



Minutes of the Propagation Studies Committee

Meeting by video conference

22 October 2022

Attendees:

Steve Nichols	G0KYA	Chairman
Dr John Worsnop	G4BAO	Vice Chairman
Chris Deacon	G4IFX	Secretary
Alan Melia	G3NYK	
Ron Smith	G3SVW	
Gwyn Williams	G4FKH	Corresponding Member
Sam Jewell	G4DDK	Corresponding Member
George Jacob	G0HSV	Corresponding Member
Carl Luetzelschwab (part time)	K9LA	Associate Member

1. Apologies for absence

Apologies had been received from Peter Duffett-Smith GM3XJE, and Barry Chambers G8AGN (Members).

2. Matters arising from the minutes of the meeting held on 30 April 2022

These minutes had previously been approved via email and posted on the RSGB website. Matters arising therefrom are dealt with under the relevant agenda items below.

3. PSC membership and roles

It was confirmed that all full members are happy to continue in their roles.

4. Topics for discussion

4.1. RSGB website – PSC pages

The propagation predictions have recently been updated, out to two months ahead.

An action to review and update the pages relating to Long Delay Echoes was carried forward from the last meeting.

Action: G3SVW to review the LDE pages and suggest any additional links and/or other material that could be added.

A notice will be added to the PSC page requesting reports of busted links (404 errors), to G0KYA.

Action: G3NYK

4.2. 28/50 MHz beacon lists

The addition of 28 MHz beacons to beaconsport is underway. Quite a lot of work has to be done (by the beaconsport team) to tidy up the data.

4.3. Les Barclay Award

After discussion, a nomination was agreed for the 2023 Les Barclay Award. It will be forwarded to the Board in due course by the Chairman, with a citation being drafted by G4BAO.

Action: G0KYA/G4BAO

4.4. RadCom HF predictions

Following discussions at previous PSC meetings, a proposal to change to a colour graphical way of presenting the RadCom predictions was considered.

Concerns were expressed that limited number of paths can be printed within the limit of a single page that is available in RadCom (12 charts), that limited detail can be displayed (four hour increments), and that charts may be more difficult for users to interpret than the current format. A consultation session was held with users at the RSGB Convention, but feedback was equivocal and there was no clear majority in favour of changing the format.

After discussion, it was agreed to leave the format unchanged, subject to the outcome of the upcoming RadCom survey being introduced by the new RadCom Editor. The graphical charts were also offered to RadCom Extra, but that is not a monthly publication so it would not be suitable.

Discussions have been had with the RadCom Editor about a text-based propagation page with monthly write-ups on what may be worked instead of the current charts. Further discussion will be required on this.

Action: G0KYA

4.5. PSC 'Science Workshops'

The first, trial, workshop session was held by Zoom on 1st October, with main topics Long Delay Echoes, led by Peter GM3XJE, and back garden magnetometers, led by Gwyn G3ZIL. Seven PSC members took part, and all agreed that it was a valuable exercise. A second session will be held in the early part of 2023, before the next full PSC meeting.

Action: G4IFX/G3ZIL

5. Projects and potential projects

5.1. Personal Space Weather Station (HamSCI)

HamSCI's focus is now on preparations for various studies based around the 2024 'Great North American Eclipse'. For this work, they are focusing on development and rollout of their lower-functionality 'Grape' receiver, which is particularly aimed at studies using WWV



and other standard frequency stations. The PSWS appears to be on the back burner for the moment, but PSC will monitor progress.

5.2. Relocation of GB3RAL beacons

The three Cornish beacons on the 28, 40, and 60MHz bands came on air on Sunday 25th September. The Mid Cornwall Beacon and Repeater Group brought into service three new CW/FT8 Beacons at 28.215MHz, 40.050MHz and 60.300MHz, each using the callsign GB3MCB. The 40 MHz and 60 MHz beacons are currently operating under an Innovation and Trial licence, not an amateur licence.

Located at IO700J in mid-Cornwall on a 100ft tower at 1,000ft above sea level, these beacons, constructed by Peter G8BCG, are ideally situated for trans-Atlantic Es/F2 and particularly for Trans Equatorial Propagation. The new beacons are co-located with existing beacons on 50MHz (as part of the Synchronous Beacon Project), 70MHz, 144MHz, 432MHz, 1296MHz and 10GHz.

The group are looking for a further monetary contribution from RSGB and initial enquiries with the RSGB President has been quite positive. Peter is currently on holiday but has promised a fully documented proposal on his return. This will then be passed to RSGB for the provision of Legacy Fund finance to be considered.

