ARRL EME Contest - Final Results v1.1, see https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fcontests.arrl.org%2fContestResults%2f2021%2fEME-2021-FinalFullResults.pdf&c=E,1,8xgWiklk2WKbAxPCD3DFOOE35bQyzX_40La-P_u0i6YiQVxlet9funnK68_QJfMyFuYJs4YN6TevJlaE9UOVxJEWHP3ZWzuZxT_CN1w69dI--c3yo-9o7z3_9A,,&typo=1. The major winners were summarized at the beginning of this NL. The printed version of the EME Contest results in May QST were not correct due to problems with the ARRL's new computerized scoring software that was put in place this year for the first time.

After the inconsistencies were identified, the scores were corrected.

► One related contest issue that we need to be careful about is how we report our scores. If you seriously operate one band and submit a log for that band, but also operate other bands and do not submit logs for these other bands, the stations you worked on these other bands will **not receive credit** for their QSOs. You **must** submit check logs for these other bands for the stations you worked to get credit. This requirement can be especially a problem on the microwave bands. **If you do not submit a log for any band, it is not a problem.** However, once you submit a log, any unreported QSOs on any band will be treated as errors and deduced from the scores of the stations' you worked! Your score is not affected, it is the other stations.

► The May cover of QST has a colorful picture of OK1DFC's newly constructed 8 m offset dish. If you are looking for Zdenek's picture, you may visit his web: http://www.ok1dfc.com/eme/8moffset/8m_offset.htm

►**We wish everyone all the best on EME and hope to QSO many of you in the up coming VK3UM 1296 Memorial CW Contests. This contest is normally one of the most popular of the year. Take care and stay well – 73, Al – K2UYH and Matej – OK1TEH**

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The North Texas Microwave Society wrote at http://ntms.org a short remembering of W5HN. We have included it as an Extra to this month's NL that offersinteresting piece of our common history.

Remembering to Leroy May, 5AJG W5AJG W5HN (SK)

Leroy was the Patriarch of VHF/UHF/Microwave activity in the North Texas area. Leroy was the last station in Dallas running Spark. As he tells the story about one afternoon in 1923, he came out of his High School and nearly half of the hams in Dallas were waiting for him He was invited across the street for a Root Beer. Together they had gotten a tube, a porcelain socket, and someone willing to rewind his spark transformer. In short, all the parts needed for Leroy to build a CW transmitter and get him off spark! His interest in VHF started early. Leroy only needed 6 more states for WAS on 5 Meters, when WWII closed down the ham bands. After the war Leroy restarted on 6 Meters completing his 48 state WAS in 1950. Seems it took quite a bit of arm twisting to get one of the Dallas hams to make a DX pedition to Arkansas to give Leroy his last state.

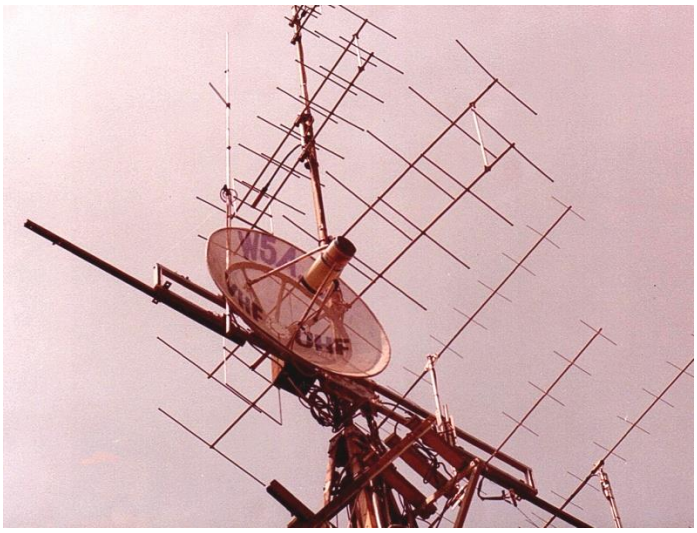
In the early 50's Leroy built a 20A Phasing SSB transmitter, and a 50 MHz transmitt converter modified from a WWII noise jammer and soon he was on the air. Only 3 watts, but it was SSB! A few years later a pair of 4X150's rounded out the station. I always liked his 5 element 6 Meter beam arrangement. The beam was at about 30 feet on an old 4"x4" wood beam with a Model T Ford rear bearing at the base. His rotator was a rope wrapped about the wood beam. The rope ends came back into his shack. He would hear a weak station, open the window, pull the ropes back and forth until the signal peaked, then closed the window on the ropes to hold the antenna in position. True 'Armstrong" rotator.

