preconditions for such missions. To remedy this Long argues for an Institute that 'would attract academics from the word to come together...The interstellar research community awaits the arrival of such investment' (page 309). In fact Long is himself working to provide this since 'we should have had probes in the Kuiper Belt yesterday' (pages 345 and 346).

The theoretical background presented here by Long deserves to be read and the bibliography deserves to be considered as a starting point for anyone interested in these topics. The colour illustrations are very helpful. Introducing this section Long sums up our paradoxical situation: 'it appears we have started from a position of being bounded in the nutshell that is Earth, but yet can count ourselves the Kings of infinite space' (page 326). Further 'this situation needs to change if we are to ever to become a spacefaring civilisation and join the community of worlds that may possibly exist in this vast universe' (page 347).

For such a change we need a change in engineering demand as well as a change in institutions and most of all a change of perception of what is possible. Read this book and discuss.

Anders Hansson

Stimson's Introduction to Airborne Radar – Third edition

G. W. Stimson

SciTech Publishing (an imprint of the IET), Michael Faraday House, Six Hills Way, Stevenage, Herts, SG1 2AY, UK. 2014. 744pp. Illustrated. £110 ISBN 978-1-61353-022-1.

Since its first issue three decades ago Stimson's *Introduction to Airborne Radar* has been indispensable. The second edition was released in 1998, since when there have been major developments in airborne systems, driven by advances in both RF hardware and digital processing. An update was therefore long overdue and at nearly 30% larger this third edition does not disappoint.

The clear style and extensive use of meaningful diagrams remains, augmented throughout with real examples of radar systems and data. Sections are well structured, with key points tabulated for ease of reference. Every section now concludes with key points, short exercises to test understanding and suggestions for further reading. This will be an invaluable addition for students approaching the subject for the first time. For those using the book as a quick reference the main index, a weakness of previous editions, has been greatly expanded and improved. Key radar equations and relations are conveniently printed inside the rear cover.

All sections have been re-edited and refreshed. Important mathematical concepts are now collected together. For hardware; solid state devices, active electronically scanned arrays, receivers and digitisers are all included. For radar processing; existing sections have been expanded, with SAR processing presented in much more detail, including advanced techniques such as tomography and automatic target recognition.

Less traditional radar techniques are covered in depth. All modes of electronic warfare, including use of the array as a passive sensor and for electronic attack are now covered, mindful of the operation of multifunction radars in a congested and contested spectrum.

For radar experts and amateurs there is much here to expand understanding of the very latest concepts and techniques. The authors clearly understand their audience and have produced a work that will quickly become essential to anyone wishing to understand airborne radar.

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