432 AND ABOVE EME NEWS
JULY 2003 VOL 31 #7

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THE NL WEB VERSION IS PRODUCED BY W6/PA0ZN AND AVAILABLE AT <http://www.nitehawk.com/rasmit/em70cm.html>

CONDITIONS: June produced some excellent signals on both 432 and 1296. Activity appears better on 1296 than 432, but there were still plenty of initials to be caught on 70 cm – see SM2CEW's report who added 3. Those looking for South America on 70 will have to be a little patient. FY5DG's power amp is out of service, and he does expect to be QRV again until the autumn. LU7DZ – see DL9KR's report and PY5ZBU are 2 other possibilities. The big event in July is not the sked weekend, but the ES8X dxpedition to Kihnu Island (KO18xc) from 25 July to 5 Aug. Special attention will be focused on 432 EME on CW and JT44. See the last NL for more details. Skeds are shown at the end of this NL.

DL0AO: Tom <Thomas.Hoeppe@asamnet.de> (DJ5RE) reports – I was QRV on 7 June from our club station, DL0AO. I worked DK3WG on sked (O/O), DL7APV on random (439/449) and JA6AHB on random (O/O). Heard were UA3PTW (worked already), VK4AFL and HB9AHD (?). I found that making QSOs on 70 cm random is hard with low power, as sequencing is very different from station to station. I often TX'd at the same time as the station I called. If you are keen on adding initials, a clear indication of changeover is very helpful. Please watch out for our small station. It consists of 4 x 11 lamda BV yagis, GS31b PA with 600 W and NE327 preamp with 0.4 dB NF.

DL1EJA: Oliver's dl1eja@yahoo.de had to cancel his June 70 cm EME dxpedition to YL1A and LY2AAM due to the failure of their PA as reported in the last NL. But, they did try on 2 June some QRP 70 cm EME from LY2AAM with a 19 el M2 yagi and 100 W from KO06vb. They report QSOs with DL9KR and possibly DF3RU. They also worked DL9KR from YL1A.

YL1A TEAM WORKING DL9KR ON 70 CM

DL3OCH: Bodo DL3OCH@t-online.de traveled to Liechtenstein on 29 May to try some 1296 JT44 EME tests. Unfortunately K2UYH was the only station to respond to his sked request – The signal from DJ9YW when I was in 3A was very strong. I received peaks up to -23 dB and a synch level of 4. After a few periods I could read the message from Heinrich on my display. This time, I had a problem finding the right antenna direction for the moon. It was extremely cloudy. I couldn't even see the mountains. The conditions were not good either. We had 2.8 dB more loss because the moon was so far away. However, it worked! I recognized your (K2UYH) change in text because of my long call sign. The average was hard to read. My exact grid was JN47sf. In the beginning of Sept I am planning another dxpedition. I know this is not the best time, but it has to fit my vacation schedule. I do not have a problem with operating in the night. Thus far I have received interest in 23 cm JT44 skeds from only 4 stations: DJ9YW, K2UYH, OE9ERC and HB9Q. Maybe VE7BBG could be worked too. Several others have asked for a sked, but they do not have JT44 and a QSO would be impossible. I am planning to operate on 9 Sept from TK (JN42), 10 Sept from TK (JN41) or maybe IM0 (JN41 - Caprera Island) and 12 June IS0 (JN40).

DL9KR: Jan Bruinier@t-online.de writes about his operation in June -- I was happy to work the LY2AAM expedition from locations KO06 and KO16 as initials #779 and #780 on 2 and 3 June respectively. Faraday was well defined and vertical at both times - my echoes being very weak. Since the LY boys had a single yagi only, it was a cinch for them to turn it vertically within its mount. They set up the rig practically under the feed element, so the puny 100 W reached the feed pointed with minimum attenuation from about 2 m of coax. Hopefully, these QSOs will encourage them to go other places with a more powerful rig in the future. I worked on 7 June SK0CC, KE2N (strong) and SP6JLW, on 8 June WA4NJP and I2RV #781, and on 16 June I tried to assist PA0PLY to work LU7DZ in a sked. I worked both of them with Eduardo being an impressive (569). I was also active on 22 June, but a number of CQs only resulted in working the ever present SP6JLW on an otherwise deserted band.

