432 AND ABOVE EME NEWS
JULY 2019 VOL 48 #7

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CONDITIONS: This June had the distinction of two EU/Dubus EME Contest weekends. The Dubus contests are limited to CW and SSB QSOs. The first for 6 cm was on 8/9 June and attracted a good turnout but the overall numbers were down from last year. The top reported score is from OK1CA with 26x26. The second and final Dubus Contest of 2019 was for 9 cm and on 29/30 June. OK1KIR has the top 9 cm reported score of 24x21 with some close competition. [Don't forget to send your Dubus log in]. **In July there are no contests, but a special Microwave activity weekend (MWAW) is planned for 27/28 July with 13 cm on the 27th and 9 cm on the 28th.** See the FINAL section for more details. The VE2TWO dxpedition to Zone 2 on 70 and 23 cm from 28 June to 8 July was highly successful with many QSOs on both bands and WAC. We hope to have their report for next time. OK1DFC put SP0VHF on 6 and 1.25 cm from Gajow on 6/7 June. Coming up is K6GM's US States 23 and 13 cm dxpedition to SD, ND, MT, WY and ID on 26 July thru 3 Aug – see Gary's report in this newsletter (NL). Unfortunately, the T46MB dxpedition has been postponed due to health issues. Don't forget the 432 CW Activity Time Period (ATP) on 28 July from 0100-0300 and 1030-1230. **In July Apollo Moon Landing 50th Anniversary Celebrations will be taking place around the world, primarily on 20/21 July. See reports on GB6GHY at Goonhilly; VK6EME (VK6 Group) at the 28 m Perth dish; PI9CAM's Lunar landing memorial EME SSTV party in this newsletter (NL); and N2MO with the 60' Dianna dish in NJ.**

DB6NT: Michael db6nt@gmx.de was active in EU/Dubus 6 cm EME Contest – During the weekend of 8/9 Jun I was only able to be on for only a short time, but appreciated the QSOs. I worked using CW SA6BUN, then with SSB JA4BLC, OK1CA, SP6JLW, OH2DG and TM1MOON, and with CW SP0VHF, OZ1LPR, DF3RU, UA3PTW, ES5PC, HB9Q, G3LTF, OH1LRY, IK3COJ, F1PYR and SM6CKU for a total of 17x17. Heard were LX1DB, SP6OPN, PA0BAT, SP7JSG and TM8PB. My station consists of a 3.7 m dish and an SSPA with 75 W at the feed. All stations worked had great signals!

DK3WG: Jurg dk3wg@web.de reports on his recent activity – I had initials on 432 in June using JT65B F8GHE, and in July VE2TWO in FO60 of Zone 2; and again but on 1296 using JT65C VE2TWO.

G3LTF: Peter pkb100@btinternet.com sends his EME report for June -- Most of my activity this month was on 6 and 9 cm. On 4 June I was on 6 cm for the G4NNS activation of the 32 m dish at Goonhilly. I worked G4NNS/A, SA6BUN and WA9FWD. In the DUBUS-REF 6 cm Contest, I worked on 8 June OK1CA, SA6BUN, ES5PC, DF3RU, OH1LRY, SP6JLW, UA3PTW, VE6TA, WA6PY, OZ1LPR, KL6M and W5LUA, and on 9 June OH2DG, DB6NT, TM1MOON, PA0BAT, HB9Q, IK3COJ, F1PYR, UR5LX, LX1DB, SM6CKU, 9A5AA (2.4 m dish and 35 W - smallest 6 cm station worked on random thus far) and WA9FWD for a total of 24x24. I missed most of the first pass because of strong winds here but when I did get on at about 2030, I enjoyed my first 6 cm "pile up"! I had hoped to get some JAs in the log on the second pass, but by the time the moon had cleared the trees at 1330 they seem to have all gone QRT. Activity seemed a bit down from previous years. The libration was very strong at times. My next activity was the 9 cm Contest. I worked on 29 June OK1KIR, OK1CA, OH2DG, OK2KKD, SM3BYA, SA6BUN, G4CCH, SP6OPN, OH1LRY, SP3XBO, SM6PGP and OZ5G; at this point my 10 V PSU burned out causing me to miss the NA window. I raided the PSU from my Oscar 100 TX unit (will it ever get finished?) and did some rebuilding, and was able to be on the next day when I worked ES5PC, 9A5AA, K2UYH, WA9FWD, VE6TA, KL6M, WA6PY and G4BAO for a total of 20x18. Again activity was lower than previous years. I heard OZ6OL. On 4 July, I was on 6 cm for the testing of VK6DSL/P with a 28 m dish. They were a big signal on SSB, but were having great difficulty hearing stations. Reports were exchanged, but I will not list it as an initial as the contact involved too much logger activity. They were

on for a further test on 6 July, but still with RX difficulties. Finally, on 4 July on 23 cm, I worked VE2TWO in Zone 2 for initial #475 with a nice signal on CW. **I plan to be on for the MAW on 27/28 July.** For the 20 July *MOON LANDING PARTY,* I have a very short window (0400 to 0600) at best, but I will try and be on.

