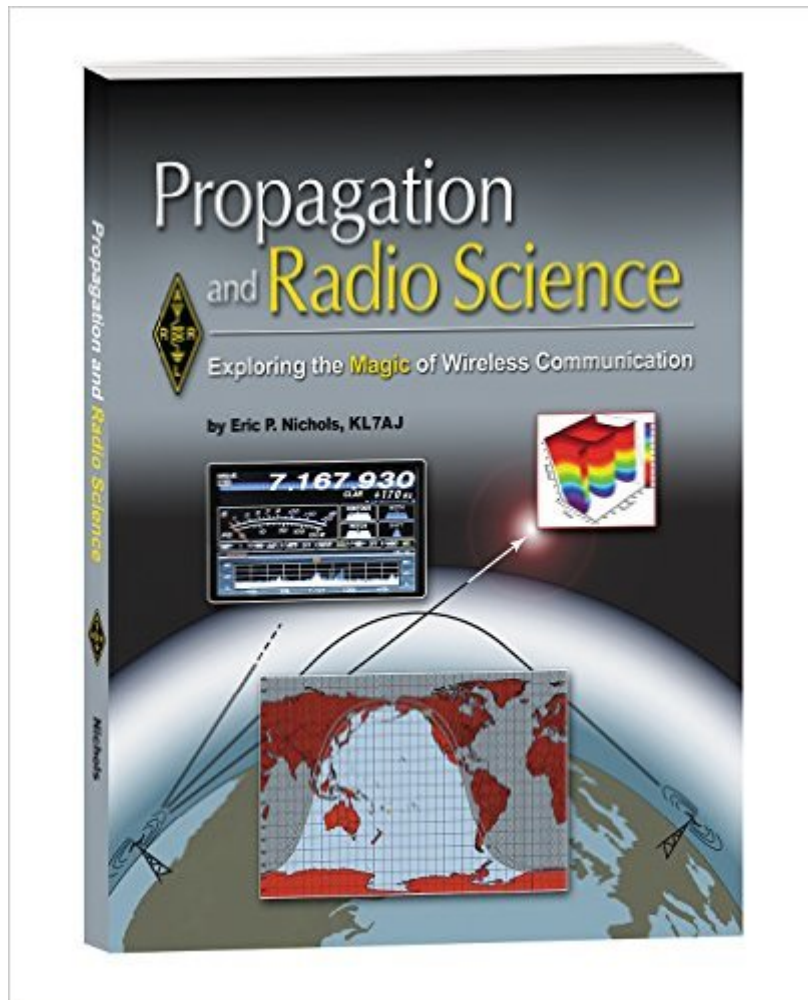


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# Propagation And Radio Science



## Synopsis

Exploring the Magic of Wireless Communication There are countless ways for radio signals to travel from transmitter to receiver, and understanding how radio waves interact with their environment is an important factor in successful radio communications. While amateurs can maximize station performance and reliability with the right equipment, knowledge and skill, we cannot control propagation. Through scientific exploration and experimentation, we can improve our understanding of propagation and how it affects radio signals. Propagation and Radio Science presents a comprehensive overview of one of the most fascinating and rewarding activities in Amateur Radio. Author Eric Nichols, KL7AJ, uses his lively, engaging approach to present the complex subject of radio propagation in simple, easy-to-understand terms. This book covers topics ranging from theoretical exploration to practical application. It explains the phenomena we observe on the amateur bands and invites you to embark on the journey through the still-unknown radio propagation universe. Chapters include: Matters About Matter, The Optical Factor, Polarization, Gain, and Other Antenna Matters, The Reflection Process, The Ground Wave, Demystifying the Ionosphere, The Anomalous Ionosphere, Magnetic Personality, Instrumentation and Interpretation, Free Electron Propagation, Neutral Propagation, Cheaper Than Dirt, Diversity Methods, WWV and Channel Probes, Software and Other Tools, Keeping Up with Kepler and Friends, Your Friend the S Meter, Loads of Modes, Sea Shanty, NVIS Modes and Methods and Unexplored Territory.

