Book review

Remote Sensing from Air and Space by R.C. Olsen (SPIE Press, 2007). ISBN 978-0-8194-6235-0. $76 (hardback).

This book is written by Richard Olsen of the Naval Postgraduate School, Monterey, California. The author indicates a preference to look at satellite systems and focuses on systems of high spatial resolution. Applications to weather and oceanography are left to other publications. The introduction starts with a military perspective of the use of remotely sensed imagery. Quite a few example images are provided from a variety of sensors. The introduction concludes with a short list of reference texts and some problems based on the introductory material. The following chapters all end with a set of problems or exercises, but unfortunately no further reference material.

Chapter 2, Electromagnetic Basics, works quickly through Maxwell's equations, polarisation, photoelectric effect, black-body radiation to transmission, including a brief treatment of scattering and absorption. The author then goes on to treat visible imagery, providing some basic optical theory, and introduces different detector types, then describes the Hubble telescope as well as IKONOS and Quickbird. There is a chapter on orbital motion, including Kepler's Laws. Topics of image analysis, multispectral imagery, infrared imagery, radar and LIDAR systems are covered in the remainder of the book. The appendixes contain pieces of general physics involved in remote sensing, some mission tables which seem useless, and some information about TDRSS (Tracking and Data Relay Satellite System).

My impression is that the author has converted his lecture course into a book. The problems posed at the end of each chapter are simplistic and do not add anything to the publication. The author, by design, has avoided environmental applications. The book does provide a good summary of the basic physics involved in remote sensing but only at an introductory level.

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