

The newsletter of the
Crystal Palace Radio & Electronics Club

Affiliated to the Radio Society of Great Britain
Established January 1956

Meetings are held on the first Friday of each month.
The room opens at 7:30pm for an 8pm start at:
All Saints Parish Church,
Beulah Hill, London, SE19 3LG
(opposite the junction with Grange Road).
Visitors are always welcome.

Web sites: Club Admin: <http://cprec.btck.co.uk/>
Club Technical: <http://cprec.btck.co.uk/OurTechnicalSite>
Email: crystalpalaceradio.club@gmail.com
Club Net: Each Wednesday at 20:00 on FM on 145.525MHz (S21) ± QRM
Twitter @BobFBurns or www.twitter.com/bobfburns

Club annual subscriptions are now well overdue. If you have not already done so, please send your £12 payment to our Treasurer Ian or bring it to the next meeting.

Next meeting: Friday 1st June 2018

Whisper (WSPR) Evening by Damien 2E0EUI

In this issue: *Future Meetings & Events, Recent Event News, The Faraday Museum by 'Theorist', Technical Snippets, Members News, Miscellaneous, Noticeboard, Diary of External Events, News from other Clubs, Local Training Courses and Club Contact Information.*

Dear Reader

Future Club Meetings and Events

| | | |
|-----------|---|---|
| 01 Jun 18 | M | Whisper (WSPR) Evening - Damien 2E0EUI |
| 06 Jul 18 | M | Compact HF and VHF Aerials by Bob G3OOU and Damien 2E0EUI |
| 03 Aug 18 | M | Summer Social |
| 07 Sep 18 | M | Introduction to Electronics - Power Supplies by Bob G3OOU |
| 05 Oct 18 | M | Practical Session - Building a compact VHF Aerial |
| 02 Nov 18 | M | TBA |
| 07 Dec 18 | M | Christmas Social |

C = Contest, CM = Committee meeting, E = External event, M = club meeting, R = Rally, T = Training course, V = Visit.

01 Jun 2018 - Whisper (WSPR) Evening - Damien 2E0EUI

Following a last minute problem with availability of speakers we have swapped two talks.

Damien writes: *My short talk will be about WSPR, a weak signal beacon mode which can be used to see how the bands are working or to test out new antenna configurations and compare signal paths and some of the kit I use with this mode.*

Recent Event News

04 May 2018 - How Not to Win National Field Day by Quinn Collier G3WRR

Quinn treated us to a humorous expose of how not to win National Field Day (NFD) having entered some 50 of these events commencing in 1967 and never come first. We were also joined by Alun Cross G4WGE who is the Deputy Regional Manager for RSGB Region 108 which covers parts of South London and Surrey.

NFD first started in 1933 as a competition between the 18 RSGB districts in the UK. However, it was not the first RSGB contest, that being the British Empire Radio Union (BERU) that started in 1931 and both are still going today although BERU is now known as the Commonwealth Contest.

NFD rules limited operation to ten watts CW only, the object being to demonstrate that low power portable stations set up out of doors at short notice were capable of maintaining reliable communication with other low power portable stations in different parts of the British Isles. Districts were encouraged to enter two stations, one covering 160m and 80, the other covering 40m and 20m - in those days 15m was not allocated for amateur operation. Since then the rules have undergone a number of changes and are now aligned with the German DARC contest which takes place at the same time.

Aerials in those days were usually centre fed dipoles or end fed Zepps using open wire feeders and a matching unit. Rigs were separate commercial or home built receivers and transmitters as the concept of a transceiver did not then exist.

Quinn's contest group was initially known as the Devon Badgers Contest Group and changed its name to the Flying Ducks Contest Group. Operation commenced on Dartmoor where flat sites were difficult to find and in 2014 moved to a site in Northampton.



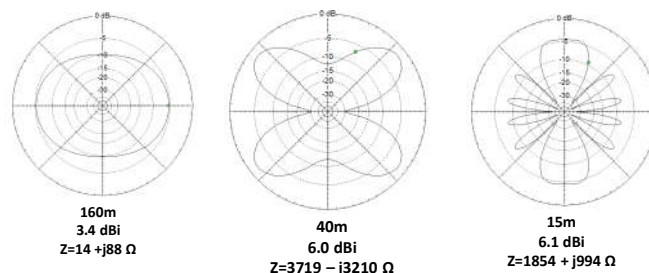
An early photo of Quinn operating NFD for Purley & DRC in 1969:



An HRO coilpack and a KW160 can be clearly seen.

