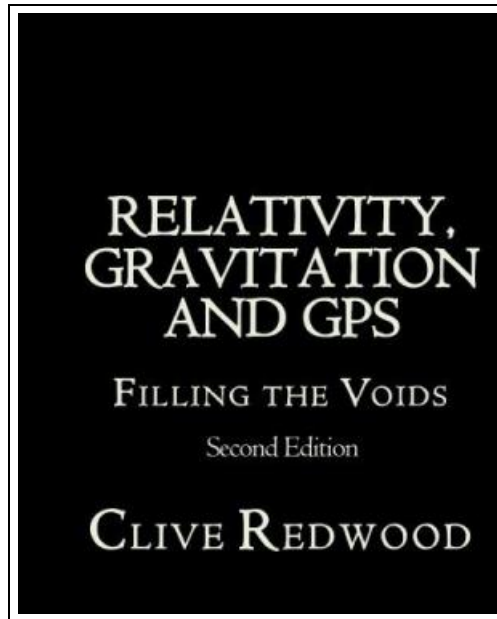


Relativity, Gravitation and GPS: Filling the Voids Second Edition



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Reviews

Basically no words to describe. It is filled with knowledge and wisdom I am just pleased to let you know that this is actually the greatest publication i have read within my individual lifestyle and may be he best publication for at any time.
(Prof. Ron Gaylord II)

RELATIVITY, GRAVITATION AND GPS: FILLING THE VOIDS SECOND EDITION



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Createspace, United States, 2012. Paperback. Book Condition: New. 254 x 203 mm. Language: English . Brand New Book ***** Print on Demand *****.This book presents the fundamentals of the science of general relativity and gravitation (GR) and the principles of application of this science in the technology of the Global Positioning System (GPS). Of the science of GR, the topics covered include: tensor analysis, including the development of the metric tensor, tensor calculus and the Riemann-Christoffel tensor; the geodesic equation; the equations of gravitational fields in the absence and in the presence of matter; the generally covariant reformulation of Maxwellian electromagnetism; development of the energy tensors of fluids and of the electromagnetic field; relativising physical relationships; the Newtonian approximation; the Schwarzschild solution; the behaviour of light in a weak gravitational field: the relativistic precession of Mercury's orbit; and the Schwarzschild black hole. In the section on GPS, the topics covered include: the structure of the GPS; the synchronization of clocks in an Earth-Centered Earth-Fixed (ECEF) coordinate system; the setup and behaviour of clocks on satellites in the Space Segment; frequency shifts of signals from satellite-based clocks; the pseudorange and its relativistic and other sources of errors; and the principles of the determination of local time and position by receiver. The book seeks to provide a full development of basic GR principles and their application in the technology of GPS. The presentation is integral and self-sufficient. That is, for the prepared reader, there should be no need to refer to other works in order to assimilate the material presented. Therefore, several concepts and methods, that elsewhere may not be discussed or are axiomatically presented, are here developed in a logically satisfactory manner. An appendix includes a review of Kleperian kinematics of orbits that informs the basic model of the GPS...



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