F5VHX: Graham Graham.D@wanadoo.fr is getting a new dish mount – I went today to finish the dismantling and transporting of my new dish mount back home - phew! It is over 800 Kg and is now dumped on the grass outside my shack. I hope in the next 6 to 8 weeks to have the concrete plinth in and the mount on it. I will then start the actual dish this autumn/winter. It was a high-speed missile-tracking mount that had a 3.5 m solid and "very heavy" dish on it. I will put a 6 or 6.5 m Al frame and mesh covered dish on it. I'll then be able to get on 432 properly and make some good noise measurements on this band too.

G4CCH: Howard has been comparing the TS2000X with his old FT107 and reports that he is somewhat disappointed – My old setup has a lower noise floor and the RX sensitivity on 23 cm seems low. I need another 10 dB of gain between the LNA and the RX to get the S meter off the bottom. The noise blanker mode, NR2, seems totally ineffective and sounds really weird. NR1 is not much better. I have tried tweaking the settings, but with no real improvement. I need to be on CW and with BW down to at least 300 Hz to hear the same echo that I can with my FT107 wide open at 2.4 k BW. [Still seems strange as I am very please with my TS2000X's performance.] On the plus side, I think it's a very clever piece of equipment, and totally outperforms my old setup on features, frequency precision and stability. My next step is to try the TS870S.

G4RGK: Dave hutchinsondibleyltd@btinternet.com writes that he has curtailed all EME operations while building work is going on at his QTH. He is hoping to be back in the fall, but this depends on how well the work progresses and the WX.

GW3XYW: Stu gw3xyw@thersgb.net report on his June EME activity -- On Saturday 7 June I copied OK1KIR calling CQ on 10 GHz. I gave them a call, but at the crucial moment lost RX and TX capability as the result of a faulty coax termination. It took me some time to fix this problem. On Sunday I was QRT due to high winds. I am now able to find my weak echoes on 10 GHz by using the WSJT Doppler prediction on JT44. It is very accurate. I enter my own QRA locator in the box on the JT44 screen. Work is in progress to extend my 10 GHz dish from 9' (f/d = 0.5) to 10' (f/d=0.45) that is from 2.7 m to 3.0 m.

HB9JAW: Michel's HB9JAW@Kaktus.ch activity report on his EME activity in June – During the SW my activity was "on and off" due to work, heavy thunder and rain showers. I worked on Saturday on 1296 at 1409 LA8LF

(559/559) for an initial (#), 1420 DL1YMK (539/549), 1525 SM6CKU (559/569) # and 1909 HB9SV (579/579), then switched to 432 at 2024 SP6JLW (449/559), 2040 SK0CC (539/539) # and 2049 OZ6OL (559/569), then back to 1296 at 2055 heard LX1DB (57) on SSB, 2055 SM2CEW (57/57) on SSB, 2101 K5GW (57/57) on SSB, 2110 W2UHI (579/589), 2117 IK2MMB (559/569) and 2110 K5JL (579/589). Conditions in the afternoon were not overwhelming at all, but during the evening I heard my strongest echoes ever on 1296.

JR4ZZS: Yoshiro, JA4BLC ja4blc@web-sanin.co.jp that a new EME Club station will be heard off the moon soon -- We JR4ZZS successfully mounted the dish on the tower this afternoon. JR4ZZS is a club station located about 10 miles east of my QTH. The club president and the owner of the garden in which the club dish is located is JR4AEP. The core members of the club are JR4AEP, JR4BRS and JA4BLC. All are experienced moonbouncers. The dish was used by JA6CZD for many years, and provided to JR4ZZS last year. It was originally 7 m in dia, but we have expanded it to 9 m. As a result, the f/D has been reduced from 0.6 to 0.47. We have also added some ribs for better surface accuracy. The reflector plane of the dish is covered by 10 mm stainless steel mesh. We hope to QRV in autumn of this year.

JR4ZZS CLUB AFTER MOUNTING NEW 9 M DISH

K1FO: Steve steve@lunarlink.com writes that he just can't seem to find much time for EME activity. Back in the REF/DUBUS contest he had 52 QSOs and 27 multipliers, but he never got around to sending his log in. Initials during the contest were KE2N #607 - new QTH and F6HZL #608. His only QSO in April was with KU4F. This month, June, Steve was QRV on Friday night (local) of the SW and called CQ for about an hour with no results. He was not able to be QRV on Saturday, but on Sunday he had QSOs with YU1EV, WA4NJP and DJ3FI. Steve has a big project ahead of him. It seems impossible, but his 24 yagi array has been up for more than ten years! Wow does time fly. Steve feels that his array has been deteriorating for the past 3 years and RX performance is off by around 2 dB now. The enamel coating is almost gone from the open wire phasing lines and the copper driven elements (which also were enamel coated) are now heavily oxidized. In addition, he believes that moisture has migrated into the 6 LDF4-50 phasing lines used in the array. Due to the folded dipoles and open wire lines in the array he can't check for moisture by a resistance measurement from the shack, but if he holds the key down, the SWR moves around. This is usually a sign of water in the system, and means the array must come down for re-building. It's on a 30 m tower. Steve doesn't know when he'll find the time to get the job done.

