

432 AND ABOVE EME NEWS JANUARY 2022 VOL 52 #1

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CONDITONS: The big news this month is the ARRL EME Contest. There are a number of 70 and 23 cm reports indicating the best score ever. 1296 was the center of attention and the band to be on if you appreciate the challenge and excitement of CW EME. However, **70 cm** still had a good turnout, especially on the digital modes. **DL7APV** had the top reported score of **159x64**, **PA5Y** ended **128x56 with only 4 yagis!** **OK1TEH** made **36 QSOs with a single yagi** – his best ever. **On 1296 OK2DL** is again number one with **172x64** for **1.1 M points**. **SK0CT** did well with **149x34**. **On 1296 CW only**, it appears **SP6JLW** has the lead with **95x40**. **KL6M** was close with **90 QSOs**. **Multi-band**, **UA5Y** should have the highest score with 404 QSOs – they don't give their score. **K2UYH** (297 QSOs) had of 4.38 M points just ahead of **NC1I** (295 QSOs) with **4.23 M**. However, we have not received final scores from several high scoring stations such as **UA3PTW**.

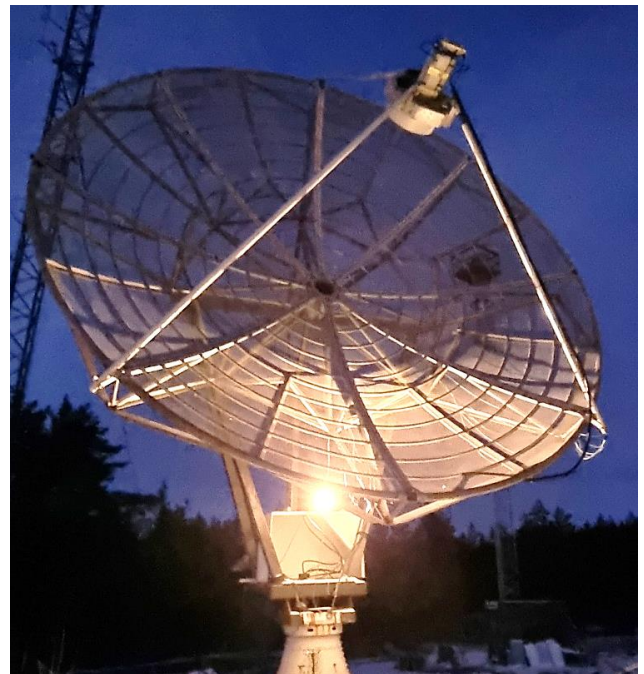
SSB CONTEST: Coming up on 5/6 Feb is the **F5SE Memorial SSB Funtest**. It is on **13 cm on Saturday and 23 cm on Sunday**. The rules were shown in the last newsletter (NL). However, what counts is making **SSB (or SSB-CW) QSOs and having fun!**

A NEW EME CONTEST has been announced by the RSS (Russian EME Contest Committee: RA3EME (Director), R3YA and UD2F). The dates for 2022 are 25/26 June for 144 & 2.3 GHz, 23/24 July for 432 & 5.6 GHz and 20/21 Aug for 1296 & 10 GHz and above. The contest allows both CW/SSB and digital participation and use of the Internet. Rules are at the end of this NL and found at <https://eme.srr.ru>.

DATE CHANGES FOR 2022 DUBUS/REF EU EME CONTEST: The dates of some of the Dubus weekends have been revised to avoid clashes with the RSS and IA, which operate with different rules; particularly regarding the use of loggers. The only weekends effected are for **13 cm now 4/5 June, 9 cm now on 30/31 July and 6 cm now on 2/3 July**. Be sure to correct your EME Calendars. All the other weekends are unchanged. The first Dubus Contest weekend for 2 m and 70 cm is on 12/13 March.

There are no dxpeditions scheduled for Feb. **KB7Q** is going to Utah on both 23 and 70 cm on 16-19 March – see Gene's report. **HS0ZOP** put Thailand on 1296 for the first time near the end of the ARRL EME Contest. **Alex** made 41 QSOs in a short time, but is now in EU. See his report in this NL.

There is a 70 cm CW activity time period (ATP) on 13 Feb 0100-0300 and 1500-1700. There are no conflicts, thus a good time to show up on 432 CW.



SK0CT had score of 149x34 on 1296 using a 6 m dish

NEW 222 MHz WORKED ALL STATES, WASs: Although 220 EME is not the focus of this NL, we try cover it as not other similar publication is aimed at 222. This December saw the culmination of a new race for 222 WAS. 222 WAS was first completed 37 years ago, in 1983 when **WB0TEM** and **W0VB** went to Hawaii with 8 yagis and an 8877 PA. Back then all QSOs had to be made on CW. There was high interest in the first 222 WAS. **W0VB** made the first along with ten others. Since then no one else has completed 222 WAS until early Dec when **K1WHS** QSO'd **W5ZN**. **Joel** drove to Oklahoma to give **Dave** his last State. However, this WAS is not yet official. **Dave** worked Hawaii back in 1983, but cannot locate all the needed QSL cards. [Sound familiar]. After **K1WHS'** QSO, **K5QE** and several others send 222 equipment (2 yagis and 600 W) to **NH6Y** in Hawaii. **Tom** had some initial problems, but worked **K5QE** first (with one yagi) to give **Marshal** possibly

the 11th 222 WAS, followed the next day by WA4NJP to give Ray very likely the 12th and several others. At least 5 additional WAS certificates are expected as a results of NH6Y's operation. According to the ARRL WAS list posted on their website, addition WAS certificates have been awarded to W5ZN, K5QE, K1OR, N9HF and WA4NJP to bring the total number of 222 WAS's to 15. See <https://www.arrl.org/files/file/WA50-Standings/WAS%20-%201296%20MHz%20-%2012%20Jan%202022.pdf>.

DL7APV: Bernd dl7apv@gmx.de sends his **2021 ARRL EME Contest report** -- After some sleep, here are my impressions of the contest. Condx on final leg were mixed, but not bad. The activity and condx were much better than in Nov. The date, just before Christmas was not optimum for best activity. I was on 3 bands; in 2 weekends, I made 324 QSOs, but many DUPs. I found the activity from US this year improved. I worked 5 on 1296, 33 on 432 and 36 on 144. Using same TX/RX period, I could run all 3 bands in parallel. This kept me busy and helped me during the night from falling asleep. I take short naps whenever it was necessary. Mr. Murphy was on holiday it seemed; I did not see him during the contest, Hi. My highlight was **23 cm** this year. With my tiny, temporary setup 1.3 m dish and 100 W, I made **30x19** using digital. I heard SM4IVE on CW but he did not copy me. The smallest station I worked was a 3 m dish; and I was heard by a 1.8 m dish, but no QSO. The 1296 rig will be dismantled this week. I did concentrate on **432** as always, but I was mainly looking for new stations. The final count was **159x64** (with 10 on CW). Initials in Dec were WA3RGQ in EL98 with a 3 m dish and 50 W, **T1K in EJ79** with a single 22 el yagi and 90 W, N7GP in DM42, 7M2MZN with 1 yagi and 50 W, NY1V in EM69 with a single 15 el quagi and IC7600 barefoot and GW4ZHI in IO82 on horz. I also added several on 2 m for a final count there of **108x54**, and **an overall total of 297x137**. Several 2 band QSOs were made; LZ1DX and UA3PTW were QSO'd on all 3 bands. All in all, it was two very nice weekends with a lot of fun. I will put logs and some photos tonight on my homepage at [//dl7apv.de/ARRL_2021/ARRL_2021.htm](http://dl7apv.de/ARRL_2021/ARRL_2021.htm). I am planning to be in Praha in Aug!

F2CT: Guy f2ct@wanadoo.fr writes on his **1296 activity in final leg of the ARRL EME Contest** – I operated exclusively CW and added at 5 initials. QSO'd during the Dec party on 23 cm were VK4AFL, DL6SH, OZ4MM, KL6M, DG5CST, HB9Q, PA3FXB, RA3EC, IW2FZR, UA5Y, 9A5AA, I5MPK, RA4HL, DL7YC, CT1FGW, F6KRK, SP5GDM, SM5DGX, W6YX, VA7MM, KA6U, K2UYH, VE6BGT, K0PRT, K3WM, N5BF, K7CA, DK3WG, VE6TA, NC1I, OK1KIR, ES3RF, IK5VLS, G4YTL, JH1KRC, IQ2DB, DL1SUZ, UA3TCF and LZ1DX for a **Dec total of 39 QSOs**.

F5KUG: Jean-Louis (F6ABX) f6abx@wanadoo.fr reports on his **clubs1296 CW activity in two legs of ARRL EME Contest** – We used a 3.6 m dish and 600 W SSPA using only CW to **score 56x29** in US States, VE Province and 18 DXCC entities. We had 8 initials with SKOCT #144, K0PRT #145, SP9VFD #146, UA5Y #147, N5BF #148, JF3HUC #149, **DU3T #150 and DXCC**, and RA4HL #151. It was a great pleasure.

GOOLX: Denis stantondenis@gmail.com is a *newbie* and reports for the 1st time in the NL -- I have recently become QRV on 10 GHz moonbounce, and just completed my fourth contact off the Moon. My equipment is all coaxial; the dish is a standard 1.2 m offset acquired from a satellite retailer; IOJXX feed; the rotator is a standard 1 deg SPID RAS; a 23 W SSPA; to a Kuhne transverter GPS locked and LNA; and Icom IC9700 for main IF. The complete system gives me 15 W at the feed. I want to thank everybody who helped me get on. The 10 GHz DLOSHF Beacon was especially valuable. I am looking forward to working many more.

G3LTF: Peter's g3lft@btinternet.com EME report for Dec on CW -- My plan for the final leg of the ARRL Contest was to concentrate on 70 cm and build up some multipliers. Unfortunately, on the first pass, 18 Dec, my PA had a problem and I had only about 200 W at the feed. I managed to work I2FHW, G4RGK, PA5Y and WA6PY. Paul is only a single yagi station; he gave me an (M) report, but as we have worked many times with small signals we completed without difficulty. I closed down at 0300, as there was no more CW activity. On the second pass, I had the 23 cm feed in and added VK5MC, I5MPK, UA5Y DUP, RA4HL, SP3XBO DUP, SP7EXY for an initial #517, S53MM, OM4XA, LZ1DX and SM6PGP. Heard was ES3RF. My **total on 23 cm was 76x33**. For the final pass I returned to 70 cm with the PA fixed and worked DL7APV, SM2CEW, PA3DZL, UA5Y for initial #489, S51LN, DF3RU, NC1I and YL2GD for a 70 cm total of 12x10; and an overall total of **88x43**. These figures are a bit down from last year and reflect two things: lower activity overall on CW and the contest hours, which meant you had to commit to 70 cm or 23 cm for the whole pass unless you either had dual feeds or were prepared to change feeds in the small hours.

