432 AND ABOVE EME NEWS
JANUARY/FEBUARY 2011 VOL 40 #1

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CONDITIONS: Reports are way down this month. This should not be a surprise after all the EME contest activity, but there was still some very significant EME taking place. Congrats to the OK1KIR Club for the #1 WAC on 6 cm. This is the second microwave (MW) band (not counting 1296) that WAC has been achieved on. The first MW band WAC was on 13 cm by LX1DB in 2008. Congrats also to F2TU who completed the second 6 cm WAC and to PY2BS for making the WACs possible. FG4KH put on an excellent 70 cm EME dxpedition with 35 QSOs, and several on CW – see their report for more details. SM4IVE did not have happy holiday, his big dish was damaged by severe winds, but repairs have already been made and we should be hearing Lars' signal again. There is also plenty of events coming up. The next 70 cm CW ATP is on 29 Jan from 1000-1200 and 1800-2000. And on the following weekend are the SSB EME Contests – see below. The Feb 70 cm ATP is on 26 Feb from 0900-1100 and 1700 to 1900. It is closely followed on ¾ March by the DUBUS 70 cm and 9 cm contests. There is also a chance of 432 operation starting around 23 March from J52EME, Guinea Bissau, as part of an HF and 2 m EME dxpedition.

23/70 CM EME SSB CONTESTS RULES: These events are intended to be fun. You do not need to transmit on SSB to participate. CW to SSB and vice verse exchanges are encouraged and count for points. (Only one QSO between stations is allowed, i.e., you cannot work a station SSB to SSB and SSB to CW for extra points). The 70 cm contest runs on Saturday 4 Feb from 0000 to 2400, and the 23 cm contest is on Sunday 5 Feb from 0000 and to 2400. These are two separate contests. Everyone one should have one Moon pass with operation moving from EU to NA to Asia/VK, and back to EU and NA during each contest. Scoring is contact points x number of two letter Grid Sectors (IO, JM, FN, EM ...) worked. SSB to SSB contacts count as 2 points. SSB to CW (or CW to SSB) count as 1 point. The exchange is your Sector (IO, JM, etc.). Only the 2 sector letters need to be sent and copied by EME. The exchange of signal reports and/or 4 character grids is optional and not required. Operation may be by single or multiple operators from one location. No distinction for scoring will be made. Assisted operation is not encouraged. All skeds/operational announcements should be made prior to the start of the contest. Logs should be sent to the 432 and Up EME NL by email to a.katz(x)ieee.org ASAP after the end of the contests. (All logs for contest awards should have been received within the month following the contest). The top scoring station on each band will receive an attractively framed certificate that will be presented at the next International EME Conference (UK 2012).

F2TU: Philippe f2tu.philippe(x)orange.fr sends news his recent 6 cm activity – I QSO'd on 5760 on 7 Jan PY1KK (559/559) and (44/54) on SSB. This gave me initial #47, DXCC 26 and South America to complete WAC on 5.7 GHz. Also worked on 7 Jan were ES5PC (559/559) and SQ6OPG (O/O), 11 Jan F1PYR (O/O) #48.

FG4KH: Phil (F1DUZ) duz(x)orange.fr, F6APE and FG5FI produced an excellent 432 EME dxpedition from Guadeloupe Island (FK96hf). Their activity started on 29 Dec with 3 QSOs, UA3PTW **(**16DB/O), W7IUV **(**25DB/O) and DK3WG (26DB/O), but a power supply failure stopped activity early. The next day on 30 Dec another 10 QSOs were added with OK1DFC **(**20DB/O), PA3CSG (24DB/O), OZ4MM **(**24DB/O), LZ1DX (22DB/O), ES6RQ (25DB/O)**,** OK1KIR (27DB/O), RW3WR (26DB/O), UT6UG (27DB/O), PA3DZL (22DB/O) and DL7APV (26DB/O). On 31 Dec they made only 6 QSO today, but 2 were on CW. QSO'd were SM4IVE (O/O) on CW, DL9KR (O/O) on CW, HB9Q (15DB/O), K2UYH (19DB/O), DF3RU (22DB/O) and W7MEM (28DB/O). Worked on 1 Jan were I1NDP **(**21DB/O)**,** DL5FN (27DB/O), OK1DFC (23EB/O) a second time and W7AMI (23DB/O), on 4 Jan WA4NJP (21DB/O), K3MF (28DB/O) and W7IUV (28DB/O) second time, on 5 Jan K5GW (O/O) on CW, on 6 Jan OK1DFC (18DB/O) for a third time, on 7 Jan DL7APV (19DB/O) second QSO, on 8 Jan F6DRO **(**27DB/O), UR5LX (29DB/O), K6MYC (24DB/O), ES5PC (22DB/O) and PA0PLY (26DB/O), on 9 Jan K7XQ (26DB/O), on 11 Jan OZ4MM (O/O) on CW, G4FUF **(**28DB/O), K5GW (16DB/O) and VK4EME (28DB/O), and on 12 Jan DL8GP (28DB/O) for a total of 35 QSOs! The station was the same as previously reported, 2 x 17 el DK7ZB yagis with a 300 W SSPA and SP7000 LNA. QSLs must be send to Philippe Levron, F1DUZ, Malvaux 49570 Montjean-sur-Loire, France. Please include an SAE and a valid IRC or $US2.