By the end of the 1950's Leory had added 144 MHz and 220 MHz SSB stations. Leroy was the only 220 MHz station in the 5th call district for nearly 20 years, and the only one in North Texas until WB5LUA and WA5VJB built stations in 1980.

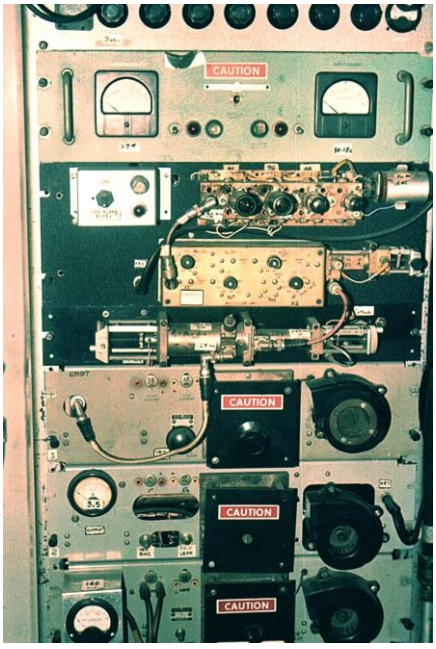
Leroy built his 432 MHz and 1296 MHz SSB stations in the 1960's. I first heard of Leroy in 1969 and was told of his morning 1296 MHz schedules with W5LDV. Chic was south of Houston, and a nearly 300 mile path, and to think you could have regular QSO's over that distance on that frequency was amazing to me. Leroy was one of the few people to acquire, modify, and get on the air a 6 tube UPX4 2C39 amp for several hundred watts output. Big power for that time.

Leroy also knew Sam Harris, W1FZ and the founder of Microwave Associates. Leroy ended up with one of Sam's commercial Para-amps. State of the art technology for it's day. W5LUA and I made several GaAs FET preamps for Leroy, but none of them ever worked as well at that Microwave Associates Para-Amp. (Note A Parametric Amplifier excites a Varactor Diode with microwave energy and uses that energy to amplify a lower frequency signal with high gain and very low noise.) It was after Leroy passed away just shy of his 90th birthday that I had that Para-Amp on my test bench and figured out what was happening. That Leroy had ever gotten it working on 1296 MHz was amazing. The amplifier was obviously built for 1.0-1.1 GHz L-Band use. In that frequency range you could dump just about any X-Band energy into the 'Pump' port and it amplified. As you moved the amp up in frequency the pump got more and more critical. At 1296 MHz the pump had to be in a 50 MHz window just above 12 GHz and in a narrow power range. Now it had 27 dB of gain and a 2.5 dB NF. Sure, we can beat that with a GaAs FET, but Para-Amps are a regenerative amplifier with a narrow bandwidth. Wideband down at 1 GHz, but only 2 MHz wide

at 1296 MHz. Acting like a very narrow filter, all of Leroy's 1296 MHz images and LO spurs were gone!



In the late 50's, Wayne Green was a cameraman for the Dumont TV station in Dallas. His publishing empire consisted of a Mimeographed newsletter on teletypes. Wayne would come by Leroy's QTH on Sunday afternoon with a 6 pack of beer. Now Leroy was a teetotaler, and was privately offended by this but let Wayne drink on his back porch. As 73 Magazine got started Wayne was always tapping Leroy for feature articles. In one issue of 73 Leroy had 5 articles.



Terry, W5ETG was working with the MARS organization at the Travis Air Base in San Antonio. Terry was a bit jealous of Leroy because it seemed like every time a new piece of Air Force equipment hit the MARS pile, the first one went to Leroy. But next month, there in the MARS newsletter was an article on converting to a ham band. Terry later agreed he was the best person for the first one.

Lastly, I want to mention Leroy's 2304 MHz station. His 2304 MHz Ratrace Mixer was even a feature article in a 1970's issue of QST. The transmitter chain was some old 1.8 GHz Microwave Link transmitters that had been used between Dallas and Houston. Not a lot of gain at 2.3 GHz, so he needed 3 to get up to the 10 watt level.

But now for the rest of one of my favorite stories. In 1979, using some parts that didn't meet spec from a work program, WB5LUA built a 2304 MHz station. Leroy dusted off some stuff he hadn't used in nearly a decade and gave Al his first QSO on 2304 MHz.

The North Texas Microwave Society honors Leroy by adopting W5HN as our Club Call.

Amazing Ham! Kent WA5VJB
http://ntms.org/files/SilentKeys/SK_Leroy_May_RevA.doc