G4BAO: John john@g4bao.com asks about 24 GHz operation with a RW1127 TWT -- I have successfully powered up my 24 GHz RW1127 TWTA with a fan cooling a heatsink. It produced 20 W at 130 mA Ic and 1.3 mA Ih. I have read various texts about intermittent CW keyed operation up to 35 W. Does anyone know what is a safe operating power for 60 sec on/off JT digimode operation? Has anyone made digimode QSOs with this tube? [PA7JB writes that his RW1127 can make 45 W, but runs 20 W in digital mode].



G4BAO's new 1.2 m dish with 24 GHz in place

G4DDK: Sam jewell@btinternet.com had a remarkable test on 1296 in Dec – I made a test contact with HB9Q on 17 Dec. My report from Dan was well below normal. Clearly something wrong as receive was normal. What made the QSO noteworthy was that when I tested my power, it was less than 1 W to the feed horn of my 2.3 m dish. Opening the LDF5-50 connector, located behind the dish, water poured out. Well, a connector's worth anyway! The center pin was black. Cutting back, the cable as dry beyond the connector, so I replaced the wet connector with a new one, and was able to be QRV on 23 cm.

G4RFR: John (G0API), Julian (G3YGF) and Carl (G6NLC) john.g0api@gmail.com report of their group's recent 10 GHz EME activity -- We at the *Flight Refuelling ARS* decided at short notice to test on 3 cm on 11 Jan. Our TWTA had not been run since Oct; so a period of outgassing resulted in an indicated 230 W output. Replacing the original 400 Hz turbo fan in the PSU with a 240 V pancake version reduced the ambient noise floor at the operating desk by about 70 dB! The moon was showing path loss around -1.8 dB and Libration spread was at least 200 Hz during our test. We were very happy to make QSOs with 10 stations during a 5 hour session. We worked using CW HB9BBD (429/569); and with Q65E OE4WOG (17DB/12DB), IK0HWJ (8DB/4DB), IW2FZE (12DB/2DB), F6BKB (14DB/1DB), G4YTL (14DB/1DB), OZ1FF (9DB/2DB), W3SZ (7DB/1DB), DL6ABC (7DB/2DB) and finally for **a new continent/DXCC CX2FC (14DB/4DB)**. We finished the day measuring the field density across our 12' dia dish face and in the surrounding area - good fun in the dark and mud carrying an HP power meter and WG based probe on a stick.

HB9Q: Dan dan@hb9q.ch sends a Happy New Year and a summary of his 2021 initials -- All initials are JT65 or Q65, if not marked CW or SSB. On 432: N5NHJ 1x12 el yagi & 35 W, DL2GWZ 2x12 el yagi & 90 W, F4BKV 1x21 el yagi & 50 W, KU4XO 4x21 el yagi & 200 W, RM5P 1x38 el yagi & 170 W, G1BHM 2x9 el yagi & 400 W no preamp & 1st EME, DB8WK 2x 29 el yagi & 250 W, MØCTP 2x23 el yagi & 400 W on hoz, **VP8EME 1x25 el xyagi & 300 W DXCC 169**, SQ2SAT 2x23 el yagi & 300 W, G1SDX 4x23 el yagi & 75 W, GMØPJD 3.6 m dish & 40 W, JA1TGO/R 8x27 el yagi & 50 W, SM6CEN 4x17 el yagi & 500 W, JH7IHV & 1st EME, ZL3NW 1x20 el yagi & 50 W & 1st EME, UR3VKC 2x33 el yagi & 50 W, G4BWP 4x23 el yagi & 400 W, IZ4FUA 4x11 el yagi & 250 W, F1RJ 1x21 el yagi & 150 W, AA5C 4x25 el yagi & 500 W, IW8RRF 1x9 el xyagi & 200 W, SP6VGJ 4x21 el yagi & 100 W & 1st EME, F6GRB 2x18 el xyagi & 40 W & no LNA, JA4LJB, JR7PJS 2x13 el yagi & 50 W, G8UDI 2x16 el yagi & 70 W, PA3FWV 4x16 el yagi & 65 W, KBØZ 4x14 el yagi & 100 W & 1st EME, KA6U (EL39, EL49, EL59) 2x25 el yagi, UA3MBJ 1x18 el yagi & 200 W, 9A5M 2x33 el yagi & 300 W, JA1LHC 8x27 el yagi & 500 W, WC8RK 1x15 el yagi & 600 W, PE1RXJ, G4CDF 1x20 el yagi & 45 W & no LNA on hoz & 1st EME, JF6CTK 8x26 el yagi & 200 W, HB9EHD 1x21 el yagi & 50 W, RZ3RZ 4x10 el yagi & 75 W, EM5EME in KN55, SV5/HB9COG 1x11 el yagi & 60 W, RJ3DC 2x33 el yagi & 500 W, DL1VPL 4x13 el yagi & 250 W, W7JW 8x33 yagi & 50 W, SM3LBN 8x8

el yagi & 100 W, DL7URH 4x16 el yagi & 700 W, F1NZC, TI2CDA 1x22 el yagi & 90 W and N1H FN33 **for a total mixed initials of 1224**. On 1296: OH3DP 1x67 el yagi & 150 W, LA1TN, JH3ACZ, YO5BIN, F6HTJ 90 cm grill dish & 50 W & no LNA & 1st EME, KB2SA, **DU3T on CW and SSB for DXCC#127**, IK7EZN 2.4 m dish & 5 W, KB7Q in (DM23, EM45, EM53, EM64, EM77, DN74), DL1AT 1.8 m 120 W & 1st EME, RJ3DC 4x50 el yagi & 300 W, SM5EPO 2x55 el yagi & 150 W, F4HBY 4x37 el yagi & 100 W on hoz & 1st EME, JH7BAY 2 m dish & 20 W & 1st EME, VK2BLS 1.8 m dish & 150 W & 1st EME, N2END, IK2DDR CW and SSB, NØCTR, OK1KKD CW, IK3MAC on CW, DJ7FJ on CW, WØZQ 4x45 el yagi & 40 W & 1st EME, **FG8OJ 2.4 m dish & 10 W & 1st EME for DXCC 128**, DL4EAU on CW 2 m mesh dish & 150 W & 1st EME, N6NU, **TX7EME 2 m dish & 300 W for DXCC 129**, VE7ZD 2x45 el loop yagi & 300 W, IK2TIF 2.4 m dish & 25 W, SV5/HB9COG on CW 1.5 m dish & 50 W, YO2LAM, IQ2DB, KA6U 1.8 m dish & 25 W & 1st EME, SP3YDE, 9A5M 2.1 m dish & 100 W on hoz & 1st EME, YL2AJ 1.4 m dish & 130 W & 1st EME, PE1CKK 1.5 m dish 250 W, EA1IW, DL7APV 1.8 m dish & 100 W, SV8KOU, PAØTBR 3.5 m dish & 3 W & 1st EME, GØHIK 2x33 el yagi & 200 W & 1st EME, N1FSK 76 el loop yagi indoor & 80 W on hoz & 1st EME and **HSØZOP 3 m dish & 50 W for DXCC 130 for a total mixed initials of 818**. On 13 cm: DL4DTU, **SV5/HB9COG on CW 1.5 m dish & 50 W for DXCC 69**, DG5CST CW, F5FEN CW, DL1SUZ and CT1BYM **for a total mixed initials of 197**. On 9 cm: DL4DTU 4.6 m dish & 75 W, **GM4PMK 3,2 m dish & 22 W & 1st EME for DXCC 39 and SV5/HB9COG on CW 1.5 m dish & 50 W for DXCC#40 for a total mixed initials of 87**. On 6 cm: IKØHWJ 2.4 m dish & 150 W, DL4DTU 2.4 m offset dish & 50 W, **CX2SC 1.8 m dish & 20 W for DXCC 43 and SV5/HB9COG 1.5 m dish & 50 W for DXCC#44 for a total mixed initials of 100**. On 3 cm: PAØPLY 3 m dish & 36 W, CX2SC in GF25mq 1.8 m dish & 10 W, F2CT on CW 4 m cassegrain dish & 60 W, SM6PGP on CW 2 m dish & 40 W, IUØBTM 1.8 m offset dish & 15 W & 1st EME, **SV5/HB9COG 1.5 m dish & 50 W for DXCC#43**, OH1LRY on CW and UA5Y 2 m dish & 100 W **for a total mixed initials of 197**. 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 like to work us send us an e-mail to dan@hb9q.ch or look for us on the loggers.

HSØZOP: Alex (HB9DRI) hb9dri@emeham.com surprised many of us by showing up on 1296 at the end of the ARRL Contest -- After my succes in 432 I tried hard to get my 23 cm station running, but unfortunately the SSPA decide to adopt Murphy from the begining. My DB6NT 1 kW PA worked great on the bench, but as soon I moved it to the antenna, I had oscillation problems. I found the problem, a faulty connector; but it appears the was damage to some of the ATC caps and the power never came back. Before I could get the repairs done, very sadly my young sister passed away – in 14 month I lost my mother, my brother and now my sister. I hope you understand why I maybe running behind schedule. On 19 Dec, just 6 hours before the contest start, I had a spike of insite and realized that I could use my IC9700 (12 W) to drive a single MRF286

SSPA that I built in 3 hours (not beautiful but works) to get 75 W on the bench. After coax losses, I had a solid 50 W at the feed of my 3 m dish. I had previously optimized the dish using the VK3UM software to reach 12.5 dB of Sun noise. My initial RX tests were superb; I was able to decode a station with a 1.8 m dish and 100 W. I started on 19 Dec at 1236 using Q65C and managed to complete my first 23 cm EME QSO from Thailand with W6YX. With in the next 7 hours, I complete 41 QSO's giving me 24 DXCCs. This is the same amount I have on 432 after a year of operation. The stations worked that day are W6YX, N1AV, N5BF, UA9YLU, OH2DG, UA3PTW, SK0CT, RA4HL, ES3RF, OK1KIR, OK1KKD, SM5GDX, RD4D, IK3COJ, YL2GD, SV8KOU, PA3CSG, ON4AOI, HB9Q, PA9RX, DF3RU, DL7YC, OK1IL, G4YTL, OM4XA, OK2DL, IK2DDR, RX6AIA, YO2LAM, G4CCH, PA3FXB, IQ2DB, SP5GDM, DK3WG, GM0PJD, IK7EZN, ZS6JON, DL8FDB, ON4QQ, IK5VLS, FIRJ, DF2VJ, DL1SUZ, SM7FWZ, FR5DN, DJ2DY, RA4HL, LZ1DX, PE1CHQ, K2UYH, EA1IW and a few more with in the next days before my departure to EU. Now the next step will be to fix the SSPA and have the 1 kW to for SSB and CW QSOs. I have received many requests for those modes. Please be patient, I'm working on it. What surprised me is the absolute absence of interference on 23 cm. My antenna is in the center of Bangkok; I was expecting a lot of noise, but NIL. The band is quiet as a dream. I will return to Bangkok on 12 Feb and i hope to have the station ready for SSB and CW within the next few days. As I promised after 23 cm, I will do an appearance on 13 cm. If this works, I will be on for just a limited time, maybe 2 or 3 days – a real dxpedition!