FG4KH (F1DUZ and F6APE) with 2 x 17 el yagi array

K0DSP: Doug k0dsp(x)arrl.net is a new station on 70 cm EME (EN10) from NE. He is running 2 x 9 wl yagis and a 100 W TE SSPA with a DEM preamp. He has been mainly active on JT65B, but should workable by bigger stations on CW. He also has some gear for 1296 and may become active on this band in the future.

K5QE: Marshall k5qe(x)sabinenet.com (EM31cj) was active during the ARRL's Jan VHF contest, 21/22 Jan, on 432 looking for QSOs. He was using 16 x 28 el M2 yagis all H-pol with 1000 W and a tower mounted preamp. He called CQ on 432.070 second sequence using JT65B, but was also listening for CW.

OK1KIR: Tonda and Vlada vladimir.masek(x)volny.cz report on their early Jan and end of year activity – The big news is the completion of the first 6 cm WAC. On 5760, on 5 Jan just after PY1KK moonrise, they succeeded in working Bruce at 1938 for his first 6 cm QSO (O/O) and their initial #53, 1st PY–OK 6 cm QSO, and 6 cm WAC #1. Later on at 2013 they repeated the QSO at higher Moon elevation (559/559), and worked at 2028 OH2DG (559/559). On 432, on 30 Dec, they had terrible noise problems mainly from the Prague capital area, but it dropped down enough for them to finally work at 1744 FG4KH (28DB/27DB) on JT for digital initial {#} and new DXCC, and on 7 Jan add at 1538 UN/DL9LBH (27DB/O) {#} and another DXCC. On 1296, they QSO'd with JT65C, on 7 Jan at 1823 YO2LEL (12DB/12DB), 1829 IK3GHY (15DB/9DDB), 1847 PA3FXB (10DB/9DB), 1855 YO2BCT (17DB/O), 1903 JA6AHB (10DB/5DB) and at 1907 OH3KLJ (16DB/O) for digital initial {#106}. On 3400, on 10 Dec, they heard DL7YC (549) in sked, but Manfred heard nil, and on 11 Dec at 0103 QSO'd easily WA9FWD (549/549) for initial #37 and the state of WI.

PA0PLY: Jan pa0ply(x)pa0ply.nl reports on his recent Moon operation -- During the last month, I did not make many QSOs, but spend time to solve problems with my EME station. For 3 cm, I'm almost fully in operation. I have the TWTA completed, but I still need to test it in the dish. During the ARRL Sept contest weekend, I copied DL0EF, F2TU and UR7D, all on CW. In the meanwhile, I modified a commercial LNB for 10 GHz. It should give me 0.6 dB NF. I am also working on a total power detector system, which I intend to use for Moon noise tracking. It is based on a AD8313 RF detector device, which is

quite interesting because its bandwidth is up to 2.4 GHz. I will send more information after finalizing my testing. My 70 cm EME station is operational, but I am having a metering problem in my GS35B PA. After a long search, I found that a protection diode between the -B and ground terminal should not have been there. Although I mostly worked JT in the contest, I did QSO SM4IVE and OH2DG on CW. I damaged my second stage preamplifier for unknown reasons during my CW operation. To solve, I added a 70 cm isolator between my TS2000X and the 2nd stage preamp. I had a nice QSO with OK1TEH. He is really doing very well with only one yagi! It took a long time before we completed the QSO, but it was worth doing it. The signal was (28DB)!

