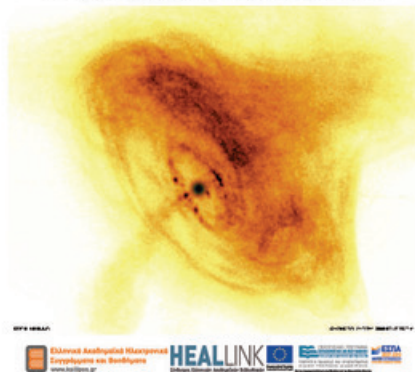


## Αστροφυσική Υψηλών Ενεργειών

Απόστολος Μαστιχιάδης  
Καθηγητής Τμήματος Φυσικής Πανεπιστημίου Αθηνών  
Νεκτάριος Βλαχάκης  
Επίκουρος Καθηγητής Τμήματος Φυσικής Πανεπιστημίου Αθηνών



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### Abstract

This textbook presents the physical theories that describe and explain the high-energy universe as it emerges from modern astrophysical observations. Cosmic ultra-high-energy radiation and astrophysical X-ray and gamma-ray sources are briefly discussed. Emission theories at these energies, such as inverse Compton scattering and synchrotron radiation, are analyzed.

The acceleration of particles leading to the creation of high-energy radiation is studied. Magnetized relativistic astrophysical outflows, the theory of plasma jet formation and propagation, and astrophysical accretion disks are described. Applications of all of the above to astrophysical objects such as pulsars, quasars, and GRBs are also presented.

