



## Minutes of the Propagation Studies Committee

Meeting by video conference

30 April 2022

### Attendees:

Steve Nichols	G0KYA	Chairman
Dr John Worsnop	G4BAO	Vice Chairman
Chris Deacon	G4IFX	Secretary
Alan Melia	G3NYK	
Ron Smith	G3SVW	
Dr Peter Duffett-Smith	GM3XJE	
Prof Barry Chambers	G8AGN	
Prof Gwyn Griffiths	G3ZIL	Corresponding Member
George Jacob	G0HSV	Corresponding Member
Carl Luetzelschwab (part time)	K9LA	Associate Member

### 1. Apologies for absence

Sam Jewell, G4DDK and Jim Bacon, G3YLA (Corresponding Members).

### 2. Matters arising from the minutes of the meeting held on 20 November 2021

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

All present confirmed that they are happy to continue membership of the committee for another year. It was noted that a new RSGB Board Representative has still not been identified.

It was also noted that a small number of Corresponding Members, who had not been heard from for a long time or who had indicated that they no longer wished to continue, have now been removed from the PSC membership list.

### 4. Topics for discussion

#### 4.1. RSGB website – PSC pages

Alan, G3NYK reported that the pretest link has now been removed as it is no longer active. Also, the microwave sections of the PSC pages are to be updated, with an orientation towards information beginners need (e.g. it is not just line of sight). The initial focus is likely to be on the lower microwave bands.

**Action: G3NYK/G4BAO**



The question was also raised whether there should be more information on the site about Long Delay Echoes (LDEs), possibly including some of our own material, given the growing interest in this subject (also see Section 5.4 below).

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

It was noted that the “what does PSC do?” document needs updating.

**Action: G3KYA**

#### 4.2. 28/50 MHz beacon lists

Discussions are underway with the beaconsport team about incorporating the 28 MHz beacon list into their site.

**Action: G0KYA**

#### 4.3. Les Barclay Award

It was noted that the 2022 Les Barclay Award for propagation studies was presented to Chris Deacon, G4IFX at the RSGB AGM, for his work on 50 MHz propagation via sporadic-E. (NB, for the avoidance of doubt: Chris recused himself from the award discussion at the November 2021 PSC meeting.)

It is intended that a decision on the 2023 Les Barclay Award will be made at the next PSC meeting.

**Action: All** consider suitable candidates for the Les Barclay Award 2023.

It should also be noted that several other full and corresponding members of PSC also received awards at the RSGB AGM, including M0JAV, G0IJZ, G0KYA, and G8AGN. Congratulations to all!

#### 4.4. PSC Budget 2022

It was reported that the PSC budget request for 2022 was submitted as agreed at the last meeting, but no confirmation or otherwise has so far been received from RSGB HQ.

#### 4.5. RadCom HF predictions

Referring to the last-minute problems that Gwyn, G4FKH unfortunately had with producing the RadCom predictions for December 2021, Steve reported that if the problem happens again and Gwyn can't produce the RadCom predictions on future occasion, we do now have an alternative means of producing them in an emergency.

During the subsequent discussion, Peter GM3XJE presented scans of a number of other formats used by magazines to represent propagation predictions, including “QSP Amateurfunkjournal” and “Funkamateuer”, each of which uses a graphical format.

There followed a discussion about whether to consider changing to such a format, with the key question agreed to be which approach is more useful to most readers. A graphical format can be very appealing, but it gives a less detailed picture and both signal strength and path reliability are relevant to users. The view was also expressed that what users want from RadCom is a quick summary to give them a general idea, then go to other tools (Proppy, VOACAP online, DXmaps.com, pskreporter, etc.) for more detailed information.

The suggestion was then made that a consultation session should be held at the RSGB Convention to present the range of alternatives and consult with members.

**Action: G0KYA** to consider a consultative session at the upcoming RSGB Convention.

## 5. Projects and potential projects

### 5.1. Personal Space Weather Station (HamSCI)

There are still major supply issues with the FPGA for the standard PSWS hardware. The HamSCI team are currently focusing on their lower-functionality 'Grape' receiver, which is particularly aimed at studies using WWV and other standard frequency stations.

As far as any potential PSC-sponsored UK PSWS installation is concerned, it was noted that Bletchley Park is looking less feasible now because of RFI issues.

### 5.2. GB3RAL relocation

Given the difficulties, it was agreed not to pursue further the physical relocation of the multiband beacon hardware from RAL.

Since the previous meeting, an offer had been received from the North Cornwall Repeater Group to build new beacons and install at the GB3MCB site, under the leadership of Peter, Taylor, G8BCG. Progress has been substantial: hardware has been assembled, funding has been secured, the 28 MHz NoV has been received. There are already operational 50 MHz and 70 MHz beacons on site.