A single aerial used from 1.8 - 30MHz will exhibit significantly different radiation patterns on each band so some thought will be required in respect of its height and orientation. One solution is to include removeable links so that the electrical length can be adjusted for some bands. For example, a 264 foot dipole which is a half wave long on 1.8MHz could have links in the centre of each leg to reduce its electrical length to 132 feet to make a half wave dipole for 3.5MHz and similar links for 7MHz.

The following diagrams show the estimated radiation patterns for a 1.8MHz dipole on 1.8MHz, 7MHz and 21MHz:



The dipole is aligned north south (page top to bottom) and as you can see, the pattern starts broadside (left to right) on the lowest frequency band and progressively changes to end fire (top to bottom) as the frequency increases. Impedance issues at the ATU can be mitigated by switching in different lengths of feeders.

Aerial improvements led to the use of beams and the following photo shows a mast supporting both wire aerials and a four element HF beam. The mast and aerial were assembled on the ground and then raised into position using a gin pole.



Quinn was at pains to point out that ‘things’ will always go wrong on field days as defined by Murphy’s Law - from leaving the food or fuel at home or forgetting the Morse key before the start to the loo tent catching fire in the night during the event. The first rule of NFD is make a list of everything to take and the second rule is always assume that something will go wrong so plan accordingly.

The first photo to the right shows a mast coupler that failed during the mast erection phase leading to the scene in the photo.



[I have always wondered why the coupler manufacturer cut a slot at the highest stress load point - Ed]

Results achieved were 11th out of 25 in 2014, 11th out of 18 in 2015 and 12th out of 22 in 2016.



Rule changes were introduced in 2017 to align NFD with the German rules as the contest runs in parallel with the IARU contest.

Alun then presented two short videos on NFD activities.

Thank you Quinn for a most interesting talk.

The Faraday Museum by ‘Theorist’

I had a meeting near Green Park recently, and using Google maps to find out how to get there I noticed the venue was close to the Royal Institution. Moreover the Institution apparently contained the ‘Faraday Museum’, which was news to me as I had never heard of it. However the mere mention of Faraday was enough to ensure a visit, which I made recently. The RI is in Albermarle Street not far from Green Park tube. I could not find any of those brown signs which invariably point to nearby museums, and the entrance was not exactly

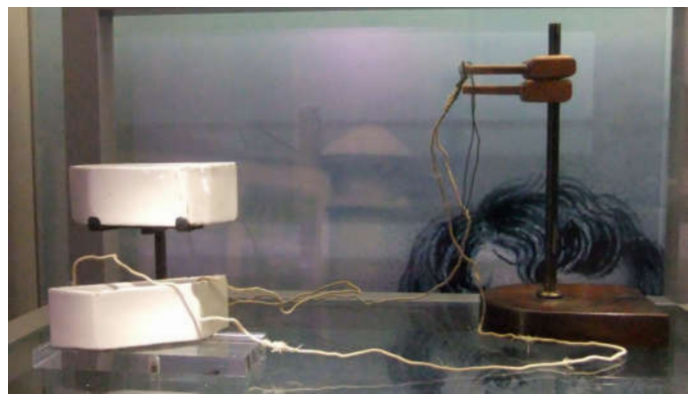
obvious and somewhat intimidating, but I ventured in nonetheless. Anything for CPREC.

The museum turned out to be rather small, and not just a museum about Faraday but also about other famous scientists who worked there. I was there for about an hour which was enough time to read all the information boards accompanying the exhibits and take some photos.

Faraday had become Humphrey Davy’s scientific assistant in 1812, and in 1813 travelled around Europe with him, initially to collect an award given to Davy by Napoleon. You will have guessed from the date that there was a rather important war on, and they were searched on first crossing the channel and arriving in France. They did not meet Napoleon but did meet Josephine and the best French scientists including Ampere, although the word ‘scientist’ had not yet been coined. Faraday was forced to act as Davy’s valet on this trip, as well as his assistant, as Davy’s real valet had declined to go, and Davy’s wife treated the self-taught Faraday as a servant throughout.