PY1KK: Bruce (PY2BS) bruce(x)zirok.com reports on the first 6 cm activity South America -- I am finally on 6 cm, my 5th EME band - 432 and up. The DB6NT transverter and SSPA were mounted at the feed (a scaled version of RA3AQ "flush" design), and a G3RUH 10 MHz GPS reference and 12 V PS were located near the dish base. Power at feeder was about 50~60 W. The tracking was with an OE5JFL antenna controller. The position feedback from my encoders were not accurate enough, so, at the beginning of each session I had to find the Moon by my own echoes, and recalibrate the controller. After this, the tracking worked for a long time without needing any readjustment. Contrary to my concern, the 4 m mesh dish behaved surprisingly well at 5.7 GHz. QSOed were OK1KIR (O/O), OH2DG (549/549), OK1KIR (559/559), SP6GWN (O/O), PA7JB (O/O), G3LTF (O/O), W5LUA (569/559), LX1DB (569/569) and SSB (55/56), F2TU (559/559) and SSB (54/44), PA0BAT (549/549), ES5PC(O/O), S59DCD (539/529), G4NNS (529/529) and F1PYR(O/O). I was unable to complete with WA6PY and F2CT. Many thanks for all the nice signals, especially from Willi for a UFB voice QSO. I expect to be back on 6 cm, as well as to 9 cm, later this year, possibly on the DUBUS Microwave Contest weekends.

PK1KK's 4 m dish & feed used for 1st SA 6 cm EME QSOs

SM4IVE: Lars sm4ive(x)telia.com did not have a happy holiday – On 26 Dec server winds (24 m/sec) caused serious damage to my dish. Two ribs were damaged. I decided the best solution would be to reinforce the ribs. So I contacted a professional welder. We had good weather on 14 Jan, still -2 degs and windy so it was cold, but we were able to make the repairs to the dish structure.

SM4IVE dish repairs

TI2AEB: Armando aebonill(x)ice.co.cr reports that his 70 cm QRM problems have improved a bit and he is again making QSOs. He also reports that his CW signal was copied by W7MEM. Armando's 4 m dish is now mounted and he has just about everything needed to be QRV except feed and is looking for one.

VE4MA/W7: Barry ve4ma(x)shaw.ca is in AZ for the winter and enjoying the warmer WX. HE is working on 1a 296 SSPA for EME operation from there. He has most of a 10' dish, but is also contemplating the construction of a large offset dish. He is planning to use a Flex 1500.

WA9FWD: John Jstefl(x)wi.rr.com is now QRV on 9 cm – I am using my 3 m dish with a WD5AGO feed and preamp. I worked W5LUA, K5GW, and VE6TA on 3400 this past month. I seem to be having stability problems with my LNA. K5GW told me that he has seen the same. I am doing more tests to determine under what conditions the preamp takes off. That will probably determine how I handle my switching. I have noticed that my old DEM single stage preamps hear better than my two stage WD5AGO preamp. I have found thru testing that I need three stages of total gain to get the most Sun noise. [I have not seen a stability problem with my 9 cm AGO preamp]. I now have my US Digital absolute encoders in place and working now, so I can run anytime.

WA0ARM: Bill Bill.Glynn(x)westarenergy.com in Topeka, KS and using 8 x 15 el W0EYE yagis and 150 W is looking for 70 cm EME skeds. He worked in DL7APV and W7MEM for an initial (#). Bill CWNR K7OX and ES6RQ, but will try again.