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## Customer Reviews

I got interested in the DX hobby, and intend to extend to Amateur Radio and Amateur Astronomy. Based on that I bought some books and this was one of them. If your interest is in any of the three topics above or are curious in this aspect physics, you will not regret buying this book. Reasons are:1 - Language - The author has the skill of depicting technical topics in a very easy to understand and informal way, nevertheless I finished the book with a clear picture of the processes involved.2 - Crescendo - I like the style of starting with something we are familiar (light) and then building on that to explain the other topics. This requires a bit of understanding in physics, particularly polarization. You will need that concept, but chances are that if you heard of that, you did it for light in whatever physics classes you took.3 - Coverage - I figured out that radio propagation is a vast field. The author tackles many concepts in a concise way, but it provides links on concepts you want to expand. On the improvement side, I think some graphs need to be a bit bigger, like the Ionograms (I bought the kindle version of the book), but then jump on Google and you will get the graphs and axis you need to read. Overall great reading. Good job.

This is an excellent book. It is written in an informal style (appropriate to its intended Radio Amateur "Ham" audience), Although lacking in a formal academic style, the text is clear and easy to read. I found no technical errors and found the book to be easy to read, although for a non professional reader, there are sections which the reader will want to read several times over. The scope of the book is surprisingly wide, covering a broad topic with delightful completeness. Whether a reader is interested in completeness or in a quick review of radio wave propagation science, this book should satisfy. There is much more to the science of world wide radio signal propagation than a casual observer might suspect, and this book does an excellent job. This reviewer was one of the original designers of the "Topside Sounder", the first satellite ionosounder to probe the upper side of the ionosphere, and is proud to have made a contribution to ionospheric physics; this book brought back many vivid memories, some of them sad because they relate to friends and coworkers who are no longer with us ...

At first blush, my impression was that this was a 'beginners' book. Do not be fooled. While the authors writing style is casual and entertaining, this is only a sinister plot to draw us in to reading about a subject that could very easily be dry enough to put most of us to sleep. There is a LOT of great information here, for beginner and OT alike, and this is a very easy read. Well done! Jeff - N8CC

I thought it was a good buy for me. Purchased the Kindle version so I could have it close by when I did my reading at night. Good writing in that the author explained things without going into such minute detail that you want to throw the book out. Some are saying he didn't go deep enough on some subjects but he said some items were beyond the scope of the book. For \$10 Kindle and \$25 print it's a good deal. I saw one review claiming the book isn't a reference book, it wasn't advertised as a reference book. The theory and science about propagation is what the book is about and it delivered on its promises.

This is a book well suited for a semester class at a university. It's an intense topic deeply rooted in math, science and mystery to a degree. For a mere mortal who's just an ordinary amateur operator, you can be overwhelmed with the complexity of the topic. The author did a great job of trying to keep the tigers in the cage, as it would have been so easy to drown the non-electronic-minded person like me with concepts, high math, etc. But here's the bottom line. I really discovered stuff about propagation that will enhance my pursuit of the hobby. I think my biggest takeaway from the book is that propagation is dynamic, it's somewhat unpredictable (yes, we know when the solar storms are coming via Dr. Tamitha Skov), but that's what creates part of the WONDER of the hobby! If you knew each time you'd turn on your radio that you would FOR SURE get in contact with operator X, that would remove some of the magic - at least for me. The only reason I didn't give it five stars is because some parts of the book caused my brain to hurt. ;-)

This is an excellent and well written book. I was overall impressed with the content and actually found it an overall enjoyable read despite its strong technical content. That is not any easy feat by any means. Why I docked one star, is sometimes I felt it wandered around a bit in odd directions, and also could sometimes come off as almost a bit preachy about how hams must do more experimentation to advance the radio science. I don't totally disagree with it, but perhaps rather than peppering it all over the book, a great inspiring summary at the end would have more accomplished the task. Otherwise kudos for an excellent book on a very little understood topic of the radio world. I learned a great deal.

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