Davy is known by the general public as the inventor of the eponymous miner’s safety lamp (which saved many lives but was not infallible), but is remembered more in scientific circles as the person who isolated nine elements, and in this sense discovered them. In modern terminology he was really a Chemist, and indeed Faraday himself would eventually become Fullerian Professor of Chemistry at the Royal Institution, having discovered Benzene, developed electrolysis (using and popularising the terminology of *ion*, *electrode*, *anode*, and *cathode*), and liquefied various gases.

In June 1814 they were in Italy (Milan) where they met Alessandro Volta who gave Faraday one of the batteries he had invented, and it is this that is the first object you encounter in the museum - see below:



Volta must have seen something in the young Faraday. Back at home Faraday improved on Volta’s design and became interested in the interaction between electricity and matter.

To measure electricity Faraday invented the ‘Voltammeter’ - see over the page.

This worked by measuring the quantity of electricity needed to decompose solutions into their constituent parts, gases formed being collected in the vertical tube. Using this he was able to prove that the same quantity of electricity always decomposed the same quantity of matter. He also corrected Davy who had said that electrochemical action took place at the poles; Davy

proved it happened in the solution. A full explanation of the device in the photo was unfortunately not given in the museum.



Faraday's chemical work was excellent and established him as a first rate experimenter, but it is really the work on electromagnetism which was his greatest achievement. One exhibit showed a peculiar device which Faraday called a condenser. It is effectively a spherical capacitor, consisting of a smaller sphere inside a larger one, with a gap between them that could be filled with air or anything else. Careful experiments with this device showed that electricity was not a weightless fluid and enabled him to measure the dielectric constant or permittivity of a substance.

Of most interest to me was his 'magneto-optical electromagnet'. In 1845 Faraday, who had always believed in the underlying unity of the forces in nature, was investigating the relationship between light, electricity and magnetism. He investigated whether plane-polarised light passing through a transparent insulator could be influenced by an electric field. He could not find any evidence of that. He had better luck when passing polarised light through extremely pure glass (which he had made decades earlier) which was between the poles of the electromagnet.



When the magnet was on the plane of polarisation of the light was rotated, and this 'Faraday Effect' as it is known laid the foundations of magneto-optics. He wrote at the time that he had succeeded in 'magnetising a beam of light'.

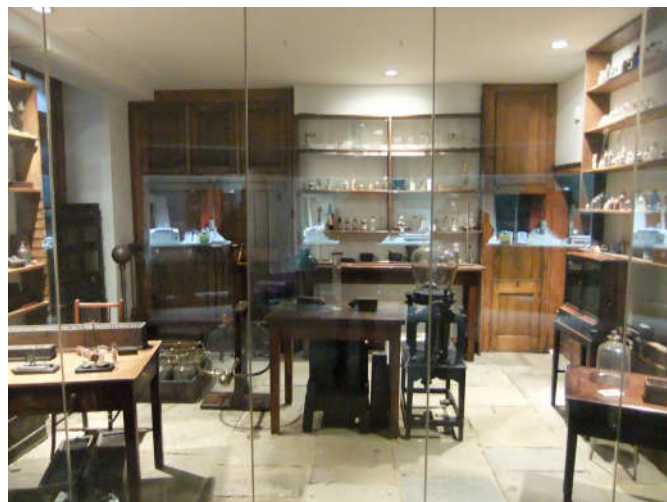


This was all written up in a paper, but a day before sending it off he found something else. He had made an extremely powerful electromagnet and was going to use it for further investigations in the area, but when he first turned it on he noticed that the glass moved a bit, as if it were magnetic. He tried other non-magnetic materials such as wood and pieces of apple and found that they too could be influenced by a strong magnetic field – he

had discovered the phenomenon of diamagnetism. Every material, even 'non-magnetic' substances exhibit some sensitivity to a magnetic field. Today we know this is a quantum mechanical effect.

Another important achievement was the discovery of the transformer; the first ever made is another exhibit.

Faraday's lab, or a replica of it, is also preserved at the museum, which is only worth a visit if you are interested in Faraday and early scientific pioneers, or you are in the area and have an hour to kill.



