

## Sporadic-E

I think Steve Nichols, GOKYA said it best, 'What is Sporadic-E (Es)? The best way to sum it up is to say that a quiet VHF or high HF band can suddenly come alive with strong signals from 1200km to 3000km away and then vanish just as quickly.'

For those of you who like the printed word, that's part of an excellent section on Sporadic-E in his book, *Radio Propagation Explained*. Pages 55 to 58 give a really good explanation and practical tips. Available from the RSGB shop and, at the time of writing, it's on special offer!

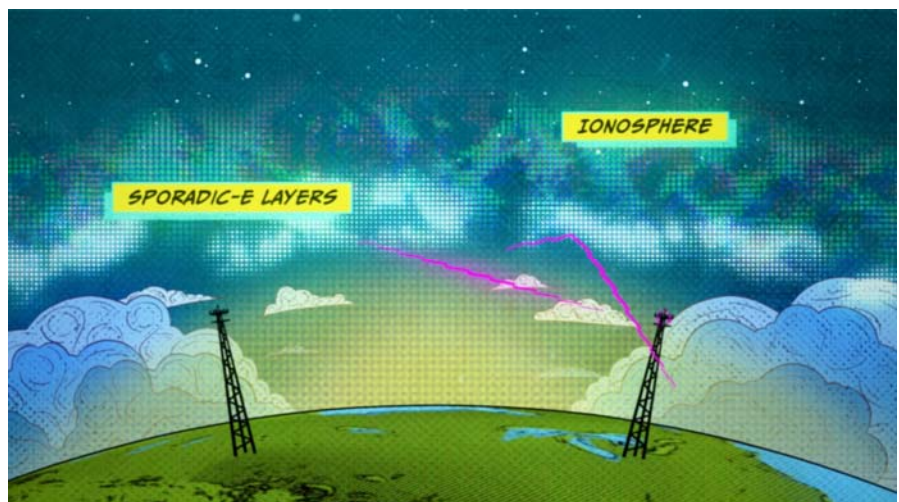
For those of you who'd like to learn from a YouTube video, I found the really excellent RSGB 2017 lecture given by Chris Deacon, G4IFX and Jim Bacon, G3YLA at <https://www.youtube.com/watch?v=e85t7Z0pO88&feature=youtu.be> This provides a really good insight and helps to familiarise you with the science and terminology.

With that familiarisation, navigate on the RSGB website to the section on Propagation or click on this link: <https://rsgb.org/main/technical/propagation/> You will see a link to *propquest*, the near real-time propagation tool developed by Jim Bacon, G3YLA. Click on that link for an overview of *propquest*. Above the overview is a link to the *propquest* site. Click on this and hopefully the most recent page will be displayed. Jim provides a really useful e blog with the latest outlook.

When I think back, it was time spent listening, happening upon something out of the ordinary, then alerting other amateurs quickly and that was it. The research that has been done to further this aspect of propagation is phenomenal.

Now as ever with our hobby, you don't have to fully understand how something works to be able to use it but an appreciation could give you an E-dge!

So with that in mind, I realised I could at least get onto 10m and find out for myself if Sporadic-E could happen that day having



looked at Jim's blog. A few months ago, I had picked up an old FM CB radio converted to 10m, at a local junk sale. A bit of TLC later, it appeared to work, give about 4W RF output, modulate and there was something coming out of the speaker.

After a bit of a struggle, I managed to match the radio to my W3EDP wire antenna. Then I clicked through the 10kHz channels on the radio and lo and behold, a repeater HB9HD being accessed by G, GW, EI, HB9 and LZ stations. The repeater was extremely strong for quite a while then gradually faded just after midday. I did try to access the repeater but without success.

In the afternoon, I decided to have another go, monitoring the FM calling channel 29.600MHz seemed like a good idea. I also discovered my deliberate mistake. In my hurry, I hadn't switched the SWR bridge fully out of circuit - that was 6dB extra loss. I heard a station call and move off the channel and patiently waited for the chance to call. Amazingly I made contact with Marcos, CT1EHI – that was my first QSO on 10m FM for about 35 years. Marcos gave me a generous 55 report, that's impressive with 4W. Remember one word of advice - fleeting - keep the QSO short as the QSB can be quite severe and the path can disappear as fast as it appeared.

A look back at Jim's blog for that day, 'As the diurnal migration of the suitable tidal winds in the E region takes the activity westwards we should also see the upper ridge playing a part in paths to Spain and Portugal'.

So having watched the lecture and followed it up with the information on the RSGB website through to *propquest*, I was armed with more of an understanding and a result. Later that evening with the radio back on, an EA station popped up on the FM calling channel. Sadly he disappeared before I could call.

I also looked up the HB9HD repeater online and translated the pages to learn about its location and history – fantastic, particularly the separation of the 10m transmitter and receiver sites.

Finally, what about a mention for other bands? Sporadic-E makes its way up to 6m quite regularly during the season and occasionally up to 2m. Steve Nichols provides a further insight, 'As an Es event gets stronger, the higher frequency bands open up. The longest distance paths are usually on the highest band open, and indeed, those bands below it will experience progressively shorter skip distances as the event develops.' Again the rest is in his book.

Simple ways of checking for these events are, keeping an eye on the beacons on the bands and an idea if 2m might be viable is by listening for foreign broadcast stations appearing in the FM Band II between 87.5 and 108.0MHz. Today's technology like WSPR, the Reverse Beacon Network and DX Maps paint a even more detailed picture of what's going on where.

So with a little understanding and *propquest*, what can you achieve via Sporadic-E? I'll be interested to know if you've tried using Sporadic-E this year for the first time and how *propquest* helped. Please get in touch via email [radcombasics@rsgb.org.uk](mailto:radcombasics@rsgb.org.uk)