K2UYH: I a.katz(x)ieee.org was not very active this past month because of business travel and problems with my TX feedline. On 7 Jan while trying to QSO KG7HF on 70 cm CW, the 7/8" Heliax feedline that drags along the ground as my dish rotates, broke at a new spot. This feedline has been in use for almost 40 years. I have previously spliced a bad spot and have had problems on occasion with the splice. This problem was a few feet away from the splice point. I now have temporary fix in place, but need to make some major changes to properly fix this problem. I worked on 31 on 432 at 1918 FG4KH (22DB/19DB) JT65B for mixed initial #830* and DXCC 109* - TNX Philippe and team, 2024 OK1DFC (7DB/6DB) JT65B, 2034 KD3UY (24DB/O) JT65B #831* and 2118 K0DSP (18DB/23DB) #832*, and on 7 Jan on 432 at 0208 UR5LX (18DB/20DB) JT65B - was my 1st Ukraine in 2003 and 0512 KG7HF (20DB/20DB) JT65B #833* - lost feedline while trying to work Paul on CW. I hope to be active in the upcoming 70 cm ATP, and the SSB contests on the following weekend. I also have fallen behind in my QSLs. If I owe you a QSL, please be patient. I hope to have them all out in a few weeks.

NETNEWS: **W5BL** in northeast TX (EM23) is building 23 cm EME system. Doug is using a TVRO dish with a septum feed and 300 W. **WB7QBS** reports a partial with W4EME on 432. Glenn is available for skeds. **VE3KRP** was active on 23 cm in early Jan, but found little activity. **WB2BYP** reports that he and W2CNS are planning to attend the EME2012 Conference. John was active FN13ib) on 23 cm with his 8.4 m dish and 175 W. **N4PZ** is enjoying the summer in Argentina. Just before he left he did work OZ6OL on 23 cm, but blew another preamp. He will be back and running the 20 m net again in Feb. [WB2BJP has been running the net in his absence – TNX John.] **LX1DB** has been active on 6 cm and worked S59CDD and PY1KK for initials. **VE2XX** is now receiving on 70 cm EME and working on a sequencer. **W9DCO** in Chicago has a 10' dish and 4 x yagis and 300 W for 70 cm. **WB9FOL** in IN is interested in trying some on the horizon 70 cm EME with a 15 el yagi and no LNA. **SM7SJR**, sm7sjr(x)gmail.com, reports plans to be QRV on 23 cm in a few months.

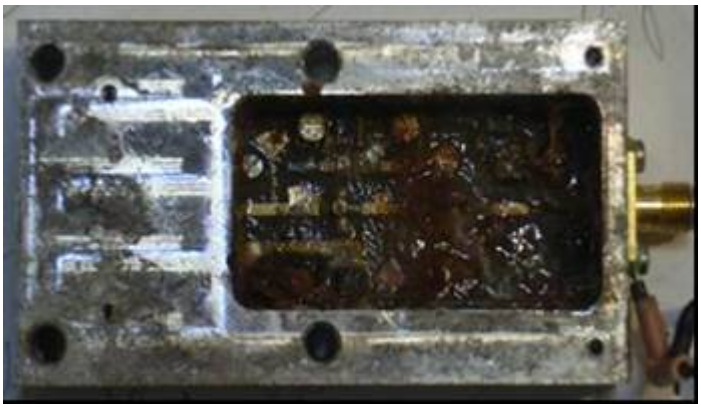
FOR SALE: **TI2AEB** is desperately looking for a septum feed for 1296 EME station. He is basically ready to go otherwise. Contact Armando at aebonill(x)ice.co.cr. **WB7QBS** is looking for QRO PA with PS for 70 cm. Contact Glenn at glennwb7qbs(x)hotmail.com. **VK3UM** has posted a new release of his Noise Sources Planner. This latest software provides the ability to select the start and end dates when you wish to make observations. The Noise Source Planner also provides a real time display of sources, which include Aquarius and Leo (quiet sources) as well as Cassiopeia-A, Cygnus-A, Taurus-A, Virgo-A, Sagittarius-A with both the Moon and the Sun added for good measure! The download is www.vk3um.com. [TNX Doug for you efforts].

TECHNICAL - Problems with Leaky Plumbing by G4NNS: I had always bragged about my 10GHz system being an "all weather" one and have left it out on the dish in all weathers, with power on so that the small amount of heat will prevent condensation in the equipment pod at the rear of the dish. Recently I had to park the dish with it pointing at the horizon while the elevation gear box was worked on. A bearing had started to fail and the coupling from the motor was of poor quality making the elevation motion very jerky. On completion of this work I was horrified to find that the waveguide switch and pre-amp had

filled with water.