G4BAO: John john@g4bao.com participated in 9 cm Dubus Contest -- I operated for a few hours on Sunday afternoon until my moonset exclusively using CW. I worked on random K2UYH, G4CCH, OK1KIR, WA6PY for initial #10, G3LTF and KL6M #11 and DXCC 6. Mike was a BIG signal, the strongest on the band. I ended with a total of 6x6. Getaways (heard) were OH2DG, SP6OPN, and ES5PC. All were called a number of times, but no reply was copied. I was running 75 W (2 x Toshiba SSPAs), a 1.9 m mesh dish with an SM6FHZ Septum feed and 0.6 dB NF LNA.

GB6GHY: Brian (G4NNS) brian@brcg4nns.org announces that the **50th Anniversary of the Apollo Moon Landing is being celebrated at the Goonhilly Earth Station**, where there will be a concert featuring the band "Public Service Broadcasting". Their videos can be viewed on You Tube, search for "PSB Go" to watch a particularly relevant one. In 1969 Goonhilly played a part in relaying the historic Moon landing images for broadcast in Europe. The team, who have used the 32 m antenna under the call GHY6 several times recently, will be on hand to relay greetings messages from members of the audience via the Moon. This is permitted under the terms of their special event license. They will use the callsign GB6GHY. They will set up the system on Friday 19 July for tests and rehearsals with the concert technical team. They will be QRV from their moonrise at about 2230. After the tests we hope to have some time for EME QSOs. From their moonrise on 20 July at about 2230, they will start with greetings messages from the audience and hope to have a QSO with the Perth (VK6) ground station that will be using a 28 m dish and 400 W. They expect to have very big signals. Afterwards, they will be looking for EME QSOs as time permits. Look for GB6GHY on the HB9Q logger.

HB9Q: Dan dan@hb9q.ch reports -- All QSL's for QSO's with SV9/HB9CRQ, for which we received a QSL until 30 June, are written and were mailed by 1 July. If you sent a QSL and don't get our QSL within the next 1 or 2 weeks, please let me know. Our QSL policy is that we QSL 100% if you send your QSL and a SAE to HB9Q, PO Box 133, CH-5737 Menziken. The full story and some pictures of our microwave dxpedition to SV9/HB9CRQ are online at https://hb9q.ch/2018/?page_id=1626. We are looking forward to working many of you in Oct from A21EME!

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp was QRV in the 6 cm Dubus weekend – When I tried to start operation, I found the arm attached to the elevation actuator of my 6 m dish had broken. The dish elevation angle was limited to below 40 degs. I repaired it, and on 8 June on 2400 worked JJ1NNJ (O/O) for initial #70 and JA6XED (559/559). I then switched to 5760 using my 2.4 m offset dish, and had new troubles there! My echoes were not heard despite JA8ERE reporting my TX signal its usual strength. It turned out my LNA protect relay was broken. I replaced it with another one; and was then able to work in the contest using CW on 8 June UA3PTW (559/559), OH2DG (569/569), JA8ERE (559/569), SA6BUN (569/569), OK1CS (569/579), KL6M (559/559), SP6JLW (569/589), DB6NT (569/569), JA1WQF (559/559) and UR5LX (449/559), and on 9 June WA6PY (569/569), K2UYH (559/559), VE6TA (549/559), JA6XED (559/559), ES5PC (569/569), OK1CA (569/559), HB9Q (579/579), OZ1LPR (559/559), DF3RU (569/559), TM1MOON (569/559) for initial #50 and PA0BAT (569/569) for a score of 21x20. My total score in the Dubus CW/SSB (1296, 2400, 5760 and 10450) is 704,000 points which is significantly better than previous score of 524,400 points. In the contest on 9 June JA8IAD was heard (T-M) quality with his new septum feed. On 11 June JA8IAD put his old feed (a VE4MA horn and screw phase section) back in place; and I worked him (O/549) with a big improvement.

K6MG: Gary ad6fp@lbachs.com reports a major rare states dxpedition on both 23 and 13 cm -- N9JIM and I plan to activate several western states the last week of July and first week of Aug. We will start in Lincoln, NE at the CSVHF Conference; and during the following week activate SD, ND, MT, WY and ID. The tentative schedule is as follows: 26 July NE, 23 cm, 27 July NE 13 cm, 28 July SD 23 cm, 29 July SD 13 cm, 30 July ND, 23/13 cm, 31 July MT 13 cm, 1 Aug MT 23 cm, 2 Aug WY 23/13 cm, and 3 Aug ID 13 cm. CW and JT will both be used. We will start on CW on moonrise on both bands. The equipment is a 5 m stress dish with 400 W on 23 cm and175 W on 13 cm. We will also have 6 m along for terrestrial QSOs. We hope to work you off the Moon.

K7ULS: Mike k7uls@yahoo.com (UT) has been experimenting with 222 EME – I worked N9HF in FL for my first 222 moonbounce contact in June. My QRP 17 el LFA yagi with my 225 W TE-2252g PA did the trick, but Dave did all the heavy lifting. I was also on 432 and QSO'd DL7APV with just an old FT-736r with no PA or preamp and a single M2-432-9wl yagi.