K7XQ: Jeff k7xq@elite.net was on 1296 during the SW – On Saturday at my moonrise I worked K0YW - loudest I have heard and an easy random QSO. I also heard and called OZ6OL and G3LTF and heard G4CCH and K5JL. I called CQ for a couple of hours with reasonable echoes.

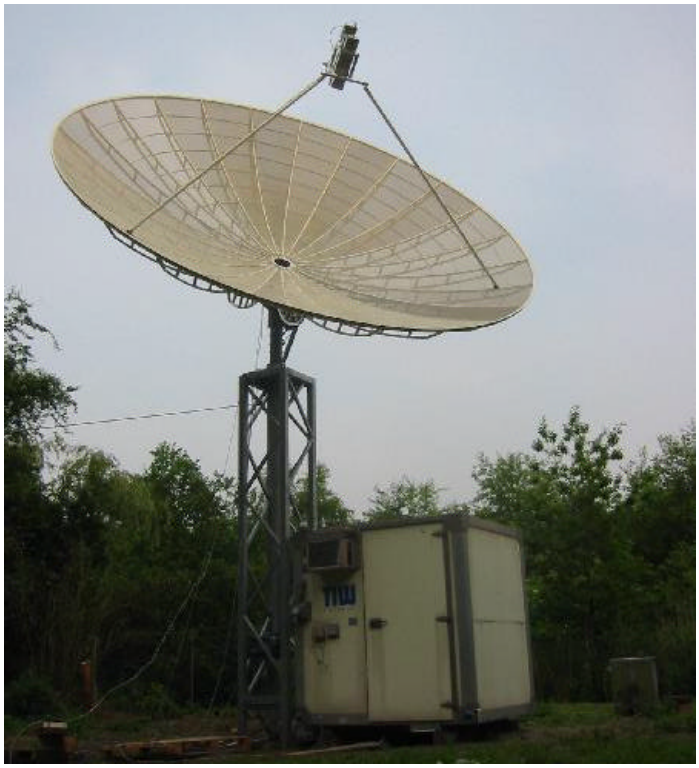
KA0Y: Ken <ka0y@aol.com> was QRV on 1296 during the June SW and worked K7XQ on random and also QSO'd LA8LF, SM2CEW, K5GW, W2UHI, K5JL, K9BCT, IK2MMB and G3LTF.

KL6M: Mike kl6m@qsl.net writes - My activity has been on the low side, due to some equipment problems coupled with conditions that have been less than favorable. My last initials on 70 cm were in March with SP6JLW (O/O), OK2BDQ (549/559), IN3AGI (549/559) - worked with 2 degrees of moon at my moonset, KE2N (549/339) and HB9JAW (559/559) to bring me #126. I have been very busy with EME nevertheless, working on system improvements. I am installing all my equipment into a console, and trying to clean up my wiring mess and documenting it properly. I have been working on the positioning system also. Right now I am temporarily using a TAPR TrakBox (satellite positioner) for elevation and a homebrew azimuth system. I am building an incremental up/down pulse counter to take advantage of the 60,000+ pulses that my system outputs from 0 to 360 deg. Right now the prototype is working great on a Heath ET3400 microprocessor trainer and I am debugging the PCB version. I have a 23 cm 2C39 amp about 50% finished and hope to be QRV on 1296 again soon. Any suggestions on a GOOD preamp for 23 cm would be welcome. I currently have a Down East unit and would like to upgrade. I am planning to build a GS35B amp for 70 cm and have collected most of the parts. During the last SW I had 4 skeds on 70 cm with PAØBAT, S51ZO, ON4IQ and FY5DG. All were nil due to equipment problems here. I recently put a 2 m 2 el cubical quad in the feed and am now up to 13 initials on 144. Also news-worthy, I had an article on my EME adventures published in the winter edition of CQ-VHF (Feb 2003).