IK2DDR: Francesco frankddr@tele2.it was QRV on 1296 in the ARRL EME Contest -- In the Dec leg, I added 48 QSOs to bring my QSO total to 117. 48 were on CW and 69 digi QSOs. I was very happy to add many initials. I know my signal is not the strongest with only 300 W input, but since starting 23 cm operation in May 2020, I have been consistently surprised by the performance of my setup. [Last month we incorrectly listed his QSO total as 34; this was for CW only. He actually had 70 QSOs for CW and WSJT].

IQ2DB: Alessandro (I2SVA) i2sva@i2sva.it sends news on his group and its 23 cm results in the ARRL Contest -- The A. Volta EME Team in Como (I2ADN, I2DGH, I2SVA, I2UNE and IK2AQZ) started the project to set up a totally remote controlled 23 cm EME station more than two years ago. Building on the heritage of our friends I2MBC (SK) and I2SXZ (SK) who pioneered EME in Italy in the 70's on 2 m, and 10 years ago on 23 cm. Unfortunately, COVID has greatly delayed our project. Now, finally on 8 Oct, the station was ready to go on air with the ARI Como Club Callsign IQ2DB. We completed our first random 23 cm EME QSO with FG8OJ. It was a very nice start! Since then, we have made more than 150 mixed initials using Q65 and CW with 41 DXCC, in 20 Zones and 16 US States, and also have completed WAC. We were active in two legs of the ARRL EME Contest, multiop with a total score of 119x50 (104 Digi and 15 CW) in 34 countries, 14 US States and 2 VE Provinces. We operated most of the time remote.

Unfortunately, due to the low quality of our ADSL line, CW was a big problem (low speed and high latency). Our setup is 3 m dish, Septum feed, BigRas rotor and PSTRotor SW controller; on RX is G4DDK LNA at the feed, MKU 13G4 transverter, FlexRadio 6400 driving WSJT-X and MAP65; TX is he FlexRadio 6400, MKU 13G4 transverter, driver amp (80 W) in the shack, and a MKU PA23-1000CU from Kuhne installed in a weatherproof box on the back of the dish and running at about half power (500/600 W) + 4 m of 7/8" cable to the feed with remote control and monitoring of all components. We are now working at RX side improvement, since we are still missing 3-4 dB of sensitivity (Sun noise is at about 9-10 dB). Interestingly, we see that in about 70% of our QSOs that the report received (mediated for TX power differences) is better than the report sent by 2-5 dB. We have a web site that explain the project and document all the phases of the setup at www.alessandrovoltaemecomo.com.



The IQ2DB A. Volta EME Team (L to R): Angelo I2ADN, Alessandro I2SVA, Oscar IK2AQZ, Umberto I2UNE, Alberto I2DGH with their 3 m dish above.

K1WHS: Dave k1whs@metrocast.net writes on 222 WAS - I worked my final state on 222 in mid Dec. The last State I needed was OK. To get that, W5ZN drove there with a single yagi and 400 W. (Not like the old days!!) So I should be #11 and W5ZN and WA4NJP should have been next by working NH6Y in HI near the end Dec. I worked HI back in 1983 when WB0TEM and W0VB went there with 8 yagis and an 8877 PA. They were hot on getting WAS back then and about ten hams did it then. Since the 80's no one else did it until me and then W5ZN and Ray NJP. I looked thru

my cards and there must be a missing box as many of my old cards have disappeared. WB6NMT and W5RCI in 1981 along with K7NII and the Fish's (Fred & Lee - W5FF & K5FF). I can't find their cards. I recently worked another CA, but both K7NII and W5RCI are now both SKs. I am still looking for the cards. Heck that was a long time ago.

K5QE: Marshall k5qe@k5qe.com reports on the ARRL EME Contest and completing WAS on 222 – I teamed with KA6U to put 144, 222, 432 and 1296 on during the contest. We ended with a score of 2,928,200 points in the multi-op/multi-band category. KA6U operated 1296 from my QTH and logged 49 QSOs and 28 mults using his 2.4 m folding dish. This was a nice result for Peter who was out for the first time with the folding dish and patch feed. On 222, I am using a yagi array of 8 x 222XP40s with about 1.4 kW out. In order to get HI on 222, several of us got together and rounded up enough gear to do the job. We got donations for NH6Y of 2 x 16H yagis from Directive Systems with all phasing lines and a power divider, a Harris TV tray modified to 222, and a WD5AGO cavity preamp. He has a good signal when Faraday cooperates. I was able to work NH6Y when he was using a single 16 el yagi for my 49th State on 222, but I still needed OR to finish. Fortunately, soon after K7KQA did a dxpedition to OR to give me my 50th. It looks like there will have at least 5 new WAS awards on 222 very soon.

K7ATN: Etienne climb2ski@gmail.com is new to 70 cm EME, but now operating as a totally “Portable” EME station – I thought my new EME experiences may be of interest to the NL readers. I have received a warm welcome from the EME community with a single yagi 432 station that meets a special definition of "Portable" -- in that it can be carried and is battery-powered. This suits my interest in Summits on the Air (SOTA) that requires that “Portable” definition, plus operation from designated SOTA summits that have sufficient prominence. During the last weekend of the ARRL EME Contest as I was shaking down the station on the home patio, I worked my first three (70 cm mixed*) initials: UA3PTW, DL7APV and NC1I. Later in Dec I worked two more initials* - HB9Q and PA5Y under battery power from SOTA summit Bald Peak (Oregon), plus NC1I. These are the first EME contacts in the 20 year history of SOTA. A new K1FO yagi and a few other refinements are being assembled for my next Portable SOTA activation in Feb. Thanks to all those that provide the dB that I cannot carry! [VK2JDS has been QRV on 1296 EME with a 130 W SSPA using batteries that are solar panel charged. Also see NC1I's report in this NL]. [K7ATN on 432 EME from Bald Peak, OR... Making the climb].

KB7Q: Gene geneshea@gmail.com had a nice break in the winter weather allowing him to get on 23 cm in the first part of the new year from MT -- I bumped my mixed station totals to #92*. Using Q65-120D to combat apogee losses, I was able to work **CE3VRT (28DB/32DB) for new DXCC** and EA1IW (29DB/24DB). Other initial contacts with more standard Q65C were VE6TA (20DB/17DB), AG6GD (24DB/20DB), KA6U (24DB/27DB) and **FG8OJ (24DB/22DB) also new DXCC**. My headphones and paddle

are ready at my station should anyone want to give CW a go. Look for me from Utah on both 23 and 70 cm on 16-19 March. In addition, Colorado is a possibility as its next door. See for last minute details <kb7qgrid.blogspot.com>.

KL6M: Mike melum@alaska.net reports a fantastic time on the ARRL Contest -- I normally try to work 432 thru 5760 over the three ARRL weekends. I was out of town for the microwave segment, and I was having trouble with my 432 system, so I decided to do concentrate on 23 cm operation for both weekends, on CW only. We were having abnormally cold WX, so I was not inclined to do troubleshooting or feed changes. I still have an intermittent power output problem, which seems to be in my PQL amp. I plan to replace the output chip caps. It could also be a power supply issue. I ended up with 90 QSOs on 23 cm over the two weekends. I should have had over 100 if things had gone as planned (without the technical difficulties). I had at least 10 more on my wanted list, but ran out of time. However, **this is an all time high for me!** My full log is viewable at kl6m.com.



K7ATN climbing to portable location on right

N1FSK: Sandy sarlon2@icloud.com has returned to EME after 31 years -- After an absence of over 30 years from 2 m CW EME (old call WA1FSK), I am QRV on 1296 with my new call N1FSK. Just before the ARRL Contest on 17 Dec, I completed with old friend, HB9Q (14DB/24DB) using Q65C. I am using an **indoor** 76 el loop yagi sticking out from my high-rise apartment living room window. Because of the window's location, I am limited to operation near moonrise. Unfortunately, decoding issues prevented operation during the contest, but it looks like everything is working. I plan to be again QRV as a portable station from the State of Massachusetts in Springtime. My equipment lineup is a K3, 60 W W6PQL amp, 0.7 dB NF DB6NT preamp, and 76 el LY with 1.5 m of LMR600.



N1FSK's EME indoor operating position

N5BF: Courtney's courtney.duncan.n5bf@gmail.com 23 cm EME report for end of 2021 -- The Dec weekend of the ARRL EME Contest went quite well. All the equipment worked well through the weekend with only a few minor pointing calibration related problems. I was able to open at each moonrise by working tough ones on the edge in the far east. On Saturday it was RA9FLW in LO88 (25DB/19DB) for mixed initial #223* and on Sunday it was RX6AIA in KN95 (19DB/14DB) #230*. Other initials, many of which had been on my "looking for" list for a long time, were DL1SUZ (17DB/15DB) #259*, SP9VFD (569/559) on CW #261*, SP9DCS (569/579) on CW #262*, **W5GLD (9DB/13DB) #263* and US State 29 in OK**, W5AFY (8DB/8DB) #264*, SK0CT (7DB/7DB) #266*, JH7OPT (21DB/23DB) #267*, and minutes before the final moonset of the contest **HS0ZOP (25DB/21DB) #270* and DXCC 54 in Thailand**. A big success that we'd been working on for years was a CW completion with F5KUG (559/559) #260*. I also worked KA6U (19DB/21DB) on an equipment check in Texas right before the contest; then as K5QE (13DB/23DB) in the contest. The total submitted to ARRL was 94 QSOs with a mult of 46, **a personal best**. Although it was a bit slow after moonset in EU, I stayed on until moonset at this QTH all four nights (both weekends) and had a "best ever" final contest weekend by nearly a factor of two. (I have been QRV on 23 cm EME since Aug 2016.) The improved setup (extended dish in 2020 and upgraded IF rig in 2021) made many of the other QSOs more of a pleasure and less of a struggle than they had been in past; especially on CW where N4PZ (569/559), WA6PY (549/559), and WA9FWD (549/449) were straightforward and several other stations, noted in the "initials list" are just not heard or worked any other way. I know that "neighboring" W6YX and KB2SA both work some that I don't hear; but we all suffer the "west coast of the U.S." penalty and I think something on the order of 100 QSOs might be close to the limit of what can be done from my rather poor EME location, with a moonrise horizon of 10-15 degrees (depending on azimuth) and trees in about 2/3 of the remaining sky. It does help to "go ahead and try anyway" despite the trees and time limitations. RA9FLW, RX6AIA, and HS0ZOP were all worked through trees (on JT), with RA9FLW through trees on both sides, as was BD4SY and other VK/ZL/JA in the past. It's a pleasant surprise to complete through obstacles that were previously thought to be show stoppers, although all the extra trying does lead to more close calls and near-miss disappointments that would have been do-able "in the clear"! The trees raise the noise floor and attenuate the transmitted signal making CW tough once again; but sometimes there is enough SNR margin to get through anyway, especially on JT.