K7ULS 17 el 17 el LFA 222 yagi

KA1GT: Bob ka1gt@hotmail.com in June worked mostly on improving his 23 cm RX system – I worked on my feed, preamp, isolation relay and connections to maximize

sunnoise. I also slightly extended the dish. It is now equivalent in area to a 3.15 m round dish and has an f/d of about 0.33. The feed is a standard OK1DFC septum, but with a square to round flare and a mesh framed choke. My best Sun noise is around 11.5 dB (10.7 SF ~65 or 23 cm SF ~50). ON0EME peaks at around -7dB on WSJT-X at perigee and high elevation. Cold sky to ground (at -4 degs el into trees) is around 7.5 dB. I didn't work many new stations this month, but did work the VE2TWO dxpedition to region 2 for a new initial and a new region. They had a good signal at around (17DB) on 1296. Other contacts include W6YX, K5DOG, 4X1AJ, LU8ENU, W1PV, LA3EQ, PE1LWT, WA6HTP and N7JW (all on 1296).

KB8JNE: Sean mchenryproj@yahoo.com has been working on a 23 cm portable EME station for several months – I plan to take the whole station on a sort of shakedown cruise to Radisson, Quebec. I have an older mentor there who is a whiz at CW, for which I am not the best. After making my first JT65C contact back in Oct with HB9Q using 80 W and a single 45 el loop yagi in my driveway; I am now hoping to make a few CW QSOs. We will use the call K8BBQ and have near 200 W. Can someone point me to some good EME operating information? A breakdown of how to handle timings and message content for a valid CW QSO would be very helpful. I am also looking for ideas on the best contact frequencies for CW. [1296.020]. Feel free to contact me direct or point me to a good source through the HB9Q Logger, which I have been watching. [Sean was on the HB9Q Logger from his home QTH in June. I do not think he has made his planned trip].

KL6M: Mike melum@alaska.net had a great time on 9 cm Dubus Contest -- I completed 23 QSOs x 20 mults with OK1CA, OK1KIR, OH1LRY, SM3BYA, K2UYH, OK1KKD, SP6OPN, SA6BUN, G4CCH, WA9FWD, W5LUA, OZ6OL, SM6PGP, VE6BGT, VE6TA, OH2DG, OZ5G, ES5PC, G3LTF, WA6PY, 9A5AA, G4BAO #39, SP3XBO #40. My system worked perfect, despite the very short moon windows due to tree growth and low declination. I had no moonset window the first day, and the second day less than an hour. But signals were strong, and I received ten (579) reports and gave out 13 (579) reports.

N2MO: Dan (K2QM) marlow@Princeton.EDU reports that the InfoAge Center, home of the restored 60' Dianna dish ran a Celebration of the 50th Anniversary of the Moon Landing on the evening of 12 July. Unfortunately, their announcement arrived too late for the NL. [We do not have any details on the success of this event].

N5BF: Courtney courtney.duncan.n5bf@gmail.com sends news on his May and June EME -- In preparation for the ARI weekend, I managed to crash my computer and EME station software. After re-downloading WSJT and fooling around for 3 hours reconfiguring nearly everything, I was finally back on the air. Fortunately, this was all before contest's start on Friday afternoon local. Before 0000, I worked KN0WS (good to see Carl QRV again) and AA4MD both with good signals. I reworked them in the ARI event and had a good weekend run with a total of 20 QSOs, 16 were on JT65C and 4 on CW. Initials were made with IW8RRF (24DB/O) mixed initial #146*, SV9/HB9CRQ (26DB/23DB) #147* and new DXCC, and F2CT using CW (539/559) #148* and CW #43. I still need to finalize and submit the log. Other CW contacts were G3LTF (549/559) - always a pleasure), K7CA (O/O) and N4PZ (579/569). The furthest eastward reach appears to have been RA3EC in KO82 (17DB/13DB) who had 4 degrees left before moonset, while I was barely clear of the trees here. In June, I added WA6HTP #149*. Shortly thereafter my AlfaSpid rotator controller failed in "azimuth up" again and did not recover by any of the usual means previously discovered. It has now been replaced with a new az/el Green Heron. After some operational adjustment and some new elevation counterbalance mass, this rotator is working fine. It arrived just in time to enable me to work VE2TWO (25DB/28DB) #150* and a new Canadian Province. I am also working on a plan for receiver improvements this summer.

NC1I: Frank frank@NC1I.COM sends news his recent activity and about his 432 dxpedition plans -- For a variety of reasons I haven't been very active the last several months, although I did make time to get on for the dxpeditions on 432 and 1296. I believe I was successful in working all that made it on. I have performance issues with the 432 array that need to be addressed, but I need to find the time as well as coordinate some help. W1QA and I hope to announce a 432 dxpedition for Aug, but we have both had some health issues that have made it a bit uncertain. At this point, I would say that it will likely happen, but we are not confident enough yet to announce anything. If we can't pull this off in Aug, we may be forced to do it during one of the ARRL contest weekends. That would obviously have some advantages, but of course I would like to operate the contest from home. As soon as we make a final decision, we will let you know. The new portable 432 array has full polarity rotation. We have sacrificed 2 dB from the previous system (4 x 25 el yagis), but I think it will be well worth it.