Members News

a) Data Rules: At the May meeting members were provided with their data letter and data report as required by the latest EU data rules - all other members will receive theirs by post. Members are required to positively confirm their permission for the club to hold their data on a computer for which a tear-off slip has been provided. No response will be interpreted as their previously given permissions being withdrawn.

We will also be contacting all club associates (adjacent clubs and other interested parties) who just receive our newsletter to get their renewed permission to continue to hold their data and send the newsletter.

b) A street party will take place close to Jim MOJFL's QTH in Overhill Road, Beckenham on Sunday 3rd June and we hope to operate a station there during the day.

If you can help then please contact our Secretary Alan G8NMK well before the event. Jim has both HF and VHF aerials already installed so we just need to provide the equipment and manpower.

c) Club membership - this year renewals have been slower than normal and our overall membership is down a little at present.

d) SK Donations: Geoff Godfrey and Damien 2E0EUI brought along some items from the shack of silent key club member Dave Eaton which had been donated to the club. A full list will be published as soon as available.

e) CATS Bazaar on 18th November 2018 - we have booked two tables at this event and will require assistance - please contact our Secretary Alan G8NMK if you can provide an hour or two. This is a popular annual event with good attendance and many sellers.

f) Newsletter: We are always looking for contributions to this newsletter so if you have a project or article that would be of interest to other club members please send it in.

Technical Snippets

a) Quinn's NFD talk reminded me of some early CPREC experiences from when I first joined the club in 1957. We regularly took part in both NFD and VHF FD and somewhat later tried SSB FD for a few years. We used what was loosely called a 'long long wire' which was in fact a 264 foot long end fed Zepp fed with open wire feeders connected to a Z-Match ATU. This aerial, which was pointed (end on) at USA, worked well on the lower bands but was less useful on the higher bands except for low angle openings to the States in the early mornings when it performed extremely well.

To get more flexibility we changed over to a 264 foot dipole (1.8MHz) centre fed with open wire feeders and removeable links in each half to convert it to 132 foot (3.5MHz) or 66 foot (7MHz and above) electrical lengths. The links allowed us to obtain a more 'all round' radiation pattern and minimise the end fire issues on the higher frequency bands.

We used a variety of locations over the years including Crystal Palace, Woldingham, Wrotham and Warden Point on the Isle of Sheppey, the latter providing an excellent takeoff to Europe on VHF. The early HF receivers were an AR88, 1475 or HRO with home built converters for VHF and home built HF and VHF transmitters. Later we used a Heathkit SB-101 transceiver on the HF bands which I still have in working condition although it now has Top Band added.

Field Days were an ideal opportunity to experiment with a variety of aerials including a Vee beam, Rhombic, stacked W8JK bi-directional beams and a TA33jr three element three band trap yagi. As expected, the Vee Beam and Rhombic aerials were good for long distance low angle Dx contacts but much less useful for European working. They also provided relatively narrow radiation patterns so had to be more carefully aligned during assembly. To make contact with nearby European stations on 40m and 20m we would often lower the dipole aerial to half its regular height which gave us a high angle radiation pattern that was ideal for short skip conditions.

It was those early field day experiences that led to my over-riding interests in the HF bands, Morse operation and the development of full break-in equipment. The latter allows the operator to listen to the receive channel during key up periods (even between dots) at 25 words per minute but requires very careful timings in the transmitter and receiver control lines.

Receivers like the AR88 had to have their AGC systems modified for much shorter time constants as the AGC was also used to mute the receiver during transmit periods. My subsequent home made equipment had specially developed AGC circuits to provide the correct time constants on receive but very

fast change-over time constants. Aerial changeover switches were all electronic (valves of course in those days) as relays were nowhere near fast enough.

One year we had problems with the regular HF CW transmitter so three of us built a replacement valved, six band, VFO controlled transmitter the weekend before NFD. Thankfully it worked on the day with no problems and continued to do so for some years after. As I recall the lineup was an EF91 VFO/multiplier, 5763 buffer/multiplier and 2E26 PA covering the 1.8 - 28MHz bands with ten watts DC input power. This was one last minute project that was easier to accomplish with valves than solid state.

Early power supplies were petrol electric generators providing 12v DC to charge a large lead acid battery followed by a dynamotor rotary converter initially and thereafter a transistor inverter that provided the HT supplies for the all valved rigs. The valve heaters were directly powered from the 12v DC supply.