G4NNS's waveguide relay

I soon decided that the waveguide switch was a write off a as it was thoroughly seized up. Fortunately a replacement was available. I thought it worth having a try at repairing the preamp and as it was Aug, I thought it would not be possible to order a replacement as Kuhne Electronic was closed.



Un-refurbished LNA

After giving the pre-amp a good wash and dry I took it apart removing the PCB for more cleaning using de ionised water, followed by thorough drying and more cleaning using solvent. I then first checked that the bias supply was working, which after replacing a couple of capacitors, it was. The input regulator had failed as had the protection Zenar diodes. These were replaced. Fortunately the bias adjustment pots seemed to be OK. Next the GaAs FETs were replaced and their bias set so that the drain voltage was about 2 V. Meanwhile the Aluminium housing had been thoroughly cleaned including immersion in caustic soda and then polished as well as I could using a multi tool with wire brush etc. The PCB was replaced into the housing using conducting paint (as used for repairing heated windscreens) to ensure a good contact with the housing. A new socket and feed through capacitor were fitted.

LNA after cleaning and re-work

As I don't have a NF meter (PANFI), the next stage was to re-assemble the pre-amp, new WG switch and transverter and test it on the dish. But first I checked the CS/G noise (ground y factor). It was about 3 dB, so I thought it worth checking for Sun noise using the dish. Once back on the dish, the first thing I noticed was that there was hardly any change in noise from ground to sky. After a while, I realized that having last used the system on 5.7 GHz, I had put the cassegrain sub reflector, used on 10 and 24 GHz, back in the wrong place. After correcting this, I was still seeing only about 11.5 dB of Sun noise and 1 dB of ground noise. The VK3UM EME calc program suggested a loss of about 1.5 dB between the transverter and the feed horn. So I dismantled the feed system to clean it and remove any corrosion. This did not appear to be too bad, but there was some corrosion on the flange faces.

Feed system

Meanwhile, with the transverter and pre-amp back in the shack I borrowed a PANFI and adjusted the bias to the two GaAs FETs for best NF. I had removed the tuning tab on the input line to clean underneath it, and had replaced it in its original position as accurately as I could. The measurement was made after the new waveguide switch, so I was particularly pleased to achieve a figure of 0.8 dB. On replacing the gear onto the dish, I was even more pleased to find I had 17.5 dB of Sun noise, 2.6dB of Moon noise and good echoes. So why the original performance? I think most of the loss in the feed was due to corroded flanges; particularly the last joint, which is of dissimilar metals – Brass to Aluminium.

TECHNICAL INFO ON TV CAMERAS BY N4PZ: I have found an inexpensive TV camera that is tolerate to the Sun without damage and yet sees well at night as well as during the day. It is great for tracking the Moon and you can point it directly at the Sun and make a circle on the TV screen so you know just where the main lobe of your antenna is located. Make a circle on the TV screen and put the Moon in that circle and guaranteed you are right on the Moon. These cameras can be found at www.mpja.com, phone +1-800-652-6733. Several types are available, but some will not see well at night or are blind during the day. Avoid all those that are illuminated with IR LED's. They are a washout during the daytime and don't see well at night. Avoid the color ones. The picture looks pretty, but night sensitivity is very poor. The one to buy is MPJA part #14248-ST 3.6 mm Clr. Camera/audio for $US49.95. There are mateching cables from 25 feet to 150 feet for $US6.95 to $US20.95. Part numbet for the 150 foot one is 15463-WI at $20.95. I burned up hundreds of dollars worth of cameras to learn the above. Take my advice seriously. You also need to have a relay at the camera, which powers the relay and camera and totally grounds the camera back to itself when it is shut off or nearby lightening strikes will reach the camera via the cables and destroy the camera – guaranteed!

FINAL: The distribution date of the Newsletter (NL) distribution have has been moving later in the month for the last few months, I have thus decided to call this the Jan/Feb NL, to get it more into alignment. You may also note that this is the 40th volume. It seems hard to believe that this NL has been in continuous production since Sept 1971!

The 2012 DUBUS Contest dates are now released. The dates are 3/4 March for the 70 cm and 9 cm contests, 31 March/1 April for the 3 cm and up contest (also the 2 m weekend), 28/29 April for the 13 cm competition, 26/27 May for the 23 cm contest and 23/24 June for the 6 cm weekend.