OK1CA: Franta strihavka@upcmail.cz sends his June report for the NL -- I started my MW activity on Friday 7 June, when OK1DFC was QRV from the Gajow meeting in Poland on 24 GHz. Zdenek used the callsign SP0VHF. OK1KIR and OZ1LPR were also QRV. I heard OZ1LPR well during the tests; and we made an easy QSO at 1657 using QRA64D (16DB/15DB) with an 150 Hz signal spread. Afterwards, Zdeněk began operation, and at 1910 we QSO'd (18DB/20DB). At that time, I had a moonnoise of 1.9 dB. The weather was clear, but the relative humidity was 88%. On Saturday 8 June, I started operation in the morning shortly after moonrise on 6 cm in Dubus EME Contest using CW. My first QSO was with SA6BUN, followed by QSOs with JA4BLC, JA1WQF and JA8ERE, SP0VHF for initial #76. I made a total of 25 QSOs on Saturday, but missed IK3COJ. On Sunday I was again QRV shortly after the moonrise and worked HB9Q. I only heard JA8IAD and JA6XED. My final score in the contest was 26x26. I was also only QRV in the EU/Dubus EME Contest on 9 cm on Saturday 29 June. I tried to QSO VK4CDI, but Phil heard me (549) but I heard no signal

from him. Other OKs heard were OK1KIR and OK1KKD. I added initials with SM3BYA #62 and VE6BGT #63; both with excellent signals. I ended up with 17 QSOs. My moonnoise was 1.6 dB. My QTH was 10º C on Saturday morning at the start of my window and warmed to 30º C during the day. My transverter and PA, which are located at the focus of my 10 m dish worked well earlier, but some problems developed at the higher temperatures. I had to remove them from the feed in the afternoon. At 30 º C working at the feed for even for a half an hour was not easy!

OK1KIR: Vlada and Tonna vlada.masek@volny.cz bring us news on their June/beginning of July activity – We were QRV on 3 cm on Sunday 2 June, as WA9FWD announced operation on 3 cm with linear pol instead of his previous CP. Unfortunately, John used an SMA relay between the feed and his TX. It seems highly probably with his TX power of 30 W that his SMA relay was damaged as John became deaf on 3 cm after echo testing. Instead of John, we made QSOs at 1318 SM2CEW (539/569) and 1418 F5VKQ (549/579). In addition, we heard M0EYT (O). On 6 June M0EYT was working on rotating his LP feed and seeking someone to test with on 3 cm. We installed our 3 cm equipment and worked at 1239 worked using QRA64D M0EYT (12DB/10DB) for digital initial {#189}. It was Paul's first 3 cm EME QSO. We continued also with CW and worked him at 1256 (O/O) initial #127. On Fri 7 June OK1DFC was on 24 GHz from the Gajow meeting in Poland under the call SP0VHF. We QSO'd using QRA64D at 1902 SP0VHF (16DB/16DB) for digital initial {#43} and SP DXCC via EME on 24 GHz. Later at 1921 we worked again with CW (O/O) for initial #26. Finally at 1944 we repeated with SP0VHF on random QRA64D (17DB/16DB). Our TNX to Zdenek for his 24 GHz portable activity! On 10/11 June, we tried on 70 cm with XV9LR dxpedition in Vietnam (2 x 15 el yagi and 80 W) without a success. Unfortunately, our Moon window was less than 2 hours due to strong noise QRM at low elevation on our side, and by XV9LR's elevation window of only 70° to 50°, limited by palms at Vladimir's very bad location. In 9 cm part of EU/Dubus EME Contest we made CW QSOs on Saturday 29 June at 0111 OH2DG (569/569), 0124 OK1CA (579/569), 0208 SA6BUN (569/569) and 0231 SP6OPN (569/569). The band was empty afterwards, but we found on the HB9Q logger that VK6DSL in Perth was arranging with HB9Q a 6 cm test with a 28 m dish and 400 W TWTA. So, we swapped equipment from 9 cm to 6 cm and heard VK6EME and VK6UM (59+) in SSB QSOs with HB9Q. We tried to call, but were unsuccessfully. Something went wrong on the VK side and even with CW they were not able to copy us. We did make a SSB QSO at 0319 with HB9Q (56/53). We then returned to 9 cm and continued in the contest. We worked 0436 worked OK1KKD (569/569), 0449 SM3BYA (559/559) #78, 0517 OH1RLY (569/579), 0610 G3LTF (569/579), 0649 G4CCH (579/579), 0758 SM6PGP (549/549), 0844 SP3XBO (549/559), 09:59 WA9FWD (559/559), 1046 K2UYH (569/579), 1119 WA6PY (569/569), 1208 VE6BGT (569/569) and 1224 VE6TA (569/569), 1321 KL6M (579/579) and 1340 W5LUA (569/569); and on Sunday 30 June at 0202 VK4CDI (O/O) - with a continuously weakening signal, 0450 9A5AA (549/559), 0457 ES5PC (569/569), 0624 OZ5G (559/559), 1208 OZ6OL (559/559) and 1306 G4BAO (O/O) for initial #79. Overall in the contest our total was 24x21. On Mon 1 July, we worked on dxpedition VE2TWO in zone 2 (FO60) on 23 cm with JT65C at 0912 VE2TWO (18DB/11DB) for digital initial {#332} and FO field. Later on their signal decreased to (20DB ~ 21DB). When they corrected azimuth by 5 degs their signal improved to (15 DB) and a CW test was successful at 1035 VE2TWO (O/O) {#444} and FO field. After changing from 23 cm to 70 cm, we QSO them with JT65B at 1151 VE2TWO (22DB/20DB) for digital initial {#237}. Many TNX to Peter and Rene for their activation of zone 2 on 23/70 cm. On Thursday 4 July, we participated in another VK6 6 cm test with Perth (OF78) and after a long effort finally made a SSB/CW QSO with VK6DSL (59/54) {#109} and OF field. Dean again was strong (59+) but suffered from RX problems. Elimination of this receiving deficiency remains the biggest challenge to planned 20 July operation in celebration of the 50th anniversary of the Apollo landing on the Moon.