NC1I: Frank frank@NC1I.COM discusses his Dec and overall ARRL Contest results -- Winter weather and a lack of operators really cut into our contest effort in Dec. W1QA was unavailable, so I was operating 432 and 1296 by myself. The first night of the Dec weekend all my antennas had a light coating of ice. The dish was usable, but the 432 array had an SWR of over 3.5/1 and I was afraid to move the antennas due to the ice loading; so we lost the entire moonpass on 432. In the end this was a part time contest

effort with operation on 432 limited to three passes and 1296 limited to just over 20-hours total operation. Most of our 1296 activity was done by W1QA operating remotely from his home QTH. Our final numbers were 120x58 on 432, 103x49 on 1296 and on 144 (N1DPM) 72x36 for a raw score of 4,218,500 points. I was really disappointed with our 432 results. My EU total was way down from past years. I suspect by the time the Moon was up in NA most of the casual 432 stations in EU had shut down. Fifteen initials have been added since my last report, one prior to the contest weekend, seven during the contest weekend, and seven after the contest weekend. Last month I had incorrectly listed AA9MY and YO8RHI as initials; however, they had both been worked before, so I have adjusted my initial count accordingly. My current digital initial total is {#513}. **The most notable initial was with VE3GKT just prior to the contest weekend. Joseph was running a single 14 el yagi with 20 W at the feed. His station was set up in a park and he was totally battery powered.** Joseph was consistently decoded at (27DB to 29DB). No new countries have been added on 432 since the SV5 dxpedition. During the Dec contest weekend on 1296, I was able to spend some time on CW and worked about twenty stations on that mode. Eight initials were added on 1296 bringing my mixed total to #423* ({#317} digital and #155 CW). One new State was added (K0PRT in Colorado) bringing my 1296 State total to 44. 1296 activity was excellent. No new DXCC entities have been added on 1296 since the SV5 dxpedition. As of 5 Jan, I am 100% up to date on LOTW. I should be up to date on QSL cards by the middle of Jan.

OK1KIR: Vlada vlada.masek@volny.cz and Tonda send a short report on their club's EME end of year operation -- **We did not participate on 23 cm in the ARRL Contest**; however, we were *just* active on 23 cm on Sun 19 Dec. Earlier on 9 Dec, after sending a 23 cm test signal to HS0ZOP, we made a Q65C QSO at 1243 with IK2DDR (5DB/3DB). However, a QSO with HS0ZOP had to wait until the last part of the EME Contest, when Alex finally appeared with 50 W to his 3 m dish. **On 19 Dec we worked using Q65C at 1525 HS0ZOP (19DB/10DB) for digital initial {#447} as the 1st HS-OK QSO on 23 cm and a new DXCC.** We decoded Alex's signal at 2.2 degs of el with 5.5 dB of ground noise! Later at 25 degs of el, Alex was (12DB). A CW QSO would have been easy, but Alex postponed any CW/SSB until his 1 kW SSPA becomes repaired. Later on 19 Dec we added QSOs on Q65C at 1614 SM5DGX (+0DB/2DB), 1624 IK7EZN (8DB/7DB), 1629 OK1KKD (1DB/1DB) {#448}, 1641 SV8KOU (13DB/7DB) {#449} and 1808 SK0CT (4DB/2DB) {#450}; and on CW at 1706 DG5CST (579/599), 1724 OK2DL (589/599), 1726 KL6M (589/589), 1729 DF3RU (579/589), 1734 F2CT (569/569), 1742 IK3COJ (569/579), 1746 ES3RF (559/589) and 1749 G4CCH (589/599).

OK1TEH: Matej ok1tehist@seznam.cz -- I had my best results ever in the ARRL EME Contest on 70 cm. I ended with 36 QSOs. I worked on CW DL9KR (559), OE3JPC and SM2CEW; and using JT65B DL7APV (10DB), PA5Y (21DB) for mixed initial #154*, UA3PTW (20DB), NC1I

(13DB), S56P (25DB), UA5Y (20DB) #155*, K2UYH (22DB), DF3RU (16DB), S51LF (25DB), PA2CHR (23DB), VE6TA (24DB), VK4EME (26DB), PA2V (22DB), DL5FN (24DB), HB9Q (15DB), PA3HDG (25DB), UT2EG (26DB), PA4VHF (27DB), UB4UAA (28DB), YL2GD (28DB), IW4ARD (27DB) #156*, K4EME (23DB), DL8DAU (27DB), SM7THS (24DB), OH2DG (20DB), ES3RF (24DB), EA5CJ (24DB), N1H (24DB) (not in contest) #157*, DK3WG (18DB), PA3CSG (19DB), 7M2PDT (27DB) #158*, G4RGK (27DB), SM7THS (25DB) DUP, PA3DZL (25DB) and SQ9CYD (28DB). Heard were DL2HWA, W7MEM, K5DOG and KD2LGX. My advice is when working in a contest, especially small stations using JT65B, PSE always use old (O) reports.

OK2DL: Marek ok2dl@seznam.cz sent his report for the final part of the ARRL Contest on 1296 -- After a month the contest weekend arrived. Outside the temperature was around zero degs; no frost fortunately. On Saturday, the wind started to blow quite strong. In the morning after the moonset my antenna was very hard to park. Saturday afternoon, I was QRV from 0 deg el, but trying to avoid ground level blockage. The activity from the east was miserable. When the Moon came around to the west, the wind picked up again; and I had to park the dish and went to bed at midnight our time. By Sunday evening, the wind had calmed down a bit and I made a few more contacts. Overall, for both rounds, I made 172 contacts of which 100 were digital in 26 States and province mults + 38 DXCC (x64), for a total score of 1,100,800 points! Initials in this round were W5GLD, K7/VE4MA, PA0TBR, SV8KOU, G0HIK, SP7EXY and **HS0ZOP**. There were a lot of stations with small antennas for tropo that wanted to try EME.

OZ4MM: Stig gsvestergaard@gmail.com writes on his participation in the ARRL EME Contest -- I ended the contest with all operation on 23 cm using CW with a total of 69 stations. This was a good score considering that I wasn't too active. I tried to be QRV primary around my moonset and only little at moonrise due other commitments. New stations in Nov were SK0CT, DL1AT, SP3YDE, NQ7B, K2QM, K3WM, IQ2DB and NT6V. In Dec, I added only SP9VFD. I found good condx and a fair amount of activity on the low end - CW band. I enjoyed the activity and had planned to be on 70 cm too, but was busy with conflicting activities; so stayed exclusive on 1296. I should have removed my 432 dual dipole feed, which degrades 1296 by about 1.3 dB - hi. I hope to be little more QRV on 70 and 23 cm EME in 2022.



OZ4MM's 10 m dish above

PA0TBR: Ton pa0tbr@mubo.nl sends his first contribution to the NL, and his story of success in the ARRL Contest on 1296 with only 3 W -- I am new on 23 cm EME and only recently completed a 3.5 m homemade dish with a septum

feed. My radio equipment consists of a G4DDK LNA, SGLabs 1296 transverter, Anglian 144MHz transverter and an ANAN 100D transceiver. I produce approx 10 W in the shack and loose 2/3 of that in my 35 m coax, so I end up with only 3 W at the septum feed. I thought that there could be a chance that PI9CAM with their 25 m dish would be able to see my signal and so I prepared for the upcoming contest. The evening before the contest I heard HB9Q calling CQ, I answered him with my 3 W and I was greatly surprised when he came back and enabled my first 23 cm EME QSO. During the contest, I started calling the larger stations and ended up with 14 QSOs. What fun I had! After the contest I worked even smaller stations of which PA3FXB most surprised me with his 2.9 m dish. My congratulations to all those stations that copied my small signal; it is their fine setup that made this possible. My next step is to get more power; but with my 3 W, I am having great fun already.



PA0TRB's new 3.5 m dish with 1296 feed

PA3DZL: Jac pa3dzl@icloud.com reports on his Dec ARRL Contest QSOs on 70 cm and post contest activity on 23 cm -- I was only QRV on 432 in the contest for a short time as I wanted to check out a new 2 m array I had just constructed. During the time that I was on 70 cm I QSO'd on CW SM4IVE, I2FHW, SM2CEW, OE3JPC and DL9KR; and on JT65B OK1TEH, PA5Y, RD3FD, DL1VPL for mixed initial #310*, S56P, SM3LBN #311* and VK2CMP #312*, then on CW G3LTF, and back on JT65B PA2V, DL8DAU, YO2NAA, PA4VHF, 7M2PDT, UA5Y, JH7BAY #313*, YL2GD, F1NZC #314*, JR0WVY #315*, DL7URH #316*, DL7APV, GM0HBK, DF3RU, G4RGK, PE1ITR #317*, ES3RF, PA3HDG, DF7KB and S51LF for a total 33 QSOs (6 QSOs with CW and 27 with JT65B) and 8 mixed initials. After the contest I worked on 23 cm using Q65C unless noted OK1KKD on CW, EA1IW for mixed initial #427*, IQ2DB #428*, OK1KKD, SM5DGX, DL1AT on CW #429*, SK0CT, OK1DFC, PA0TBR #430*, IK2TIF #431*, IK2DDR, EW7CC # 432, KB2SA and OK1USW. I am now QRV on EME on 2 m and 70, 23, 13, 9, 6 and 3 cm.