[Post meeting note: an "Innovation & Trial" licence (non-amateur) has now been secured from Ofcom to allow operation of beacons on 40 MHz and 60 MHz for an initial period of 12 months.]

### 5.3. BAA Meteor Scatter Beacon

Work to implement the beacon is well underway and financial support has been received from RSGB Legacy Fund. The beacon NoV has been received, callsign GB3MBA and operating frequency 50.408 MHz. The site has been confirmed as Sherwood Astronomical Observatory.

At the time of this meeting, the beacon has been constructed and is currently on soak test in Hampshire, with 80W to vertically directed crossed Moxon antennas. Emission is CW with a long constant carrier. An excellent talk was given by Brian, G4NNS at the end of the RSGB AGM in April and a joint RadCom/BAA Journal article is imminent.

The meteor beacon team's next step is to work on assembling a website and a network of receivers. PSC will continue to give support as appropriate.

**Action: G4IFX**

#### 5.4. Other potential projects

It was suggested that, given the current interest, a formal project should be established to study Long Delay Echoes (LDEs).

During the ensuing discussion, it was agreed that automation would be an advantage, given the probable low occurrence rate of LDEs. Possibly WSJT's echo mode could be useful. It was also noted that RadCom Oct 2007 contained an article by Peter Martinez mentioning LDEs, and that there is also an article about LDEs in a recent edition of RadCom Plus.

**Action: All** consider what systematic approaches might be adopted to search for LDEs.

**Action: G4IFX** to add a specific item to the agenda for the next PSC meeting.

#### 6. Chairman's report (G0KYA)

There has been little interaction with RSGB HQ recently.

Steve is planning to attend the Newark Hamfest 2022 on behalf of PSC, and he asked for volunteers to help him man the PSC stand.

**Action: All** contact Steve if willing and able to help at Newark.

In support of the RSGB's Queens Jubilee events, Steve has also co-written an article for the June 2022 RadCom about what can be achieved using WSPR at 70 mW EIRP.

#### 7. PSC member activity

##### 7.1. Gwyn, G3ZIL

Gwyn presented at the HamSCI 2022 Workshop with the title: "Contrasting effects of the 3-5 November 2021 geomagnetic storm on reception in Colorado of WSPR transmissions from North-Eastern North America with those from Australia".

This work brings together data from multiple sources and demonstrates that whereas signals received in Colorado from NE NA were significantly depressed during the event, the path from Australia was not adversely affected and in fact SNR improved because the disturbance reduced noise levels at the receiver location.

##### 7.2. Barry, G8AGN

Barry gave a talk at the Martlesham Round Table on his 30 THz work, but most of his time recently has been spent on 122 GHz, where he has now reached over 30 km with transmit power less than 100 microWatt. The UK record is something like 36 km. He has found that weather conditions make a huge difference, with lower humidity improving signal levels.



### 7.3. Ron, G3SVW

For several months now, Ron has sending CW signals out on the five top HF bands, 14 to 29.7 MHz, and listening for any returning echoes. So far, no echoes have been detected.

One factor Ron thinks may contribute to LDEs is the long-tailed magnetosphere created at times of high-speed solar wind. If a carrier wave escapes our ionosphere, it could enter the magnetosphere and travel a long way out. For this reason, he has focussed many of his test periods during periods of high solar wind.

### 7.4. Chris, G4IFX

At the HamSCI 2022 Workshop, Chris presented a summary of his article “Consolidated Amateur Radio Reports as Indicators of Intense Sporadic-E Layers”. Chris thanked the committee for the earlier discussion at the November PSC 2021 meeting, which had been very helpful in refining the approach to this piece of work.

[Post-meeting note: the article has now been published, open-access:

<https://doi.org/10.3390/atmos13060906>]

### 7.5. Jim, G3YLA (by email)

Jim gave an invited presentation to the March 2022 HAMSCI Workshop, and he also delivered a talk at the April GMDX Convention. Both included some early views of verification of the Es Probability Index, EPI in Propquest. He also presented an online Q&A on the use of Propquest to his local club, which was well-received and showed how a hands-on demo of complex software can be very effective.

The development work on Propquest continues but is still dependent upon the volunteer support of Jim’s work colleague Dan Holley; so, although there are many plans, their implementation operates on longer timescales. They have recently changed the multi-hop path plots so should be more useful when 6m opens, but they still have a Google maps problem, so hope to continue work on that too.

The main thrust of work on Propquest and the EPI maps is to use the new 2022 season's data for a verification exercise to improve the initial first guess for some of the parameters, principally weather-related, used to calculate the EPI.

## 8. Any other business

None

## 9. Date of next meeting

Provisionally Saturday 22 October 2022, online or in-person to be decided closer to the date.

**Chris Deacon G4IFX**  
**PSC Secretary**