ON0EME: Eddy (ON7UN) ejespers@telenet.be reports beacon PA problems – At the beginning of July we found only 30 W of output power in the telemetry of the beacon. Both Walter and myself are on holiday and returning on 15 July. It is unlikely we will be able to get the beacon back to normal power until we return. [We have not received any news that the beacon is back to normal].

PI9CAM: Jan (PA3FXB) pa3fxb@amsat.org that a **Lunar landing memorial EME SSTV party** will be held on 23 cm on 20 July -- During the 20/21 July weekend PI9CAM will engage in several activities to commemorate the lunar landing of Apollo 11 exactly 50 years ago. To add something to the festivities we would like to try to spark some EME SSTV activity. During the night 20/21 July we will transmit several SSTV images to the Moon on 23 cm with our 25 m dish. These images will all have something to do with the Apollo missions. We encourage all to try and receive them. Over the years, we have seen some surprisingly good results doing SSTV via the Moon. Even *not so big* dishes can receive reasonable quality pictures! We will use the software MMSSTV. (see: https://hamsoft.ca/pages/mmsstv.php). It's easy to use and easy to set up. One thing is important: To get the pictures synchronized, it helps a lot to tick 'auto slant adjustment'. You get there when you are in RX mode and right click in the big white RX box where the images appear. Without auto slant adjustment you often will see skewed images... If you like you can try to transmit images yourself. It's pretty easy; and we will look for your signals. Just have a look at the software and play a bit with it in advance and you will be well prepared for the *Lunar landing memorial EME SSTV party*! BTW we found that the best SSTV sub mode for EME is Martin2. It takes about 1 minute in this mode to transfer one image. During the 20/21 July night we will be on the HB9Q logger to announce our transmissions and to coordinate other SSTV tests.

SM2CEW: Peter sm2cew@telia.com reports on the Orebro meeting and his recent activity -- The highlight of the season was the Orebro EME Meeting in late May arranged by SM4IVE. It was truly excellent, well arranged, and as usual provided the opportunity to meet so many good EME friends from many parts of the world. It also allowed the exchange valuable papers, and of course QSL cards in person. For those who are not subscribed to email reflectors, I would like to inform you that all Orebro presentations are available at www.moonbouncers.org. These include the extensive high quality documentation by HB9BBD on preamp NF and noise head ENR measurements. Dominique was assisted by ON7UN in this outstanding precision work. Recent moonbounce activities here include the 70 cm CW ATP on 19 June during which I worked in the EU-NA leg G0JLO and PA2V. Unfortunately, this event was run parallel with the REF/Dubus 9 cm contest. However, these kinds of crashes are inevitable as we are in both cases looking for optimum moon times and not always facing the same target group. The upcoming 70 cm CW ATPs are listed at www.moonbouncers.org and can also be found in DL7APVs Moon Calendar at http://dl7apv.darc.de/moon2010/moon2010.htm. It probably goes without saying, but 70 cm is a really nice band for EME communications, so let's use it as often and as much as we can. On 11 July, I worked XE2AT, and on 4 July the VE2TWO dxpedition to Zone 2 (FO60). Both QSOs were on 70 cm CW with good signals and really top class operating style. I told Alvaro that he is my second XE on 70 cm as I worked XE1XA > 25 years ago. Alvaro then told me that during our QSO, he was using an amplifier formerly used by XE1XA, which is quite a coincidence. Good to see Max's amplifier still being used on 70 cm CW EME. A milestone for me occurred on 5 July when I worked VE4MA on 3 cm. We had our first EME QSO on 70 cm way back when. Barry and many others have always been a source of inspiration for me to go for microwave EME. Therefore, it's really nice to be able to complete a CW QSO with him in fine style on 3 cm. Both of us were using rather modest size dishes by comparison. Mine is a 2 m prime focus dish. Please remember to send in your REF/Dubus EME contest logs to CT1HZE at DUBUS@t-online.de before the deadline in mid July. My score this year was 67x62 using 2 m, 70 cm, 23 cm and 3 cm for a total of 474,400 points. All using fully random CW!