LA8LF: Anders MILCOM@tiscali.no was active on 23 cm EME during the SW – I worked on 7 June G4CCH (559/559), DJ4YW (449/449), HB9JAW (579/559) for initial #125, SM2CEW (579/559), HB9SV (589/569), OZ6OL (559/559), K5GW (589/579) #126, W2UHI (579/569), K5JL (589/569), SM6CKU (559/559), PA3CSG (589/559), KAØY (579/579) #127, K9BCT (559/559), IK2MMB (559/559) #128 and G3LTF (569/569). On 8 June I called CQ from 1500 till 2130, but worked only N2UO (O/449) #129 and OE9XXI (589/569) #130. Heard but not called was SM5CFS. There seemed very little activity on Sunday compared to Saturday. My 1296 system is now a 3.8 m solid dish and 350 W at the feed.

N2UO: Marc lu6dw@yahoo.com reports on his 1296 activity – During the June SW, I worked LA8LF and DJ9YW, both were initials, and G4CCH, OE9XXI, K5GW, OE9ERC, W2UHI and IK2MMB. I found conditions to be good. It was my first SW since the EWW Contest. I have been working on equipment for AO-40, so I have no news on the technical side of EME. I plan to be QRV for the July SW. Also, I had a good time at the IEEE Microwave Theory and Techniques Symposium in Philadelphia, where I Caught up with Paul, WA6PY, among other fellow hams.

N7AM: Jack jackriggs@attbi.com updates us on his activity -- At N7AM we have been experiencing high winds and consequently have not been on the moon very much. In the mean time we have been improving the SSB modulation and attempting to get good audio from the moon. During the ARRL's June VHF contest (14th), we were on the moon Saturday night with good CW and SSB echo's. But with the low declination only the USA was available and I worked no one. The station is in good shape for any EME on 1296.



ON7UN's NEW 20' DISH FOR 23 CM

ON7UN: Eddy ejespers@wanadoo.be is setting up a new station for 1296 EME -- We are building a 23 cm EME station from scratch. The 20' antenna is already on the tower, and a TH327 amplifier has been modified. [How much power are you getting from the modified cavity?] You can find amplifier modifications at website http://web.wanadoo.be/on7un.

OZ4MM: Stig vestergaard@os.dk reports on his SW operation -- I was only active a few hours because family commitments. On Saturday 7 June I worked on 432 UA3PTW (549/569) and SP6JLW (559/549). I noticed that the noise was few dB higher than normal both on 432 and 1296. So I gave up early, but checked noise level on Sunday and found normal Sun and ground noise levels. I didn't give the moon a try on Sunday because of the low declination, which resulted in some level of tree blockade for the whole moonpass. I expect to be QRV in July when we will be just returned home from a holiday in the south of France.

SK0CC: Sven, SM5LE, sven.o.nordin@telia.com reports on his June SW 70 cm EME activity – I worked on 7 June OE9ERC, DL9KR, HB9JAW for an initial (#), nil FY5DG on sked, nil K6EJY on sked and HB9Q on SSB my 1st ever on 432 EME. I also did some measurement with help of the WSJT -echo-testing-program. The attenuation (shadowing) from SK0CC's short-wave-mast is a ~6 dB loss (two way) for 1 hour
When the moon is south. That in addition to the 3 dB loss in the TX cable makes a "hard life" for SK0CC's EME operators - Hi. More complete measurement results can be found on SK0CC EME-homepage at http://w1.871.telia.com/~u87120967.

SM2CEW: Peter sm2cew@telia.com sends his report for the June SW -- Excellent conditions on 432 and 1296 made operating quite pleasant. On 432 I worked I2RV for initial #392 (his EME #3), YU1EV, OH5LK #393 (Jussi us using 4 X 21
F9FT and 100 W in the shack and 20 m of coax to the antennas, this was
his #1 EME on 432), OE3JPC, SM5IOT, KJ7F and on JT44 G1OGY (4 x 21 el F9FT and 300 W, his signal is certainly good enough for CW). On 1296 I worked LA8LF, SM6CKU (Ben is still on low power but has an excellent signal), G3LTF, K5GW, K5JL, KA0Y, W2UHI and then a nice roundtable on SSB with LX1DB, HB9JAW and K5GW. During this roundtable Wille lost his HV to the final amplifier, but he was good copy on SSB with just his driver. All in all, signals were very good on both bands during the weekend, despite strong aurora. I will be active during the next SW, both on 432 and 1296.