5.3. BAA Meteor Scatter Beacon

The 50MHz meteor scatter beacon project was featured in a recent RadCom article, and a talk was also given at the Newark Hamfest. The GB3MBA beacon is now on the air, running 75W on 50.408MHz, beaming directly vertically upwards using crossed Moxon antennas. PSC supported the project by providing a letter outlining the importance of the research that would be possible with the beacon.

A companion receiver project is now getting up to speed. It was noted that the UK Radio Astronomy Group has components for sale, including WiMO Moxon antennas.

The PSC wishes Brian, G4NNS all the best with the project.

5.4. Other potential projects

The RSGB President has asked for a project to look at aircraft scatter at the time of the pandemic lockdowns, and search for evidence of a reduced level of a/s contacts in 144 MHz contests during that period.

Action: G4BAO to look for someone with the skills to do the analysis.

6. Chairman's report (G0KYA)

6.1. RSGB Yearbook

Steve wrote an updated HF propagation page for the 2022-23 RSGB Yearbook, which has now been published.

6.2. RSGB Convention

Steve gave two talks at the Convention. One on "What the numbers mean", looking at the solar flux index, A and K indices, solar wind data etc. This seems to have been well



received. The second talk looked at the RadCom predictions and the online add-ons we have, based on VOACAP and ITURHFPROP. While the numbers were down on the first talk it was also well received.

6.3. Newark Hamfest

PSC put on a stand at the Newark Hamfest for the first time in three years. Gwyn, G4FKH helped out on Friday and John, G4BAO helped on Saturday.

Steve was disappointed in that the PSC stand was rather hidden at the back, as a result of which some visitors missed it. Nevertheless, it was a good opportunity to spread the word, and also to promote the online RadCom add-ons, which allow the user to tailor propagation predictions to their particular station in terms of power, mode, antenna etc.

The VOACAP version is at:

www.rsgb.org/voacap

While the ITURHFPROP version is at:

www.rsgb.org/proppy

Steve is considering writing a short piece about these facilities for RadCom, as many people appear to have forgotten that these exist.

Action: G0KYA [Post-meeting note: feature now submitted to RadCom]

7. PSC member activity

7.1. George, G0HSV

George is planning to put in place a receiver to monitor the GB3MBA meteor beacon.

7.2. Sam, G4DDK

Sam gave a talk on transverters at the RSGB Convention.

7.3. John, G4BAO

John has recently finished a 24GHz receiver and is planning to mount it as a web SDR to somewhere on the east coast, to monitor a number of beacons in ON and PA across the channel. He is currently looking for a site. John showed the group his integrated 24 GHz receiver/antenna in the meeting.

7.4. Gwyn, G4FKH

Gwyn is continuing his project comparing predictions with IBP reception. Completion of the project is not due for a few years, to give coverage across the solar cycle. Initial results suggest that ITURHFPROP is significantly more accurate than other prediction engines.

7.5. Ron, G3SVW

Ron is continuing his test transmissions looking for long delay echoes. No positive results so far. Also, locally, he has an initiative going on aircraft scatter, with the contrast between



the flutter behaviour with nearby aircraft (taking off and landing at Manchester Airport) or high-altitude planes flying over.

7.6. Chris, G4IFX

Chris' new article, "Evidence for the Magnetoionic Nature of Oblique VHF Reflections from Midlatitude Sporadic-E Layers" is about to be submitted to the journal Atmosphere. Chris has recently given presentations on his work at the COSPAR conference in Athens, at the RSGB Convention, and at Crawley ARC. His target is to submit his PhD thesis in February 2023. [Post-meeting note: the new article has now been published and can be found via doi.org/10.3390/atmos13122027]

7.7. Gwyn, G3ZIL (by email)

Gwyn has recently been investigating use of FST4W on the HF bands and its measurement of spectral spread. He gave a paper and presentation at ARRL/TAPR DCC in September and a post on the PSC groups.io site. He has also been exploring the frequency stability of standard GPS-aided KiwiSDRs, leading to improvement for those using WsprDaemon sufficient to see Doppler shift from ionospheric motion. He has some very early results, including a nice example of the downward motion of the ionosphere in the morning over the north eastern Pacific. Finally, he has been a corresponding participant in HamSci discussions for observations during their planned 2023 and 2024 Solar Eclipse studies.

8. Any other business

It was noted that the OZ7IGY multiband beacon cluster has unfortunately been taken off the air because of an inability to pay the electricity bill.

9. Date of next meeting

Provisionally Saturday 29 April 2023.

**Chris Deacon G4IFX
PSC Secretary**