UA3PTW: Dmitry ua3ptw@inbox.ru was QRV on 432 and 1296 – I added on 70 cm at the end of June using JT65B JG7PEF and in July VE2TWO (FO60) in Zone 2, and on 23 cm in July using JT65C OK8HAK, W3CJK, VE2TWO in Zone 2 and WA6HTP, and using CW SP6JLW, TM1MOON, SP0VHF and SM6PGP. [TNX DK3WG for forwarding this report].

UR5LX: Sergey ur5lx@ukr.net was active in the Dubus 6 cm CW EME Contest – I made initials with SP0VHF, ES5PC, SP6LJW, F1PYR, TM1MOON and 9A5AA, and ended with a score of 17x17. [TNX DK3WG for forwarding this report].

VE3KRP: Fast Eddie's eddie@tbaytel.net June EME report follows -- Not too much activity as of late because I have been busy working outside on domestic projects. However, I was QRV on 1 June on 23 cm and worked F1RJ, K7CA and AA4MD all on JT65C. On 30 June, I QSO'd VE2TWO for a new mixed initial (#*) and Zone 2. (I also worked Peter and Rene on 6 m via FT8, and plan to do some experimenting with MSK144 as well). On 7 July, I added on 1296 using JT65 FR5DN, PE1CHQ, LU8ENU, WX4F (#*) and G4FQI.

VK6EME: Keith (VK6AB/VK6EME) keith@vk6eme.com writes the VK6 EME Group (VK6DSL, VK6EME and VK6UM) have re-activated the 28 m dish in Perth, AU that was used to relay signals from the original Apollo Moon landing mission, to help celebrate its 50th Anniversary -- Our main activity will be on 20 July on 6 cm. We did not allow enough time to get a special callsign, and will be active as VK6EME, VK6DSL and VK6UM. All activities on 20 July will be on SSB. Possibly in the future if the dish becomes available again, we will try other modes. They will have 400 W with tracking accurate to 0.002 deg. (There is a last minute possibility that some SSTV/video may be transmitted, but this in not in the present plans). I suspect many will hear us, but we should not hear you as well because our large dish will be under illuminating the Moon. We will be targeting the Goonhilly Earth station. Other activities will be as and when we can. [They were QRV on 29 June and 4 July – see OK1KIR's report].

W5LUA: Al w5lua@sbcglobal.net writes that his activity the past month was limited – I was able to be during part of the Dubus 6 cm Contest and QSO'd on 8 June SM6CKU, SP0VHF, OK1CA, OZ1LPR, G3LTF, ES5PC, and VE6TA for a score of 6x6. I also worked SP0VHF on 24048 with good signals. On 29 June during the 3400 Dubus Contest, I worked K2UYH, SP6OPN, WA6PY, VE6TA, OH2DG, OK1KKD, G4CCH, OK1KIR, KL6M and G4BAO for a total of 10x8. On 1 July, I worked VE2TWO on 1296 in Zone 2. I also worked VE2TWO on 432 for my first Zone 2 then followed by XE1AT. On 7 July still on 432, I worked EI8JK for my first Ireland and I also G3LGR who was running 250 W to a single 14 el DG7YBN yagi. Mike is probably the smallest station that I have worked with my 5 m dish. I use a dual polarity patch feed and it sure came in handy on 7 July as the Faraday fading was wild.

W8MQW: Chuck maccluer13@gmail.com is retuning to EME after a long absence --
I have a 2.4 m C-band dish on 1296 using a 25-watt DEM transverter. I started with a dipole and dog dish reflector that I call a *PurEMEa* choke feed. It was a *dog* and only gave about 5 dB sunnoise. I am now working to improve my system. I have also found the HB9Q Logger and looking for stations for test/sked.

WA6PY: Paul pchominski@maxlinear.com reports on his activity in the 3, 6 and 9 cm Dubus EME Contests – During the 3 cm contest weekend of 11/12 May, I QSO'd DL0EF, ES5PC, F1PYR, IW2FZR, JA4BLC, OH2DG, OK1CA, OZ1LPR, RA3EME, RB5LX, SA6BUN,

SM2CEW, SM6CKU and SP6JLW for a total of 14x14. Heard were JA8ERE, F5JWF, K2UYH and HB9BBD – called many times but got only QRZs. During the first day, I experienced heavy rain and weaker than normal echoes. On 8/9 June, I was on for the 6 cm contest. I QSO'd DF3RU, ES5PC, G3LTF, HB9Q, JA1WQF, JA4BLC, JA6XED, K2UYH, KL6M, LX1DB, OH1LRY, OK1CA, OZ1LPR, PA0BAT, SA6BUN, SM6CKU, SM6PGP, SP6OPN, TM1MOON, UA3PTW, VE6TA and WA9FWD for a total of 22x21. During 29/30 June, I was active in the 9 cm contest and QSO'd 9A5AA, ES5PC, G3LTF, G4BAO, G4CCH, K2UYH, KL6M, OH1LRY, OH2DG, OK1CA, OK1KIR, OK1KK, SA6BUN, SM3BYA, SM6PGP, SP3XBO, SP6OPN, VE6BGT, VE6TA, W5LUA and WA9FWD for a total of 21x17.