Later field days used 230V AC generators. The advantage of the battery option was that if the generator failed, usually due to running out of fuel, you still had the battery to provide power for a while.

The following photo is of a CPREC NFD station sometime in the 1980s at Crystal Palace:



The beam is a G4MH two element three band reduced size yagi. Near the tent and caravan is a 33foot vertical for 40m plus our usual 264foot dipole supported on 45foot masts.

b) Z-Match or Other Aerial Matching Unit - The only purpose of an aerial matching unit (AMU) is to transform the aerial impedance to the correct load impedance, usually 50ohms, required by the receiver and transmitter on whatever band is in use. For readers not familiar with AMUs the correct tune up procedure is as follows - note that this requires the connection sequence to be Transmitter to SWR bridge to AMU to Aerial:

- Set up the transmitter/transceiver on the chosen band into a 50ohm load and reduce the output power setting to a safe level, typically 10-20% of maximum and de-key. Select the AMU and key up. Modern broadband rigs will not require any adjustments other than the VFO and bandswitch but older valve rigs certainly will.
- Adjust the AMU tuning controls for minimum SWR or reflected power and de-key.

- If you have calibrated controls on the AMU, note the settings for next time.
- Set the transmitter output power for the desired level. The reduced power setting avoids any risk of over-heating / damaging the power amplifier.

Repeat this process for all required bands.

Linear amplifiers need to see the correct load impedance to ensure the best linearity otherwise you risk upsetting other band users with "splatter" from your incorrectly adjusted transmitter.

An AMU may well provide some attenuation of harmonic or spurious products but this should never be relied on. These products should be attenuated as early as possible in the transmitter.

Miscellaneous

a) Zeppelin Talk: Cathy and I attended an illustrated talk on 24 April on the Zeppelin raids on Croydon during 1915 given by Ian Castle at the Museum of Croydon.

On a loosely related topic the Croydon Airport Visitor Centre is open on the first Sunday of each month throughout the year. Address is Airport House, Purley Way, CR0 0XZ.

See <http://www.croydonairport.org.uk/> for more information.

b) 737 Simulator Experience:

For my birthday earlier this year I received a present of a 30 minute 'flight' in a Boeing 737 flight simulator in London. Not wanting to appear completely incompetent, having never flown an aircraft of any sort, I studied a number of 737 training videos on Youtube.

In the event I managed take-offs from Heathrow and Gatwick and a just about safe landing at San Francisco. The first landing at Hong Kong bounced badly (fatally!) but the second one just got down with a bit of a wobble - there is a descending sharp right turn over the city as you approach the runway which is difficult, especially for beginners.

I now realise just how many variables pilots have to manage at the same time.

It was also very interesting to find out from the Youtube videos just how much control technology exists in the background for what may initially appear to be simple functions like the small front wheel steering mechanism in an aircraft.

Notice Board – Wanted and For Sale

The Notice Board is for all club members to use so if you have one or more items that you wish to buy or sell then please send in the details. Some of the current list of items may be viewed at:

<http://cprec.btck.co.uk/SaleofClubEquipment>

All excl P&P.

For Sale

a) Remaining items donated for club use or club funds by two Norbury residents:

- Four text books: 'HF Communications - A Systems Approach' by Nicholas Maslin, 'Communications Systems' by Simon Haykin, 'Telecommunications Engineering' by Dunlop & Smith, 'Introductory Topics in Electronics and Telecommunications - Modulation' by F R Connor. £1 each.
- Gould Digital dual beam 20MHz storage scope type 4035 with manual on CD, working, £30.

Offers to our Chairman Damien on 07900 242541 or email [Gorby928\(at\)gmail.com](mailto:Gorby928(at)gmail.com).

b) From the shack of Bob G30OU:

- Commercially designed and made precision permeability tuned solid state VFO with built-in reduction drive, 7.6 - 8.8MHz, £75 ono. A photo may be seen at <http://www.qsl.net/g30ou/pto.html>
- 1.4MHz crystal filters for USB & LSB, all tested, £15 each
- Pye 455KHz LC filter, 15KHz wide, £3

Offers to Bob G30OU on 01737 552170 or email [g30ou\(at\)aol.com](mailto:g30ou(at)aol.com)

CPREC has a large bank of fundamental and overtone quartz crystals, from 1.0 – 99.91MHz. The list, which is on the club website as a downloadable PDF file, has recently been updated with new frequencies and case classifications and sorted in frequency order. Prices are £1 each to club members and £2 each to non members, excluding P&P.

