1. Record Nr. UNINA9910300387103321

Autore	Huebner Walter F
Titolo	Opacity [[electronic resource] /] / by Walter F. Huebner, W. David Barfield
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2014
ISBN	1-4614-8797-8
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (582 p.)
Collana	Astrophysics and Space Science Library, , 0067-0057 ; ; 402
Disciplina	535.3
Soggetti	Observations, Astronomical Astronomy—Observations Astronomy, Observations and Techniques
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Definitions -- Atomic and Molecular Structure -- Equation of State -- Radiative Cross Sections -- Continuum transitions -- Bound-Bound Transitions -- Electron Conduction -- Equations of State and Opacities for Mixtures -- Limits, Approximations, Scaling, and Interpolation -- Uncertainties in Models, Methods, and Calculations.
Sommario/riassunto	The interaction of radiation with matter is a fundamental process in the universe; in particular, the absorption and scattering of radiation by matter (the opacity) govern the formation, evolution, and structure of stars and planets. But opacity is also important in many terrestrial applications in which radiation is the dominant means of energy transfer, such as controlled nuclear-fusion, laser ablation, atmospheric entry and reentry, and the "greenhouse" effect. This book covers all aspects of opacity and equations of state for plasmas, gases, vapors, and dust and emphasizes the continuous transformation of phases and molecular compositions with changing density and temperature under conditions of local thermodynamic equilibrium (LTE) while preserving the basic abundances of the chemical elements in a mixture.