PA5Y: Conrad g0ruz@g0ruz.com reports on his 432 results in the final part of the ARRL Contest -- I only added 26 more QSOs in the Dec leg. I operated for both Moon

passes. My final score is 128x56 (18 US, 3 CAN and 35 DXCC) for a total of 716,800 pts. Highlights were QSOs with **VP8EME and TI1K for new DXCCs**. 5 single yagi stations were worked as well as 7 CW QSOs. My equipment on 70 cm is 4 x PA432-23-6 (4 x 23 el) yagis, TH327 PA, TS-890S and a G4DDK Icen and 0.27 dB NF LNA mounted at the rear of the array with 1.4 m of LCF12-50 phasing lines. I also have an SAV451+ 2nd stage LNA preceded by a band pass filter and circulator. I am very pleased with this score for such a modest system and very glad that I slept most of the following Monday!

PI9CAM: Jan (PA3FXB) jvm@netvisit.nl writes about recent happenings -- Because of the pandemic the Dwingeloo 25 m dish has been closed down for many months. But in between lockdowns, we had some activities! The dish was open during the Nov leg of the ARRL EME Contest and we were able to be at the dish for a few hours. We were QRV on 70 and 23 cm, but only on CW at this time. Operators were PA2DW, PA3EKM, PC4M and me PA3FXB. It was great fun to be at the big dish once again and in just a few hours we had 43 CW QSOs. Earlier that year we had a small version of our annual lunar landing EME SSTV party. Again because of the pandemic, we had to do a short version. On 21 July it was 52 years ago that Neil Armstrong set foot on the Moon. In 2021 Moon availability on 21 July was not good so we moved to 10 Aug. We only had a few hours, so there no window to everyone. We had hoped to do an end of the year EME SSTV party in Dec, but then we were once again in a lock down. Let's hope we can do our next lunar landing EME SSTV party in a more complete way in 2022. Even with the short we we found quite a bit of SSTV activity. It was amazing to see what EME SSTV results can be achieved by relatively small stations.



PI9CAM received by ON5GS in 10 Aug SSTV EME Tests

RA3EC: Anatoly was on 1296 for the ARRL Contest in Nov -- I worked using CW OK1KIR (559), SK0CT (539), G4CCH (569), DG5CST (579), OK2DL (579), OK1CA (579), G3LTF (569), DF3RU (579) and SP6JLW (559).

RD3FD: Sergey KUZSERGE@YANDEX.RU reports on his active in the final round of the ARRL Contest on 432 -- My results were satisfying; I got to over initial 200 despite some of the worse EME and Dec weather conditions I have

experience. Periodically, I had to climb to the roof and beat off the ice and snow from my antenna. It helped a lot, but becomes more difficult with my increasing age. I ended with a score 43x23; not bad considering everything!

SK0CT: Christer (SM0NCL) sm0ncl@sk0ct.se reports on Ericsson Radio Club's participation in the ARRL EME Contest -- We operated on 23 cm in the multi-op mixed mode class. Operators were SM0RJV, SM0BSO, SM0ERR, SM0DFP, SM0CAN, SM0NCL and SM0KBD. We were located at the club station in MillHill and used a 6 m dish. Planning started long before the Nov weekend. Preparations consisted of a new circular dish feed, a new low-noise LNA assembly placed at the feedpoint, the modification of our IC-9700 23 cm radio to connect to a 10 MHz Rubidium clock, a new custom T/R sequencer, restored 23 cm SSPA, and also a fully restored operating room. Compared to previous years, we were in very good shape. The RX performance was greatly improved as a result of the new feed and change to circular from linear pol. Also removing coax losses between the LNA and feed made a big difference. CW is fun and that is reflected in our log; the majority of our QSOs were on CW. To allow smaller stations to work our 6 m dish club station, we also made 59 JT65C and Q65C QSOs. We worked stations using 1.8 m dishes, and 50-67 el yagis with 100 W or less power. We ended with a score of 149 x 34. We achieved the first 1296 EME QSO between Sweden and Thailand. We had several visitors to show live EME and meet old friends. We did suffer from a more than ten hours of power outage during the contest. The equipment survived; however, I am sure we missed some QSOs.

SM5DGX: Anders jatk@live.se discusses his experiences during the ARRL EME Contest -- I worked the contest only on 1296 and could not be on for the whole time period because for presently I can only use the dish between 10 to 34 degs. Thus, I missed a lot of moon time. It should be better by the next contest. I am satisfied with 128 stations QSO'd. 43 on CW, one on JT65C and the rest on Q65C. The smallest station worked was PA0TBR with 3 W. Conditions seemed great, and there was a lot of nice activity. My Hirschman cavity PA with a TH347 worked very well with 1 kW out. It did not get hot at all because of my big fan. This summer I will also be QRV on 10 GHz with a 3 m offset dish, 0.8 dB NF preamp and a 22 W SSPA. You can see more at my homepage <sm5dgx.se>.

SM6CKU: Ben ben@sm6cku.se was only QRV during the ARRL EME Contest's in Dec for a short time -- I was on for only three hours on Saturday evening during the contest. I worked 25 stations on 23 cm, but I didn't participate in the contest. I will probably send a check log. Still QRP around 50 W at the feed. On CW I worked DL1AT for an (#), G4CCH, UA5Y (#), DG5CST, SK0CT (#) and SP9VFD (#). Digital QSO's with PA3FXB, OK1KKD, OK1USW, DL1SUZ, DK1KW, DF3RU, SV8KOU mixed initial (*), DL7UDA, IK2DDR, IQ2DB, PA0TBR (*), SP3YDE (*), SM3KPX, OK2DL, OM4XA, IK5VLS, FG8OJ, IK7EZN, GM0PJD and UA4HL (*).

SP6JLW: Andrzej (SP6JLW) and team members Jacek (SP8OPN) and Pawel (SQ6OPG) sp6jlw@wp.pl send their **summary** of on their participation in the ARRL EME Contest – This year we took part in the contest in the **multi-op CW only multi band category**. We were on four bands with 23 and 3 cm under the callsign SP6JLW, and 13 and 6 cm used the callsign SP6OPN. We did not operate on 70 cm. As usual at this time of year, our high voltage power supplies failed. Our station is installed outdoors; not a good place for insulation above 1 kV; so, we were not surprised. We will fix the failures in the spring, and will be QRV in the next ARRL EME Contest. There was great representation by other SP stations - we have seven in our log and there were more working only digital modes. We QSO'd on 23 cm 95x40 with SK0CT, G4CCH, G3LTF, OK2DL, SM4GGC, DF3RU, N8CQ, WA9FWD, OH1LRY, G4RGK, RA3EC, DG5CST, OK1KKD, OK2PE, SP6ITF, SP7DCS, K0PRT, IK5VLS, OK1CA, SM5GDX, F5KUG, VA7MM, SP3YDE, WK9P, YL2GD, SQ7B, WA6PY, VE6SA, N4PZ, W6YX, IK3MAC, KL6M, IK3COJ, OK1CS, DL6SH, UA3PTW, SM6FHZ, VK4AFL, FR5DN, SP3XBO, UA5Y, F5JWF, VK5MC, OH2DG, F2CT, SP9VFD, JH1KRC, DK5AI, LZ2US, IQ2DB, IK2DDR, ES3RF, SM7FWZ, F6KRK, OM4XA, RN6MA, DJ7FJ, DL7UDA, SM5EPO, PE1LWT, AA4MD, OZ4MM, K2UYH, VE6BGT, WB2BYP, 9A5AA, K2QM, N5BF, PA3FXB, SM4IVE, DL0SHF, OK1DFC, IK6EW, VK4AFL, PI9CAM, OK2ULQ, VE6TA, W4OP, XE1XA, NQ7B, LA9NEA, RA4HL, VK4AFL, S53MM, IW2FZR, CT1VGV, SP7EXY, DU3T, JF3HUC, F5JWF, I5MPK, DL7YC, LZ1DX, ES3RF, SM6PGP, K3WM, DL4DTU, NC1I and G4YTL; on 13 cm (SP6OPN) 16x12 with UA5Y, OK1KKD, OIK1KIR, K3WM, VE6BGT, DG5CST, PA3DZL, F5FEN, OK2ULQ, OK1CA, SP3XBO, OM1TF, JJ1NNJ, K2UYH, VE4MA and VE6TA; on 6 cm 3x3 (SP6OPG) with UA3PTW, UR7D and SM6FHZ; and on 3 cm 19x13 with HB9BBD, F5JWF, IW2FZR, OK2AQ, F2CT, UR5LX, OZ1LPR, UA5Y, DL6ABC, DL4DTU, G4RFR, DL7YC, PA0PLY, IZ2DJP, 9A5AA, W3SZ, HB9BHU, IK0HWJ and W6YX; for an overall score of 133x68 for 904,400 points.



Tola assists at SP6JLW

SP9VFD: Raf rgrygorow@gmail.com report on 1296 during the ARRL Contest -- I was active in both recent legs of the ARRL EME Contest. I operated exclusively on random CW on 23 cm. It was my first participation on 1296. After over one year of construction of my HB 6.4 m f/d 0.4 dish, it was ready for use on moonbounce. In Nov leg of the contest my power was very low. I used a single MRFE6S9160 SSPA. My system was not checked or optimized. I still had a lot of fun when listening to own echoes regardless of the low power. For the final part, I built a new SSPA based on a W6PQL pallet. Two days before the contest, I installed the SSPA near my RA3AQ feed. Fortunately, all system worked properly. I measured system parameters with an SF=74 as follow: Sun/CS = 18.2 dB, CS/G = 6.7 dB and MN

= 0.5 dB. In both ARRL legs, I QSO'd KA1GT, DL1AT, IQ2DB, F5HRY, F5JWF, SP7EXY, SP3YDE, IW2FZR, OK1IL, ES3RF, IK5VLS, RA4HL, SM6CKU, PA3FXB, DL7UDA, DJ7FJ, CT1FGW, DU3T, LZ2US, OK2PE, FR5DN, UA9YLU, VK5MC, IK3COJ, UA5Y, RA3EC, S53MM, W6YX, N4PZ, N5BF, OZ4MM, W4OP, VE6TA, IK2DDR, N8CQ, SP3XBO, 9A5AA, SK0CT, JH1KRC, YL2GD, SM7FWZ, I5MPK, G3LTF, SM4IVE, SM6FHZ, K2UYH, SM5DGX, WA6PY, KL6M, WA9FWD, K2QM, W2BYP, K0PRT, WK9P, G4RGK, DL6SH, F2CT, UA3PTW, OK2DL, F5KUG, IK3MAC, DG5CST, DF3RU, SP7DCS, SP6JLW, OK1CS, SP6ITF, OK1CA, OK1KKD, DL0SHF and G4CCH for a total of 70 QSO and also 70 initials. I plan to be active on 23 cm in Feb for the SSB FUNTEST.

