



*Advancing
Astronomy and
Geophysics*

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The Royal Astronomical Society (RAS) is the UK's leading professional body for astronomy & astrophysics, geophysics, solar and solar-terrestrial physics, and planetary sciences. We therefore have a deep professional interest in the use of the radio spectrum for scientific purposes. Our members' primary interests are (a) observations of natural radio emissions from distant stars and galaxies and from objects in our solar system such as the Sun and planets, and (b) use of specialist radars to study the planets, the upper atmosphere and the interior of the Earth. The work of our members also depends on underpinning by radio-based services such as GNSS and satellite communications.

We are therefore interested in the outcome of the EU Radio Spectrum Policy Group consultation on "A coordinated EU spectrum approach for scientific use of radio spectrum". Unfortunately we were not made aware of this exercise until after the 14th July deadline, but we are pleased to note that some excellent inputs were submitted by other members of the astronomy community in Europe. There is a substantive input from the European Science Foundation's Committee on Radio Astronomy Frequencies (CRAF) and also four well-coordinated responses from astronomy groups in France.

The Society endorses the CRAF response and highlights the following issues:

1. It is important to note that astronomy has long included active services in which radar techniques are used to study objects in the solar system, e.g. meteors, planetary surfaces and atmospheres. This is a significant omission in the RSPG's consultation document.
2. It is vital to understand that radio astronomical observations are carried out at all times of day. A few observation programmes take advantage of radio-quiet conditions during early morning hours, but in general observations may take place at any time of day. The critical criterion is radio visibility of the object and this varies between day and night over the course of each year. The focus of early

morning hours is over-stated in the consultation document and could lead to misunderstandings over possibilities for sharing.

3. It is critically important to the future of radio astronomy to maintain the technical intent of the ITU Radio Regulations footnote 5.340, which prohibits emissions in certain frequency bands. This ensures the radio-quiet conditions required to observe the exceptionally faint natural emissions from astronomical objects and thereby study those objects. The EU has recently allowed a time-limited breach of the emission prohibition in respect of short-range radar systems at 24 GHz, but has stated that this decision is exceptional and cannot be used a precedent for further breaches. The outcome of the consultation should stress the exceptional nature of this breach. It is vital to astronomy that the technical intent of footnote 5.340 is maintained at a strategic level and that we avoid degradation of this intent by diversion into legalistic and/or piecemeal arguments.

We urge that the revision of the RSPG documents address these and other issues raised by CRAF. If you have any questions and comments on this letter, please contact us.