The latest updated version (Jan 2012) of PA0PLY's EME Database is now available on his website http://www.pa0ply.nl/directory.htm. Please inform Jan of any additions or changes.

We also have this month the 2012 EME Calendar by DL7APV with all the contest and activity times. There are no specific EME activity weekends

indicated as in the past because things are now just too spread out with too many different events..

The Booking site for the 15th International EME conference in Cambridge is now open. Go to www.eme2012.com. To achieve best value the organizers are offering a range of accommodation packages of from 2 to 4 nights. These all include day time refreshments and lunch for the delegate and Friday dinner. Additional options include a pre-conference tour, partners program and Gala Dinner. Go to the prices page to decide, which package suits you then register and book.

EME2012 room location

EME2012 typical room

All rooms have private bath, shower and toilet facilities and wired high speed internet access. (Bring your own Ethernet cable). Use of the Gym is free and there is free wireless high speed internet access in public areas. If you plan to bring your partner please book early as the number of twin bedded rooms is limited. I look forward to seeing you in Cambridge.

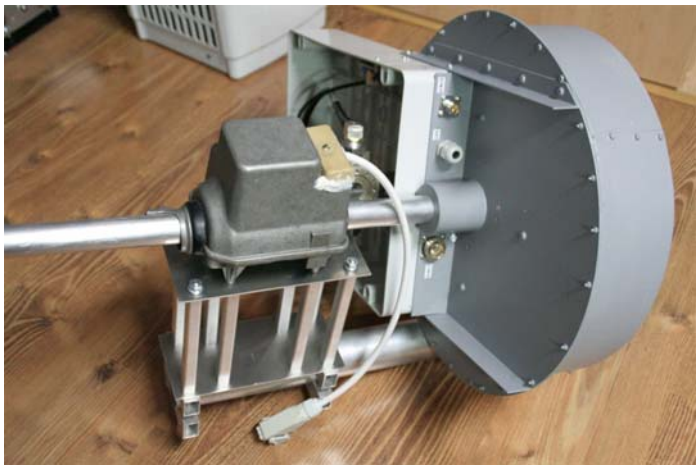
I have not see so much interest in an EME Conference in many years. I am sure this one will be a *record breaker* and definitely one you do not want to miss. Get you reservations in early!

The NL is still in need of a permanent NETNOTES editor to provide summary material from the 20 m net and various Internet EME Reflectors for the NETNOTES section. W6SZ has temporarily agreed to do this task [TNX]. Can anyone help?

OK1DFC had problems with the previous rotor he used to change the polarization angle of his 432 feed. He has build a new system that is working very well. Details can be found at http://www.ok1dfc.com/EME/technic/432feed/432feed.htm. See also picture at the end of this NL.

Because the reports were down this month, we have filled in with more technical material. Now we not need more for next month, and keep the reports coming too. We will be listening for you during the EME SSB Contests on 4/5 Feb. 432 is on Saturday and 1296 Sunday, and during the 70 cm CW ATP. Please try to be on for all the activity. 73, Al – K2UYH

PK1KK's 6 cm feed package used for 1st SA 6 cm WAC



OK1DFC's 432 polarization rotation system

N2UO's 20' dish at sunrise

Lunar Weekend Calendar for 2012 (by DL7APV)