UA5Y: Alex (RA3EME) ra3eme@mail.ru reports on his contest group's results in the final part of the ARRL EME Contest -- We were preparing a whole year for this contest. On 144 we ended with 154 QSOs. Interference from the city severely hampered our reception. Sometimes we had to just turn off and wait for 30 ~ 40 mins until the noise abated. The patience of those we worked is appreciated. On 432 we had 72 QSOs with our new 5 m dish and two pol feed. Our SDR helped a lot. I have a feeling that we should build a 7 m dish for next year. We were QRV on 432 only on Saturday morning and Sunday evening. On 1296 we had 136 QSOs. I liked the continuous reception of nice echoes when operating with a 5 m dish. We heard well just about everyone. We used the SDR very little SDR on this band. On 2320 we had 26 QSOs. QRM from the cellular operators killed the American part of the band. The bigger dish helped and we did not lose that much. On 5760 we had 14 QSOs. Active stations seemed down from the past. We used a 3 m dish and 200 W which helped a lot. On 10368 we had 23 QSOs. Activity here was increased, possible due to an increase of our dish size from 2 to 2.4 m. On 24048 we made no QSOs because of the strong libration and bad weather. We didn't even try to change from 10 to 24 GHz. Overall, we had 404 QSOs. In general, the activity wasn't very good; probably affected by poor astronomical position of the Moon (declination and Apogee). The late contest date in Dec and presence of many stations just looking for initials did not help. We are already thinking about next year and preparing for upcoming Dubus Contest weekends and the new Russian EME Contest in the summer.

VA7MM: Mark (VE7CMK) and Toby (VE7CNF) va7mm@rac.ca report on their club's activity on 1296 for the recent two weekends in the ARRL EME Contest, multi operator, all mode class -- We wrapped up the event with 75 QSOs (24 CW and 51 digital) x 39 mults for 292,500 points, our fourth highest score in 19 years of operation. Initial contacts added to our log include on CW IK2DDR, DU3T for DXCC, K2QM and F2CT; and on WSJT SK0CT, OK1UGA, CE3VRT for DXCC, KB2SA, SP3DYE, IQ2DB, OM4XA for DXCC, W3CJK, K3WM, PE1LWT, DK5AI, W5GLD, K5QE, N0CTR and FG8OJ for DXCC. We now up to #295* initial (mixed mode) of which #145 are CW and #150} digital. VA7MM operates with an OZ9CR water cooled cavity amplifier, our power at the feed of our 3 m

dish is 200 W. On receive, we have a 0.33 dB NF receive preamp with about 35 dB gain total in three stages. We are available for scheduled contacts by e-mail at any time.

VE3KRP: Fast Eddie eddie@tbaytel.net sends his VE3KRP 23 cm EME report Nov/Dec -- The weather has been crazy here with unseasonal temperatures and limited rain/snow sometimes to the opposite end of the scale where the dish is buried in the snow drifts – Hi! Now COVID restrictions are limiting outings. On 23 cm using digital unless noted, I worked before the ARRL Contest on 19 Nov OK1DR and ON4QQ, on 20 Nov during the contest YO2LAM, RX6ATA, PA3FXB, GM0PJD, OK1UGA, AA4MD, DL3DTU, RA4HL, OK1IL (partial), SM4GGC, K2UYH, OH1LRY, CX2SC, DF3RU and W1LY; on 21 Nov SP5GDM, DL1SUZ for a mixed initial (*), IQ2DB (*), DL7UDA, OK1DFC, OK2ULQ, G7TZZ, RN6MA (*), UA5Y (*), K3WM (*), WA3RGQ, FG8OJ, W5AFY (*), KA1GT, K2QM (*), OM4XA, SP3YDE (*), N2END (*), N0CTR, OK2DL and KB7Q; on 18 Dec DF3RU DUP, ES3RF, UA3PTW, IK2DDR, EA1IW (*), OK1IL (*), PE1LWT, DG5CST using CW, W6YX, YL2GD, GM0PJD, K7CA, NC1I, N5BF, LZ1DX, KB2SA, DK5AI, K2UYH (DUP), IK5VLS and K5QE for a total of 53 contest QSOs.

VE4MA/K7: Barry barryve4ma@gmail.com writes on his Dec EME from AZ during the ARRL Contest -- I operated on 23 cm again with my 1.5 m offset dish and ~250 W. I was suffering from multiple problems with my computer caused by 2 summers of AZ heat. The video card died, so I only had one monitor; and the keyboard was corrupting my mouse actions. I only made 21 QSOs with 3 on CW. I heard many, many stations, but my QRP and the VE4MA/K7 call caused some problems and resulted in many QRZs. I will probably operate on 13 cm next month for the SSB FUNTEST. This next weekend will be busy with the ARRL's tropo VHF contest, so EME operation will be limited.

VE6BGT: Skip macaulay.skip@gmail.com wanted to try 432 during the Dec ARRL Contest weekend, but stayed on 1296 -- I wanted to install my new PIC controlled rotary 432 feed for the second half of the contest, but the cold weather here was just too brutal. It was around -27 deg C during the day with a strong wind. So, I just left the 23 cm feed in place and worked the band for two passes. I was wondering if the new big Slew Gear that I had installed would turn stiff or at turn at all in these frigid temperatures; but it moved with no problem, and just pulled an extra amp from the 24 volt supply. I added, all on CW were DG5CST (589/589), SP7DCS (599/569), K0PRT (579/579) and on SSB, SP6JLW (579/579), K2UYH (559/559), KL6M (589/579), N4PZ (579/579), VE6TA (579/579), SK0CT (579/589), DF3RU (579/589), W6YX (579/589), WA9FWD (579/579), G4CCH (589/589), WK9P (599/589), DL6SH (579/589), K3WM (569/569), SM4IVE (579/589), WA6PY (579/579), RA3EC (599/569), NC1I (559/579), F2CT (559/579) and OK1CS (589/579) for 22 more QSOs. **One very interesting condition, I saw on my panascope and copied, was when VE6TA was working PA3FXB. I could see both of Grants signals via some kind of direct path,**

and then the signal bouncing from the moon. At first I didn't realize what I was seeing, I thought maybe Grant had a bad transmitter, etc, but then it hit me. Both signals were very strong. Grant lives north of me in the range of around 100 miles. Both of our dishes were around 140 degs azimuth and elevations at 50 degs. Sure it could be a direct path off the side of our feeds, but there is my two story house and a row of spruce trees blocking the path. We have tried and worked each other direct before with terrestrial antennas on my side, but not this good. It was very interesting. I looked for the same condition the second night, but nothing was happening. To see and hear this weird effect go to my **UTube link and look at the recording I did of it - see <https://youtu.be/3CPYd7U8ghE>.**

VK2CMP: Mick vk2cmp@me.com sends news on his Dec 70 cm operation -- The final leg of the ARRL EME Contest was scheduled to start just two days after I received my brand new K4D. Needless to say there was a little voice in my head saying 'don't be nuts and make life hard by changing transceivers just two days before a contest... However, like most people I am blessed with more than one voice in my head and particularly with one of these voices saying 'you have got to be kidding you've been waiting 20 months for this radio how hard can it be to change the station interconnects, config the software and train the brain' - won out. It was a busy couple of days making new cables, changing software settings and re-programming the muscle memory to the difference between Elecraft and Yaesu radios. I caught a couple of contacts on the 1st night. I did Doppler corrections manually with the FT-2000; so this was the 1st time I automated the Doppler settings. It took me a few contacts to catch on to the fact that WSJT-X was changing the TX frequency every time I changed from Q65 to JT65 and back. The start of the contest had me receiving stations OK; however, my TX responses were not being copied. Most stations also seemed to prefer JT65B on 432 for some reason over Q65B. Why? I noticed a large number of stations were decoding on V pol. I thus transmitted on V pol more than normal. The 2nd night was very quiet; but I had *rush* at my moonset. I was being copied by several stations; however, I was not able to copy all of them. **I finished with only 13 contacts the 2nd weekend**, with two or three that got away. I ended the contest with 45 QSOs in the log. It was submitted two weekends go. It was a great contest and great way to learn about a new radio and play with my new 4x 21 el YU1CF X-pol yagi array.

W6YX: Gary (K6MG) ad6fp@lbachs.com writes on the Stanford Club's efforts on 1296 in the ARRL EME Contest -- We had some difficulty at the start of the first 23 cm weekend of the contest. A bad transmit line led to us losing the first 2 hours of moonrise; but a temporary fix got us going and kept us on the air for the remainder of the contest. **Over both weekends we totaled on 23 cm 105 QSOs x 50 mults** with 35 on CW and 70 on digital. The highlight for us was the excellent participation at W6YX from both students and the greater Stanford community. A total of 11 operators made QSOs, for many of them their first EME contacts. Operators were KM6MYI, AA6PZ,

N9JIM, KA6Q, KD2SSL, NF2S, KK6JOL, K6MG, KD2SSL, KI6CLA and K6TJ.

WA4NJP: Ray wa4njp@bellsouth.net reports on his 222 WAS, his big dish and plans to complete WAS on 1296 -- I use my dish on 222, it has the ability to hear just about anything -- made a 25 W on both ends QSO. For the WAS QSO with HI, I only used about 300 W at the feed. (I have a new amp on the bench with an 8938). The dish worked all 50 states on 432, (and has been in service since the spring of 1996. I feel comfortable on either 222 or 432 with this dish using manual tracking. Variable speed drives on each axis, zero backlash on elevation (a deliberate off balance keeps it solid) and only a few tenths on AZ. The first morning NH6Y in HI had only one yagi and decoded K5QE (21DB) with JT65B. The next morning when I worked him, he had 2 yagis and his signal was (18) and audible in the speaker. The strongest signal seen in the last 2 years of regular 222 EME came from K1WHS (6DB). I now have WAS on 6, 2, 222, 432 and will soon be on 1296 to finish there.

WA6PY: Paul pchominski@maxlinear.com was QRV in the last section of ARRL EME Contest using CW -- I QSO'd on 432 G3LTF and I2FHW. I didn't spend long time on 432; both stations called me on my CQ. I was transmitting using vertical pol with my single yagi. During my QSO with I2FHW pol was changing abruptly; I was forced to switch polarization a few times during receiving. On 1296 I worked VE6TA, W4OP, K2UYH, NQ7B, K3WM, SP9VFD, PA3FXB, JH1KRC, VK4AFL, VK5MC, DU3T, DL6SH, S53MM, NC1I, SM4IVE and VE6BGT for a total of 16 QSOs on 23 cm and 2 on 70 cm during the weekend.