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G30OU

Diary of External Events

1-3 June - Ham Radio Show, FRIEDRICHSHAFEN

Messe, Friedrichshafen, Germany. Trade stands, SIGs, IARU Member Societies have stands in the main hall. Large flea market. Lectures each day, some in English. Large RSGB book stall. More information from www.hamradio-friedrichshafen.de.

10 June East Suffolk Wireless Revival (Ipswich Radio Rally)

Kirton Recreation Ground, Back Road, Kirton IP10 0PW just off the A14. Opens 9.30am, free car parking, entry £2. Trade stands, car boot sale, Bring and Buy, SIGs, GB4SWR HF station and an RSGB bookstall. Catering on site. Contact Kevin, G8MXV, 07710 046 846, Web: www.eswr.org.uk.

24 Jun (new date) - 31st Newbury Radio Rally

Newbury Showground, next to Jcn 13 of M4, Berkshire. Amateur radio station, exhibits, SIGs, clubs and societies. Opens to sellers at 8am, visitors 9am. Free parking, entry £2.50 visitor, £12.50 CBS sellers pitch. Advance bookings (with discount) via www.nadars.org.uk/rally.asp On-site catering, disabled facilities. Contact: email: NewburyRally@nadars.org.uk, Web: www.nadars.org.uk

29 Jul, Chippenham & DARC Rally, Electronics Fair & Car Boot Sale

Kington Langley Village Hall & fields, Church Road, Kington Langley SN15 5NJ. Opens 10am (disabled 9am), entry £2, car boot sale, catering, flea market, SIGs, talk-in, trade stands. Contact Brian Tanner, G6HUI on 0772 224 2741 or rally@g3vre.org.uk

The RATS (Rugby Amateur Radio Society) Rally

Princethorpe College, Princethorpe, Rugby CV23 9PY. Open 10am to 4pm (8.30am for vendors). Entry £3, car boot sale and catering on site. Tony, G0OLS, 0775 968 4411, rally@rugbyats.co.uk or www.rugbyats.co.uk

28 - 29 Sep - National Hamfest

Newark & Nottinghamshire Showground, Lincoln Road, Winthorpe, Newark, Nottinghamshire NG24 2NY. Brought to you by the RSGB in association with the Lincoln Short Wave Club. Free car parking, disabled facilities, trade stands, Bring & Buy, car boot area, flea market, SIGs and RSGB bookstall. Representatives from the RSGB Services and committees. Morse proficiency tests, on-site catering outlets and a seating area. Information from www.nationalhamfest.org.uk

12-14 Oct - RSGB Convention

Kent's Hill Park Training and Conference Centre, Swallow House, Timbold Drive, Kent's Hill Park, Milton Keynes, Buckinghamshire MK7 6BZ. The Convention programme of lectures for all interests will be available on the website. Principal sponsor Martin Lynch & Sons. www.rsgbevents.org.

18 Nov - 41st CATS Bazaar

Oasis Academy Coulsdon, Homefield Rd, CR5 1ES Coulsdon. £1.50 entry and plenty of free parking! Applications from traders, clubs and private sellers most welcome. Contact bazaar@catsradio.org or ring Andy G0KZT on 07729 866600.

News from other Clubs

Club Secretaries – please ensure that your future meeting details are present in your newsletters, on your websites or sent to our newsletter editor Bob G300U. Palace Pulse is published about ten days before our club meeting which is on the first Friday of each month and closes for editorial contributions a few days before publication. Due to differing publication dates and short lead times it is getting increasingly difficult to include other clubs' events although we will endeavor to do so if advised in time. We do not have time to go chasing each club for the information and if it become too onerous then that club entry will be removed.

Readers - If you plan to visit one of these club meetings please check with the club concerned in case of any last minute changes.