K2UYH: Al alkatz@tcnj.edu – I was away the week before the 6 cm Dubus Contest and just made it home in time for the start of the contest. I QSO'd using CW on 8 June at 0137 KL6M (559/559), 0147 VE6TA (559/559), 0154 JA6ERE (559/-) lost, 0236 WA6PY (559/559), start of next moonpass 1827 OH2DG (579/559), 1834 SA6BUN (559/559), 1843 SP6JLW (559/559), 1852 OK1CA (559/559), 1856 SM6CKU (559/559), 1912 OH1LPY (559/559), 1918 PA0BAT (559/559), 1928 TM1MOON (559/559), 1955 DF3RU (559/559) and 2010 UA3PTW (559/559), and on 9 June at 0300 JA6IAD (559/559) – lost, 0326 JA4BLC (559/559) and 0342 JA6XED (559/O) for total of 15x15. I was unable to be QRV for the final moonpass. I was on again two weeks later for the 9 cm Dubus contest and worked on 29 June at 1040 OH2DG (579/589), 1046 OK1KIR (579/569), 1051 OK1CA (579/579), 1100 OH1LRY (569/579), 1112 SM6HKA (569/-) lost – not sure of the call as I found CW copy particularly frustrating with many QRZs during the contest, 1124 SP6OPN (569/589), 1129 G4CCH (579/579), 1134 SA6BUN (569/569), 1143 WA9FWD (569/579), 1155 SM3BYA? (559/?) lost, 1210 SP3XBO (559/559), 1218 W5LUA (569/569), 1303 WA6PY (569/579), 1331 KL6M (569/579), 1339 VE6BGT (569/569), 1346 OK1KKD (559/579), 1358 LX1DB (569/579), 1410 SM6PGP (449/549) and 1420 VE6TA (O/O), and on 30 June at 1122 ES5PC (579/579), 1154 G3LTF (579/579), 1200 SM3BYA (569/569), 1229 9A5AA (559/579) and 1250 G4BAO (O/559) for a total of 22x18. I again had to QRT early because of family activities. I was QRV on 1 July to work on 432 at 1355 VE2TWO (24DB/12DB) using JT65B for mixed initial #989* and Zone 2, and on 1296 at 1707 VE2TWO (17DB/18DB) using JT65C for mixed initial #610* and Zone 2; and on 7 July on 1296 CW at 1913 VE2TWO (O/O) for initial #411. My overall 2019 Dubus score (70, 23, 13, 6 and 3 cm) is = 1,581,110 points. This is about 20% lower than last year. I plan to be QRV for the MWAW on 13 and 9 cm at the end of July.

OK1TEH: Matej ok1teh@seznam.cz -- I'm currently finishing up a new 2.4 m mesh dish that should be in operation this July. This past month I worked KB7Q from WY to finish up 2 m WAS. In fact, I should be second station outside the USA to complete WAS with a single yagi. It took me just 15 years, hi!

NET/REFLECTOR NEWS: **BV3CE** completed WAC on 1296 by QSOing PY2BS. **G4DDK** had problems with his Spid Ras rotator. It turned out that colony of ants had infiltrated his terminal box. All is back in operation now. [G3LTF notes that K2UYH had squirrels that chewed through his rotator cables, but this is probably the first case of ants doing it]!

FOR SALE: **W6DSR** has a 5 m dish he is in the process of disassembling and would like to find a new home for. It originally was a Cassegrainian feed for C-band but was converted to a prime focus feed. It is in the San Francisco Bay area. If interested contact Doug at doug@dougronald.com. **9A5AA** has for sale an Anritsu S331A SiteMaster Cable & Antenna Analyzer 25 - 3300 MHz (soft case, open/short element, protection load, new NiMh bat); and an Agilent/HP 8753A Network Analyzer (300 kHz - 3 GHz). If interested in either contact Dragan at dragan9a5aa@gmail.com. **PA3DZL** still had a few ~ 8 W 10 GHz SSPAs available for 275 Euro. Contact Jac at PA3DZL@planet.nl if interested.

TK4EME Remembered: This dxpedition to Corsica by the F6KSX group ((F6CIS, F6HKA and F1EHN) occurred 30 years ago (1989) when CW was king! They used 16 x 21 el F9FT yagis, K2RIW 800 W PA and 0.3 dB NF LNA. They made 76 QSOs and 63 initials. [TNX to JJ (F1EHN) for remembering].

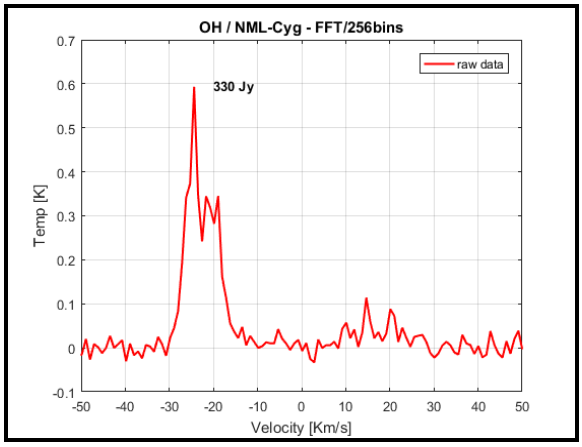
TK4EME in 1998 in Corsica with 16 x 21 el F9FT yagis