WB5AFY: Dan wb5afy@wb5afy.net sends his Dec ARRL EME Contest report -- I had a good second weekend in the contest and finished with a total score of 193,800 - all on 23 cm with both digi and CW. On 18-19 Dec, I added 34 stations. Worked using Q65C unless noted were K2UYH, PE1LWT, LZ1DX, RD4D, IQ2DB, IK2DDR, OM4XA, SP5GDM, K0PRT, YL2GD, W5GLD, N5BF, YO2LAM, K3WM, W6YX, OK1UGA, DL7YC, SP3YDE, DL7APV, VE4SA, OK1KKD, GM0PJD, G4CCH (569/579) on CW, SM5GDX, LU8ENU, N1AV, DK3WG, PA3FXB, VA7MM, K5QE, AA6I, DF3RV, K7CA and VE6TA (569/569) on CW. I was late in getting down to the CW portion of the band and thus missed several other stations on CW. **Overall for the contest I added 51 initials on 23 cm EME and was very happy!** I have changed the dish over to a quad 222 feed and will be looking for new stations in the US on 222 for next few weeks. Later this year, I will swap in a new 432 patch feed and will be looking for new ones there as well.

WK9P: Tim tcherrone@yahoo.com is now QRV on 1296 and 10 GHz and considering adding 432 EME -- I was QRV during both portions of the 1296 EME ARRL Contest operating CW. During the Nov weekend, I mostly worked stations that were calling CQ and picked up 18. During Dec, I mostly called CQ. On 18 Dec, I was experiencing strong wind gust that made the elevation tracking very difficult and was under 95% cloud cover. The best I could do was peak

on stations on my echo as I worked them. On 19 Dec, the wind was calm, so tracking was working well again. Everything was going well, but I had been up since early morning because of work and had a bad cold. I ended up shutting down two hours early. Never the less, I had a great time with many great QSOs. Hopefully next year I will work the ones that got away. I worked 32 CW QSOs with DG5CST, OK2DL, OK1CA, G4CCH, OK1KKD, SK0CT, SP6JLW, K0PRT, KL6M, K2QM, WA9FWD, N4PZ, K2UYH, OZ4MM, WA6PY, W2BYP, SM5DGX, G3LTF, W4OP, DF3RU, F5KUG, IK2DDR, SP9VFD, VE6TA, RA3EC, SM5DGX, YL2GD, W6YX, NQ7B, VE6BGT, N8CQ, OK1KKD, SP6ITU and OK1CS. On 3 cm, I have a 1.8 m dish with 26 W at the feed. I see 0.5 dB of Moon noise. When the sun was more north, I measured 8.36 dB from cold sky to Sun at 87 SFI. I now am GPS locked and am thrilled to hear and decode the beacon on frequency. The dish is tracking well. Doppler tracking is also working great. I'm surprised I've made it this far as things are so much more critical at 10 GHz. Finally, on 26 Dec I worked my first 10 GHz QSO with OE4WOG using Q65D. I am also considering adding 432 EME. I have a GS35B amp that should give 800 W at a feed and available LNAs. I have started building a 4 dipole feed to use mounted around my 1296 feed. I plan to be active and am looking for skeds, especially on 3 cm.

XE1XA: Max general.manager@corix.us was QRV on 1296 during the ARRL Contest -- I was active for only a few hours on 1296 during the contest as age takes its toll. I operated on CW only because with a cataract surgery pending my small PC screen makes reading the WSJT-X window quite difficult. I had 15 CW QSOs with G4CCH, SP6JLW, SK1CT, DG5CST, OZ4MM, OK1DL, K2UYH, OK1DL, UA5Y, NC1I, G4CCH, IK2DDR, OK1KK, DL6SH and SM4IVE. Most stations had excellent signals and I was very pleased glad to find the CW band well alive. I had 370 W at my flared septum feed into my now 37 year old 5 m dish - but still in very good shape. I'm always getting good reports that make me remember the good old days when together with XE1RY we started in the seventies this EME business in Mexico with skeds arranged on the 20 m band and your NL coming by postal mail.

K2UYH: I (AI) alkatz@tcnj.edu teamed with W2HRO (432) and K2TXB (2 m) were on again in Dec for the last leg of the ARRL EME Contest. NE2U also operated. We QSO'd on 18 Dec on 1296 using Q65C at 0010 OK1UGA (4DB/4DB), 0022 RX1AIA (11DB/8DB) for mixed initial #715*, 0030 ON4BCV (19DB/16DB), 0034 DK5AI (19DB/19DB) #716*, 0040 RA4HL (+0DB/3DB), 0046 W5AFY (10DB/5DB) #717*, 0058 N0CTR (13DB/99DB) MN, 0102 SP5GDM (6DB/4DB), 0110 OH1LRY (3DB/6DB), 1128 VE4SA (10/11DB) DUP, 0144 PE4LW (10DB/11DB) #718* and 0212 AE6GD (5DB/8DB) #719*; then on CW at 0228 WA6PY (579/569), 0238 SK0CT (569/569) for initial #444 and #720*, 0241 W4OP (569/579), 0246 XE1XA (579/579), 0254 SP3YDE (559/559) #445 and 721*, 0256 RA3EC (559/599) #446 and #722*, 0300 DG5CST (579/579) and 0324 VE6BGT (559/579) DUP; then back Q65C at 0500 W5GLD (4DB/6DB) OK #723*,

0506 AA6T (5DB/5DB) #724*, 0511 W2LPL (11DB/15DB), 0518 KN0WS (12DB/11DB) new grid #725* and 0600 K7/VE4MA (12DB/12DB) AZ; switched to 432 on JT65B at 0628 F4VTP (23DB/O), 0651 T11K (27DB/O) #1063* and 0847 KU4XO (17DB/17DB) SC; back to 1296 on CW at 0945 VK4AFL (559/559); and on Q65C 1041JH7OPT (17DB/22DB); and on 19 Dec on 432 using CW at 0057 DL9KR (579/579); switched to 1296 using Q65C at 0146 LU8ENU (20DB/19DB), 0157 0157 EA1IW (14DB/15DB) #726*, 0201 DL7APV (17DB/14DB) #727 and 0204 FG8OJ (17DB/13DB); using CW at 0221 YL2GD (559/579), 0232 DL6SH (579/679), 0257 N1AV (569/599) #448, 0302 N8CQ (569/579), 0350 VE3KRP DUP, 0405 LZ1DX (6DB/+0), 0428 DK3WG DUP, 0506 F2CT (579/569) and 0525 SM4IVE (579/579); then switched to 432 using JT65B at 0542 G4RGK (12DB/13DB), 0546 DL8DAU (12DB/15DB), 0648 R1NW (22DB/19DB), 0730 GW4ZHI (23DB/O) #1064* and 0749 SM0DJW (18DB/O) #1065; back to 1296 using Q65C at 0834 N9JIM (13DB/15DB); using CW at 0850 VE6TA (579/579), 0856 VA7MM (569/579) DUP and 0909 JH1KRC (579/579); switched back to 432 using JT65B at 0948 RW0LDF (21DB/O) #1066*, 1018 JE1TNL (22DB/O) DUP; using CW at 1108 JF3HUC (559/559); and using Q65C at **2314 HS0ZOP (25DB/21DB) thru trees for #728* and DXCC 123**, 2331 ES3RF (17DB/17DB), 2335 RD4D (14DB/14DB) #729* and 2353 DL7YC (14DB/10DB). We ended with a mixed score on 1296 of 117x52 and on 432 of 60x34. Overall with 2 m and MW we had 297 QSOs and 4,380,800 points. Not our best but lots of fun. I hope to on for the SSB Funtest in Feb WX permitting on both 13 and 23 cm.

NET/CHAT/LOGGER NEWS: DL6SH reports that his CW initials are for 432 at #74, 1296 at #271 and 5760 #10. Slawek's total is up to #355. [PSE send your updated CW initials to G4RGK at zen70432@zen.co.uk]. **PA0PLY** was only an SWL on 70 cm during the Dec Contest weekend as he is still working on his station since he relocated from JO22 to JO32. Jan hopes to be QRV again soon; when he does many people will be pleased to work me for an added initial. **RW0LDF** was QRV on 70 cm during the ARRL Contest. Serge was not on 23 cm this year because he had problems with his 1296 PA, which uses 6 RA18H1213G in a ring configuration with water cooling. Two of the modules have died. **TX7EME** has sent most of the backlog in QSLs from his dxpedition. PSE check on my website, and if my card has not arrived yet, PSE let me know. He will send a new one. Same applies for his home callsign and for 3B8MB. **4Z5CP** tried 70 cm in the Dec round of the contest, but PA died and that reception was worse than even on the 2 m due to a lot of interference that came from who knows where.

FOR SALE: OK1TEH: CX2SC is looking for a 4 port WR75 switch for a test system for 10 GHz. If you have something email Ric at cx2sc.base@gmail.com. has still for sale a 3 m solid dish with massive ribs that is usable for EME thru 24 GHz. Any offer will be considered. Contact Matej at ok1tehist@seznam.cz for more info. **K1DS** has for sale a clean and unused 9 cm 40 W Toshiba UM2683A SSPA for \$120 with shipping in US. Contact Rick at

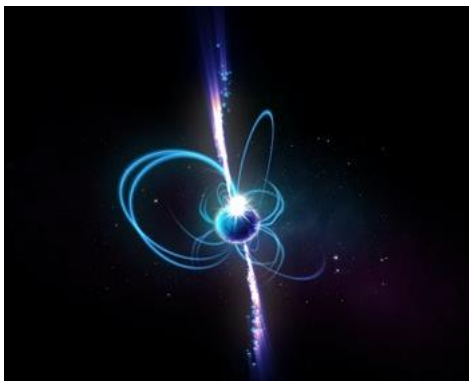
rick1ds@hotmail.com if interested. **PA3DZL** has for sale for his club a 432 GS35b PA with sequencer, coax relay protection circuits, etc. Shipping is possible but not easy as weight is > 45kg - pick-up in PA preferred. Jac also has 10 GHz SMA Directional Couplers, Omi-Spectra, Pwr 50 W with 10 dB and 16 dB Coup for Freq. 6.0-18 GHz; Marconi Bandpass Filters for 1296 with SMA connectors and attenuation on 1296 of <0.2 dB, at 1000 MHz -74 dB and 1600 MHz -68.5 dB; and SMA attenuators DC-18 GHz, 2 W, values: 1 dB, 2 dB, 3 dB, 4 dB, 6 dB, 8 dB, 15 dB and 20 dB, and other stuff. If interested email Jac at pa3dzl@icloud.com. **WA2FGK** has some 7289s available for cost of shipping. If can use contact Herb at wa2fgk@yahoo.com. **UKW Berichte** has stop production of HF4002 relays with 7/16" connectors. Only available 7/16" coaxial relay is HCS3000-7-16 - see <http://www.hamtech.hu/relay.html#panel2>. **DU3T's** 3 cm LNA WG LNA are available again. Contact PA0PLY and see http://www.pa0ply.nl/images/10368/XLNA-mk2-datasheet_rev1.jpg. **A 9 cm 130 W RIG** is for sale - see <http://mailman.pe1itr.com/pipermail/moon-net/2022-January/047396.html>. **For 5G QRM problems** contact PE1RKI about his great filters. **I3OPW** is producing WR19 relays, which can be used for 47 GHz. **Kuhne** company has stopped production of 47 GHz LNAs. **DB6NT** is selling PCBs for a Moon-noise meter. See http://www.db6nt.de/fileadmin/userfiles/_pdf/download_archiv/Moon_Noise_Meter_3.pdf.