Bredhurst Receiving and Transmitting society

Meet on Thursday night from 8:30pm at the Parkwood Community Centre, Long Catlis Road, Rainham, Kent, ME8 9PN. Contact secretary@brats-qth.org or <http://www.brats-qth.org/brats/>

31 May Directional Antenna Lecture and Build Night
14 Jun 17th Century Man of Science by Tony Mount

Bromley & District Amateur Radio Society

Meets at 19:30 on the third Tuesday of each month at the Victory Social Club, Kechill Gardens, Hayes, Bromley, BR2 7NH. Contact Andy G4WGZ on 01689 878089 or enquiries@bdars.co.uk. Web: www.bdars.co.uk
19 Jun Direction Finding by Steve 2E0DIZ
17 July A Technical "Show and Tell"
21 Aug Operating and Social
18 Sep Aerials by G4WGZ

Chelmsford Amateur Radio Society (CARS)

19:30 on the first Tuesday of each month at Oaklands Museum, Moulsham Street, Chelmsford, Essex, CM2 9AQ. Contact: [secretary\(at\)g0mwt.org.uk](mailto:secretary(at)g0mwt.org.uk) Web: www.g0mwt.org.uk
18 Jun Skills Night and Table top sale
03 Jul Three Short Talks

Coulsdon Amateur Transmitting Society (CATS)

8:15pm on 2nd Monday each month. Contact: Andy Briers G0KZT on 07729 866600 or [secretary\(at\)catsradio.org](mailto:secretary(at)catsradio.org). Web site: <http://www.catsradio.org/>
11 Jun DF Hunt using the equipment made at the May meeting. Venue to be confirmed.
09 Jul Evening on the Air/Social -- Details to be confirmed.
13 Aug CATS BBQ @ G4CDY QTHR

Crawley Amateur Radio Club (CARC)

Every Wednesday 20:00 – 22:00, every Sunday 11:00 – 13:00. Formal events are on the fourth Wednesday of the month, 7-30pm for 8pm. Phil M0TZZ on 07557 735265 or [secretary\(at\)carc.org.uk](mailto:secretary(at)carc.org.uk) or Web: <http://www.carc.org.uk/>
23 May QE2 Communications by Duncan Brooker
27 Jun Meteor Scatter by Mike Davies G0KAD
25 Jul Surplus Equipment Sale

Cray Valley Radio Society (CVRS)

Meets at 8pm on the 1st and 3rd Thursday of each month at 1st Royal Eltham Scouts HQ, Rear of 61 - 71 Southend Crescent, Eltham, London, SE9 2SD. Contact: Richard on [secretary\[at\]cvrs.org](mailto:secretary[at]cvrs.org). Web www.cvrs.org
07 Jun Antenna Clinic – Dave G4BUO + TBC
21 Jun Annual DF Hunt

Dorking & District Radio Society

Meetings at 7.45pm. Contact: David Browning (M6DJB) at [djb.abraxas\(at\)btinternet.com](mailto:djb.abraxas(at)btinternet.com). Web site: <http://www.ddrs.org.uk>
22 May Meteor Scatter by Nik Read M5DND
26 Jun Back to basics: an exploration of an engineer's distrust by Philip Gray G0LFE
24 Jul South Downs Evening
Aug TBA Summer Social
25 Sep Small transmitting loops by Prof. Mike Underhill G3LHZ
23 Oct Practical evening - Making antenna traps by Tom Ellinor G4DFA

Echelford Amateur Radio Society

Meetings on 2nd and 4th Thursdays of each month at the Weybridge Vandals Rugby Football Club. Enquiries to John at [jho_g4gsc\(at\)btinternet.com](mailto:jho_g4gsc(at)btinternet.com) or 01784 451898. Web site: <http://www.qsl.net/g3ues/index.htm>
24 May Does Mars have to be the Death Star? by Prof. David Southwood

28 Jun TBA -or- On-Air / CW Practice / Bring & Buy / Natter Night

Hastings Electronics & Radio Club

Meetings held at the Taplin Centre, Upper Maze Hill, St Leonards on sea, TN38 0LQ, 7pm for 7:30 on the fourth Wednesday of each month. Information from Gordon Sweet M3YXH on 01424 431909, email: sionet3344(at)hotmail.co.uk

