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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Short Introduction to Cosmic Ray and Y-Ray Astronomy -- The Imaging Atmospheric Cherenkov Technique and the IACTs MAGIC and CTA -- Single Telescope Trigger for CTA -- The Topo-trigger: A New Stereo Trigger for Lowering the Energy Threshold Of IACTs -- Introduction to Pulsar Wind Nebulae -- The Crab Nebula: a Gamma-Ray Factory in our Backyard -- The Puzzling PWN 3C 58 -- Introduction to Cataclysmic Variable Stars -- Multiwavelength Campaign on AE Aquarii -- Nova and Dwarf Nova Observations with MAGIC -- Summary and Concluding Remarks.
Sommario/riassunto	This thesis is a comprehensive work that addresses many of the open questions currently being discussed in the very-high-energy (VHE) gamma-ray community. It presents a detailed description of the MAGIC telescope together with a glimpse of the future Cherenkov Telescope Array (CTA). One section is devoted to the design, development and characterization of trigger systems for current and future imaging atmospheric Cherenkov telescopes. The book also features a state-of-the-art description of pulsar wind nebula (PWN) systems, the study of

the multi-TeV spectrum of the Crab nebula, as well as the discovery of VHE gamma rays at the multiwavelength PWN 3C 58, which were sought at these wavelengths for more than twenty years. It also includes the contextualization of this discovery amongst the current population of VHE gamma-ray PWNe. Cataclysmic variable stars represent a new source of gamma ray energies, and are also addressed here. In closing, the thesis reports on the systematic search for VHE gamma-ray emissions of AE Aquarii in a multiwavelength context and the search for VHE gamma-ray variability of novae during outbursts at different wavelengths. .

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