TECHNICAL: N4QH asks if FT8 (and FT4) are usable on EME? W2HRO responds that it is technically possible to bounce an FT8 signal off the Moon. In fact, I did it with a specially modified test version of WSJT-X. The normal version of WSJT-X limits the FT8 mode to a maximum 2 second delay, which is not enough to compensate for the 2.6 second EME delay. Subsequent to my FT8 EME test, the WSJT-X team released Q65, which is much more sensitive than FT8. Q65 has a fast 30 second period mode, which gets close to the speed of FT8 (15 sec). A 15 second Q65-15 mode is not feasible due to decoder delay requirements. FT8 requires a signal 10 to 15 dB stronger than Q65-60.

TECH NOTE ON122 GHz: DB6NT written nice article about his 0.2 W system for 122 GHz band. See http://www.db6nt.de/fileadmin/userfiles/_pdf/download_archiv/CW-Leistungs-Sender-fuer-122-und-134-GHz.pdf.

RADIOASTRONOMY CORNER BY OK1TEH: Dear Astro corner readers, this time I am going to discuss pulsars again and then a new strange, hard to explain cosmic signal. First I'd like to point your attention to K5SO's webpage as Joe has prepared very nice overview of his Pulsar's reception - http://www.k5so.com/pulsars-detected/pulsars_detected_2.html. What is even more remarkable is his great article discussing how to start reception of the 8.4 GHz Deep Space Network (DSN) for signal from NASA satellites. Check out: <http://www.k5so.com/8-ghz-radio-telescope-project.html>. Have you seen the news that Astronomers have "Detected Strange Signals, We've Never Seen Before". At a distance of 4,000 light-years, a quite close in the Galaxy, is emitting

an extremely unusual radio source designated GLEAM-X J162759.5-523504.3. This signal was observed between 3 Jan and 28 Feb, then disappeared and showed up again between 2 March and 28 March in 2018. It has not been heard since. It was copied quite clearly producing an intense pulse of radio energy that varies from about 30 to 60 seconds and repeats every 18.18 minutes. (It disappears and then appears again 18.18 min. later). What is most strange is that it has been silent since then. How can such a signal turn on and then turn off. Radio astronomers have not given up hope of hearing it again. It has been speculated that it could be a unique *Magnetar* or a magnetized white dwarf. As our ability to observe the universe gets better and better; not surprisingly, we occasionally encounter very special *things* that arouse, stir and shake our basic hypotheses about the functioning of the universe. But sometimes it happens that we find something extremely special that causes wild ideas and speculation. This is what is now happening in radio astronomy. Natasha Hurley-Walker an astrophysics from the Australian International Center for Radio Astronomy Research (ICRAR) and her team discovered this source of radio radiation in a milky track. It was one of the most vivid radio sources in the sky at low (VHF) radio frequencies. It seems crazy that this source was observed for weeks by Hurley-Walker and her team; and then disappeared, then reappeared and now is gone. This is very suspicious. As the enthusiastic Hurley-Walker says, we didn't expect this. It's creepy because we did not know that such objects could exist. Researchers call it a "Radio Transient with Unusual Slow Periodic Emissions." However, an alien lighthouse is not first on the list of possible explanations. It was discovered using an iconic Murchison Widefield Array antenna located in the Western Australia desert, which works on 80 to 300 MHz. During the time period it was present, 71 pulses from the same place in the sky were received. Subsequent analyzes showed that whatever it is, it's probably smaller than our sun; and that it is very *visible* in the radio spectrum. It also was found that these signals are highly polarized, suggesting that the source has an exceptionally strong magnetic field. If these ideas are correct, according to Hurley-Walker, this thing converts the effect of a magnetic field on radio radiation more efficiently than we have ever seen. More can be read at <https://www.nature.com/articles/s41586-021-04272-x>.



Shows the surrounding environment around object if it's a magnetar.

SETI: Attention all EME stations! The SETI League is looking for volunteers to participate in its next-generation SETI search! Whether you built your station for EME, DSN or Radio Astronomy; SETI League needs your help! No station? No problem! We need volunteer hardware specialists, software developers and regional coordinators. We even have a station builders support group to help those wishing to build their own Radio Telescope! The SETI League, Inc. is participatory science. Founded in 1994, we are the international grass-roots organization dedicated to privatizing the electromagnetic Search for Extra-Terrestrial Intelligence. Join now and become a member of SETI League today! Questions? Email Scott, VE3CGN at search@setidata.ca, or visit our website at <http://www.setileague.org> for more information.

FINAL: Note to save space more standard Q65 mode QSOs that are 60 sec are shown without the time indicated; i.e., Q65C-60. Any nonstandard operation is listed with the full mode notation.

▶ I am sad to report that we missed the passing of KU4F on 3 Aug 2019 from a work related accident. Les had an outstanding signal on 432 and 1296 for many years. The last time I [K2UYH] last QSO'd Les was in Dec 2006. [TNX to WA9FWD for sending this info].

▶ BEACONS- Good news, both the 10 and 24 GHz beacons are back in operation. DK7LJ has repaired the AZ drive – not a small job. However, the 1296 ON0EME beacon is still offline. Part of the problem is that Eddy is in EA. ON friends are working on repairs, but a quick solution does not seem possible.

▶ It is now 2022! Have you made your plans for attending EME2022 Prague on 2-14 Aug. Now is the time. More info can be found at: <https://www.eme2020.cz>.

▶ We had problems getting the NL out on time this month. [Matej was sick with COVID19 and missed time at work and I had business travel and both of us needed time to catch up with QRL]. We both plan to be QRV in Feb, WX permitting. [K2UYH hopes to be active on both 13 and 23 cm for the SSB Funtest]. Look for us both off the Moon. We wish you much Fun on SSB, and great DX off the Moon. 73, AI – K2UYH and Matej – OK1TEH.



SP9VFD's new 6.5 m dish in the snow - seems right!

«RUSSIAN EME CONTEST» 2022 - Contest Details

1 Object: Two-way communications via the earth-moon-earth path on any authorized amateur frequency above 144 MHz.

2 Date and Contest Period: Three full weekend 48-hour periods (0000 UTC on Saturday through 2359 UTC Sunday) 2022 dates and designated bands:

- June 25-26, 2022: 144 MHz & 2.3 GHz
- July 23-24, 2022: 432 MHz & 5.6 GHz
- August 20-21, 2022: 1296 MHz & 10 GHz and above

3 Entry Categories:

MOAB — Many Operators, any combination of CW or digital modes, All Bands;

SOAB — Single Operator, any combination of CW or digital modes, All Bands;

SOAB-CW — Single Operator, CW, all bands;

SOSB — Single Operator, any combination of CW or digital modes, One Band, separately for each band: SOSB-144, SOSB-430, SOSB-2300, SOSB-5700, SOSB-10, SOSB-24 etc.

SOSB-CW — Single Operator, CW, One Band, separately for each band: SOSB-CW-144, SOSB-CW-430; etc.

The Multi Band logs will be also claimed as a set of Single Band logs splitted by worked bands. They will be competing in the Single Bands category with other Single Band participants.

4 Exchange: Each station must send and receive both call signs and a signal report in any mutually understood format, plus a QSO confirmation.

5 Scoring:

5.1. QSO points:

Count 1 point for each complete EME digital mode contact. Count 3 points for each complete EME CW contact.

5.2. Multiplier: Each DXCC entity (excluding all Russian entities i.e. UA3, UA9, UA2F etc.) plus each unique Russian call sign worked via EME on each band gives one point for the multiplier.

5.3. Final Score: Multiply QSO point total by the sum of multipliers worked from each band.

6 Miscellaneous:

6.1. QSO is counted, during which, all communications are copied over the EME path.

6.2. A QSO is considered completed if both correspondents have exchanged their call signs, reports, and got a QSO final confirmation.

6.3. All entrants, regardless of category, are permitted to use spotting assistance or nets including but not limited to DX-alerting nets, internet chat rooms, APRS and other packet, RBN and repeaters to identify stations available for contacts and to announce (self-spot) their availability for contacts. Announcements shall be limited to call sign, location, band or frequency, mode and if applicable transmitting sequence and listening direction. Such assistance may not be used to facilitate the completion of any contact once the contact has commenced. This means such assistance may not be used to convey receipt or non-receipt of any required element of a contact or to request a repeat of any required element of a contact (report, QSO start and end time, 73) .

6.4. Only one transmitted signal is allowed per band at any given time; alternating CQs on two or more frequencies using the same band and mode is prohibited.

7 Reporting:

7.1. Logs must be submitted within 14 days after the event (i.e. before 23:59 UTC September 4, 2022). All participants are required to fill up a special form at <https://eme.srr.ru/log-submission> to submit the contest log.

7.2. The list of received logs will be published at <https://eme.srr.ru>. In case you do not see your log in that list please upload your log again.

8 Awards:

8.1. All participants will receive awards issued electronically in PDF or JPG, and those who took the first three places in their category award will be sent by mail to a reported postal address.

8.2. By decision of the Organizing Committee, low power participants that have shown good results can also be awarded by special awards .

That requires uploading brief information about their station and the QSO procedure, as well as attaching EME setup photos.

8.4. The participation of sponsors is welcomed in the formation of the award fund. If desired, the call sign of the sponsor of the award is applied to the award (plaquette, pennant) and published in the relevant sections of the websites of the <https://srr.ru> and <https://eme.srr.ru>

9 Support:

9.1 All information about the contest could be found at <https://eme.srr.ru>

9.2. Questions about the competitions could be sent to the Organizing Committee through the Contacts form at <https://eme.srr.ru>

9.3. Participants of the competitions who have fulfilled the conditions of the award «EME Russia» during the contest will be awarded electronically without additional application.



More dishes in the snow!