VE6NA: Bryan rhyasonb@telus.net writes -- I am now feeling quite well. My throat cancer is in remission; I hope for good. It has been 6 months since my last treatments of radiation and chemo. I've been on a heck of a diet and lost almost 70 lbs. I'm in fighting shape – hi. I've got so many unfinished projects to complete since I'm better. I went back to work again and hopefully will be back on 1296 EME this summer.

VK3FMD: Charlie ibnkarim@bigpond.com has been running JT44 skeds with me on 70 and 23 cm without success thus far. This month Charlie ran with DL7APV on 70 cm CW with no luck. He had one other sked with KU4F, but Les couldn't make it.

VK4AFL: Trevor bentont@acenet.net.au was on 432 for the entire skeds weekend but did not find much activity. Three stations were QSO'd on Saturday – all from Eur and all with good signals. Nothing at all was heard on Sunday during any window. I am interested in skeds and can be available much of the time.

W2DRZ: Tom w2drz@madbbs.com is not yet QRV again on 1296 EME, but has been doing a lot of work developing a new automated moon tracking system – see his report in the Feb NL. His web page http://www.w2drz.ramcoinc.com has all the details and schematics, also look at http://web.wanadoo.be/on7un/moon_controller.htm. The control board he has developed is priced at $US162 in kit form.

K2UYH: Al a.katz@ieee.org – I had hoped to get some moon time in during the June SW, but poor WX (heavy rain) and time commitments to the IEEE/MTT International Microwave Symposium (IMS), which started the same weekend as the SW, prevented any activity. I was pleased by the turnout at Ham Social that was part of this year's IMS. EMEers in attendance beside myself were N2UO and WA6PY. Next year IMS moves to Fort Worth. Hopefully the TX contingent can do something similar. During the week earlier, I QSO'd HB0/DL3OCH on 23 cm JT44 for initial #210. Bodo's signal peaked to only -25 dB, but I have worked stations with weaker signals on JT44. He was using a single 59 el yagi and 100 W. When I was at Dayton, I talked to K1WHS about making a circular feed for his loop yagis. This would eliminate the 3 dB loss between yagi and most 1296 EME stations that are using circular polarizations as I was during our QSO. Dave manufactures loop yagis for Down East Microwave. I believe you can use two loops fed a 90 degrees with a hybrid to get circular pol. Another approach is to use a small dish and circular feed. A 2 m dish with circular pol could give a "relatively" big signal on 23 cm JT44 EME. I plan to be active during the July SW and am interested in skeds on CW and JT44 for both 70 and 23 cm.

NETNEWS BY G4RGK (BASED ON K1RQG's NETNOTES): **K0YW** is working on latest tracking and planner program from K5GW. **W9IIX** has acquired a 12' dish from W8MQW. His GS23B cavities are away being silver-plated. **GM0ONN** hopes to be finished making the ribs for his 4 m dish soon and is planning to be QRV on 70 cm the 1st weekend in July. **K4AR** is trying and get his 70 cm system back on line after his lightning hit. **AB5IG** has picked up 12' umbrella type dish and is looking for a feedhorn. **WD5AGO** is working on getting his dish back up and QRV again on the moon. **K7NII** is listening on 23 cm with a long yagi, but does not have any TX capability at present. **WA1JOF** now has the ribs mounted to hub of his new dish and is starting to put on the screening. **DK3WG** will not QRV until after 4 July. **KM5A** is now QRV on 70 cm. He made some CQ calls but has no echoes and did not receive any replies. **WB0GGM** heard nil during June skeds with UT3LL and K6JEY. He heard G3LQR on every sequence of their sked, but got no reply. **KJ7F** is working on a freq standard. In June he worked on 432 HB9Q on CW and tried SSB, but the signals went down and he was not able complete.