2400 Sat/ 0000 Sun	Dec	Loss (dB)	Sun offset	Temp 432	libra-tion	Comments & 432 ATP
Jan 0/1	+6	-1,78	+85	25	-	Apogee, Day PM
Jan 7/8	+21	-1,32	+165	45	-	Night
Jan 14/15	-8	-0,42	-110	30	-	Night near perigee
Jan 21/22	-20	-0,59	+15	80	-	ARRL VHF T-contest
Jan 28/29*	+9	-1,78	+64	25	-	Sun 10-12 & 18-20
Feb 4/5	+20	-1,18	+146	40	+	ssb contest sat 432/sun 1296
Feb 11/12	-11	-0,23	-127	30	-	Perigee, night
Feb 18/19	-18	-0,87	-33	45	+	Moon in south, day
Feb 25/26*	+11	-1,83	+45	25	-	Sun 9-11 & 17-19
Mar 3/4	+18	-1,14	+126	30	+	Eu VHF/UHF T-contest Dub-contest 432&3400MHz
Mar 10/11	-14	0,02	-145	30	-	Moon in south, perigee
Mar 17/18	-15	-1,07	-50	35	+	Moon in south
Mar 24/25*	+14	-1,90	+25	30	-	Sun 7:30-9:30 & 15:30-17:30
Apr 0/1	+16	-1,17	+107	25	+	DUBUS-contest 144MHz&10GHz+up
Apr 7/8	-17	+0,22	-164	35	-	Moon in south, perigee
Apr 14/15	-13	-1,15	-68	35	+	Moon in south
Apr 21/22*	+16	-1,95	+6	35	-	Sun 6-8 & 14-16 ARI Meeting
Apr 28/29	+14	-1,21	+88	20	+	DUBUS contest 2.3 GHz CW/SSB
May 5/6	-19	+0,3	+177	35	-	Eu VHF/UHF T-contest
May 12/13	-9	-1,14	-87	30	+	SM4IVE SM-EME meeting Day AM
May 19/20*	+18	-1,96	-12	35	-	Sun 5-7 & 13-15 Dayton
May 26/27	+11	-1,20	+70	15	+	ARI Contest "New Modes" DUBUS contest 1.2GHz
June 2/3	-20	+0,21	+158	40	-	EU 23&up Tropo Moon in south
June 9/10	-6	-1,09	-106	25	+	ARRL VHF T-contest Night
June 16/17*	+19	-1,91	-30	35	-	Sun 12-14 US Apogee
June 23/24*	+8	-1,1	+52	20	+	Sun 11-13 AS Ham Radio (DL) DUBUS 5.7 GHz
July 0/1	-22	+0,02	+140	40	-	Moon in south, perigee
July 7/8	-3	-1,08	-126	25	+	Eu VHF/UHF T-contest Day AM
July 14/15*	+20	-1,85	-49	35	-	Sun 12-14 US Apogee, Day AM
July 21/22*	+4	-0,91	+34	20	+	Sun 9:30-11:30 AS Day PM,
July 28/29	-22	-0,20	+123	70	-	Moon in south, perigee
Aug 4/5	-1	-1,14	-146	25	+	ARRL UHF T-Contest Night
Aug 11/12	+21	-1,79	-68	40	-	Apogee, Day PM
Aug 18/19	+1	-0,65	+15	20	+	15th EME CONFERENCE
Aug 25/26	-22	-0,37	+106	140	-	Moon in south
Sept 1 /2	+2	-1,28	-166	25	+	Eu VHF T-contest Night
Sept 8/9	+21	-1,78	-87	45	-	ARRL VHF T-Contest, Day AM
Sept 15/16	-2	-0,40	-4	20	+	SUN, Day Weinheim
Sept 22/23	-21	-0,44	+91	180	-	Moon in south
Sept 29/30	+5	-1,47	+175	25	+	ARI Contest CW/SSB Night
Oct 6/7	+20	-1,81	-106	45	-	ARRL EME uwave Eu UHF T-Test
Oct 13/14	-5	-0,24	-24	25	+	Perigee, Day AM
Oct 20/21	-20	-0,38	+74	100	-	Moon in south, Day PM
Oct 27/28	+8	-1,64	+145	25	+/-	Apogee, Day PM
Nov 3/4	+19	-1,84	-125	40	-	ARRL EME I Eu VHF CW T-Test
Nov 10/11	-8	-0,23	-44	30	+	Perigee, Day AM
Nov 17/18	-18	-0,24	+57	50	-	Moon in south, perigee
Nov 24/25	+11	-1,75	+137	25	+	Apogee, night
Dec 1 /2	+18	-1,81	-143	35	-	ARRL EME II Apogee, night
Dec 8/9	-10	-0,34	-64	30	+	Day AM
Dec 15/16	-16	-0,12	+37	35	-	Moon in south, Day PM
Dec 22/23*	+14	-1,78	+118	30	+/-	Sun 14-16+21-23US Day PM
Dec 29/30	+16	-1,71	-162	25	-	Apogee, night

*ATP=ActivityTimePeriod for 432MHz, send reports to K2UYH & Dubus, 432 MHz activity times should boost the 432MHz CW EME activity. see http://www.mydarc.de/dl7apv/moon2010/moon2010.htm for up-dates !