TECH INFO - Solutions for EME Transceiver Stability Problems: **K6JEY** writes -- Recently SDR Kits has produced an amazing product. They have a very small GPS/oscillator box that runs off of a cell phone power supply or battery that has an internal GPS/GLONAS receiver that disciplines a wide range Digital Synthesizer. You can lock the oscillator to any frequency between 400 Hz and 800 MHz. You do so via software and the unit retains the setting even with power off. There is an extra key benefit - when the antenna is removed the unit goes into hold over mode, thus retaining the unit's stability. I have found the best results are obtained by letting the GPS average for a while before unplugging the antenna. The unit is easily interfaced with any oscillator. At $100 it is an attractive deal. This unit, when interfaced with a radio's TCXO stage, could solve the

stability problems encountered with many radio's usage on digital modes. The IC7900 and FT847 quickly come to mind. The unit could also replace oscillators in most of our microwave radios and provide GPS stability. Phase noise is -144db at 1KHz. [This is part of Doug's 2019 MUD Presentation]. **KA1GT** adds that these units seem to be the same as those from Leo Bodner (www.leobodner.com), which have been around for a while. I've been using both the larger and smaller units for a year or two and they work well. They lock on to the GPS signal quickly and are (as you would expect) very stable. My only quibble with them is that the control program source code is not available, so you are stuck with their control software. It works fine, so no problem setting them up. If you wanted active frequency control via a custom external program, then this could be an issue. They are good units and the support (from Leo Bonder) was excellent when I had a problem.

RADIO ASTRONOMY CORNER: F1EHN reports on his first test on 18 cm (1612 MHz) of OH Maser detection with a 3 m dish -- This observation of NML- Cyg during 3 hours (about 2.5 hours of integration time). The 0.6K of the peak of this OH Maser corresponds to approximately 330 Jy (constant RT is 1.8mK/Jy). The receiving chain is optimized with a 18 cm RF filter and image reject mixer, the same as used for my 21 cm receiver. I used 2 signals for reference; one on the Sun and a second on "cold sky" over the South Galactic Pole. The basic parameters of my system @ 18 cm are my 3 m dish with f/D of 0.43, VE4MA feed (my 21 cm feed only tuned by adjusting the probe's location and length with the help of W1GHZ and F6DZK); my LNA with a 0.4 dB NF (TQP 9037 board evaluation – my 21 cm LNA is not enough good at 18 cm). The receiving chain is home made with an RF filter and IR mixer. The local oscillator is synchronized at 10 MHz with a GPSDO. A SDR ICS554 and analog chain (F1EHN design) is used – 1.25 MHz after decimation by 64 with Matlab processing similar to that used at 21 cm (for M31). (My thank you to Wolfgang from Astropeiler who motived me to try 18 cm with the same antenna as 21 cm (and few mechanical changes), and for the complete doc of the Astropeiler on 18 cm – see https://astropeiler.de/sites/default/files/Astropeiler_Story_5.pdf). See graph in next column.

► Logs are due for the Dubus Contest now. Get them in ASAP! Send to **DUBUS@t-online.de**.



FINAL: We are sad to report that well known VHFer and EMEer W0RRY has become a silent key. In recent years Charlie was more active on 144, but in the past was also QRV on 432 EME. [He was my 432 initial #144].

► 13 and 9 cm operation in Brazil could be lost in the near future. PY2BS has reported that the Brazilian Telecom Authority (Anatel) has recently designated 2.3 and 3.4 GHz for 5G use. In previous public hearings, Anatel proposed to limit HAM use on these bands to 100 W EIRP, while the industrial operator, asked for a complete ban. Bruce has requested the final regulations included a provision for using full legal power for non-terrestrial operation; but Bruce observers even if this provision is accepted, it will be difficult if not impossible to receive weak EME signals in presence of the strong interference from 5G local QRM, except possibly in remote areas. He does not know when it will happen, but it seems pretty certain in the near future. So, if you don't yet have PY in your log on 13 and/or 9 cm, it makes sense to try to do it as soon as you can. [See following MWAW announcement].

► At the Swedish EME meeting we had a short discussion on the subject of **MWAWs for 2019**. It looks highly likely that some of the Scandinavian countries (SM/OZ) and PY is South America are likely to lose access to 13 and 9 cm this year. As a consequence, it was agreed that we should use the remaining "good" weekends this summer to maximize the chance to work them. Sadly, it may be the last chance. It was decided is to use the weekend of 27/28 July with 13 cm on 27 July 27 and 9 cm on 28 July. If running "two band" MWAW works out OK, then we have the opportunity to use 24/25 Aug for 3 and 6 cm. For newcomers, a MWAW is when we attempt to get all those with capability on a specific microwave band to come on and make QSOs, run tests for those needing signals, test new feeds, preamps etc. No pressure, no scoring, use the reflector, use any mode, just activate the band.

► The Rules of ARI EME Trophy 20019 Contest are at http://www.eme2008.org/ari-eme/contest.html. Reminder logs are overdue!

► TNX for the reports and news. We hope to CU off the Moon in July/Aug. 73, Al – K2UYH and Matej – OK1TEH.