FOR SALE: **F6HGQ** has a 70 cm K2RIW amp for sale or trade. The PA comes with a blower and coax relay on the input, but and without a power supply. Olivier is looking for GPS freq. standard as the HPZ3801. Contact him at f6hgq@wanadoo.fr. **W2DRZ** has new dish control/tracking board available. Check Tom's website at http://mywebpages.comcast.net/russk2t/Drz/index.htm. The board is priced at $US162 in kit form. **K7XQ** has decided to part with my brand new 400 W 1296 Amp due to lack of time or money to build a power supply for it. This is the single GS-15B PA – see Feb NL for details. Jeff is asking what he paid for it, $US400 or will consider a trade for a four or six tube fully functional 2C39 amp with power supply. Contact him at k7xq@elite.net. **K5JL** cliebman@ionet.net has for sale 6 x 7289 OZ9CR PA that was in use at K5JL. Amplifier has input and output mods and includes 6 filament transformers, bias supply with metering and adjustment for each tube. Without tubes Jay is asking $US1700. Jay also has a 13' solid dish with a .43 F/D available for pickup. **KD1VV** <kd1vv@attbi.com> is looking for documentation/information on an AM2066 PA. Bob is considering purchasing this amplifier to use for a 70 cm EME station. **NA4N** is now looking for 175' of 1 5/8" hardline. **9H1PA** is looking for a solid state brick for 70 cm. **WA3DJG** is still looking for a CV-2810 to convert to 903 and a CV-400-1 for 432. He also needs a diagram of the tower adapter plate for an MT-3000 rotor. Dave will be using with a Rohn 25 tower.

ARRL EME CONTEST TOP SCORES: The OK1KIR group has put together the following table of top ARRL EME Contest for the last 15 years:

ARRL International EME Competition Contests Records.

Band	Single operator			Multi operator			Non-Amateur Equipment		
	score	call	year	score	call	year	score	call	year
Multiband	3,263.500	OE5JFL	1993	2,921.100	HB9Q	2001	6,496.000	VE3ONT	1993
50 MHz	3.000	K6QXY	1993						
144 MHz	1,920.000	SM5FRH	1999	1,563.500	KB8RQ	1999	1,554.800	VE3ONT	1994
222 MHz	5.600	K9HMB	1982-1	3.000	WB0TEM	1982-1			
432 MHz	827.200	SM4IVE	1993	632.100	OH2PO	1997	307.100	OK1CA	1994
902 MHz	100	KD5RO	1988						
1296 MHz	343.000	K5JL	2000	255.600	K2DH	1997	24.700	KL7RA	1985
2304 MHz	18.200	OE9ERC	1998	6.400	OK1KIR	1991	9.000	SK6WM	1988
3456 MHz									
5760 MHz	200	OE9XTW-I6PNN	1995	600	OK1KIR	1999			
10.368 MHz	15.400	DJ7FJ	1994	15.300	I4TTZ	2002			
24.192 MHz									

From period 1978 -2002

FINAL: There are 2 VHF gatherings in the US this summer worth noting. The 1st is the annual CSVHF Conference, which is on 24-27th of July in Tulsa, OK. This event attracts many EMEers. Details can be found at http://members.cox.net/csvhfs. The other is NE VHF gathering in CT on 22-24 Aug. This group sponsored last year's Microwave Update.

It seems hard to believe, but the one year mark is approaching for the next International EME Conference in Trenton. Marc, N2UO and his team are planning a very special event. Registration and hotel information should be up on the conference WEBpage http://www.qsl. net/eme2004 before the one year mark. Start making your travel plans now.

There are very few skeds listed for the SW (5/6 July). I guess this is in keeping with the trend of making skeds directly via the Internet/e-mail. However, please

send your sked details to K1RQG so that he can post them on W6/PA0ZN's WEBpage. Keep the reports and tech material coming. I will be more active during the July SW and looking for you. 73, Al – K2UYH

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JULY SKEDS
5 JULY
Time 1296.050
2030z K6DV -PA3CSG
2100z K7XQ -PA3CSG

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ES8X Dxpedition Skeds
26 JULY
Time 432.040
0530z ES8X -G4YTL
0830z ES8X -DK3WG
0900z ES8X -HB9Q
0930z ES8X -OZ4MM
1000z ES8X -SM2CEW
1030z ES8X -WA4NJP
1100z ES8X -K2UYH
1200z ES8X -KO7N
27 JULY
Time 1296.084
1000z ES8X -HB9Q
1100z ES8X -K2UYH
28 JULY
Time 432.044 1296.084
0500z ES8X -G4YTL
1130z ES8X -WA4NJP
1300z ES8X -W5LUA
29 JULY
Time 432.040
0500z ES8X -G4YTL
0530z ES8X -DK3WG
1430z ES8X -WA4NJP
1500z ES8X -KO7N
31 JULY
Time 432.044
1800z ES8X -G4YTL
2 AUG
Time 432.040
1500z ES8X -OZ4MM

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TECHNICAL: The following are OK1DFC's ok1dfc@tesmail.cz drawings of his Septum Polarizer Feed for 23 and 13 cm. Sorry for the delay. A detailed article on this feed has appeared in DUBUS.