Web: <http://herc-hastings.org.uk/>

23 May SOTABEAM's Portable Antenna System by Tony Lunn

27 Jun My Lifelong Electronics Hobby by Rodney

22 Aug Construction Contest

Hereford Amateur Radio Society

Meets on the first Friday of each month at Hill House, Newton, Nr Leominster, HR6 0PF. Contact:

enquiries@herefordradioclub.uk or

<http://herefordradioclub.uk/>

Horsham Amateur Radio Club

meets on the first Thursday of each month at the Guide Hall, 20 Denne Road, Horsham, West Sussex, RH12 1JF. NRQ TQ172304 at 20.00hrs local time. Contact Alister Watt G3ZBU at g3zbu@hotmail.com or

<http://www.harc.org.uk/>

Mid-Sussex Amateur Radio Society (MSARS)

Meet most Fridays in the Millfield Suite, Cyprus Hall, Burgess Hill, RH15 8DX from 7.30pm till 10.00. Contact Stella on 01273 844511, [M6ZRJ\(at\)msars.org.uk](mailto:M6ZRJ@msars.org.uk) or

www.msars.org.uk

25 May Construction Contest

08 Jun Open Evening for Burgess Hill Town Festival

15 Jun Foxhunt

13 Jul Chairman's Barbeque

17 Aug Radio Night and Table Top Sale

South East Essex Amateur Radio Society (SEARS)

Contact Mark Callow 2E0RMT on 07842 336444 or [secretary\(at\)southessex-ars.co.uk](mailto:secretary@southessex-ars.co.uk) or

<http://www.southessex-ars.co.uk/>

Meetings: 7pm 2nd Tuesday each month at The White House, Kiln Road, Benfleet, Essex, SS7 1BU.

12 Jun "The Birth of Broadcasting" by Tim Wander

Surrey Radio Contact Club (SRCC)

7.30 for 7.45pm on 1st. and 3rd. Mondays every Month.

Contact John Kennedy G3MCX on 020 8688 3322 or [secretary\(at\)g3src.org.uk](mailto:secretary@g3src.org.uk). Web: <http://g3src.org.uk/>

04 Jun RSGB TX Factor Videos: 1) Ionosonde Data & HF Propagation - G3YLA, 2) VHF/UHF DX – The game of dB - G3SEK

02 Jul Annual Barbecue

06 Aug TBA

03 Sep Echo Satellites by George Emsden M0TPH

Sutton & Cheam Radio Society

8pm on 3rd Thursday every month. Contact John Puttock G0BWV on 020 8644 9945 or email [info\(at\)scrs.org.uk](mailto:info@scrs.org.uk)

Web: <http://scrs.org.uk/>. SCRS run a practical group most Monday evenings at the Bandstead Scout Hut.

15 Jun TBA

20 Jul TBA

16 Aug SOTA for Beginners – Richard Perzyna – G8ITB

Please replace the (at) with @ when using any email addresses shown in this newsletter.

Crystal Palace Radio & Electronics Club is a member of the South East Tutors training group.

| Local Training Courses | | | | | |
|------------------------|--------------------------|--------------------------|------------------------|--------------|--|
| Licence Level | Dates | Location | Club Provider | Format | Further details |
| Foundation | 9 & 16 June | Crockenhill Kent BR8 8LT | Darent Valley RS | 2 days (Sat) | www.darentvalleyrs.org |
| Foundation | 07 & 21 Oct | Bromley | Bromley & District ARS | 2 days (Sun) | www.bdars.org |
| Intermediate | 03, 10 & 17 Nov | Eltham, SE9 2SD | Cray Valley RS | 3 days (Sat) | www.cvr.org |
| Intermediate | 17 Feb, 03 & 17 Mar 2019 | Bromley | Bromley & District ARS | 3 days (Sun) | www.bdars.org |
| | = course commenced | | | | |

| CPREC Committee Information | | |
|---|---|---|
| Officers: | | |
| Chairman: | Secretary: | Treasurer: |
| Damien Nolan 2E0EUI | Alan O'Donovan G8NKM | Ian Skeggs M6FZC |
| E: crystalpalaceradio.club@gmail.com | E: crystalpalaceradio.club@gmail.com | E: crystalpalaceradio.club@gmail.com |
| Committee Members: | | |
| Bob Burns G30OU | Newsletter Editor | T: 01737 552170 E: g30ou(at)jaol.com |
| Nick Stapley | | |