
How investigating the Ice Giants could improve our knowledge of the hot Neptune population?

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Abstract

The Kepler mission has revealed hundreds of planetary systems, mostly made of small size planets. This population exhibits a surprising diversity with, besides rocky planets, a new class of voluminous gaseous planets with radii larger than $\sim 1.6 R_{\text{Earth}}$, often referred to as Neptunian planets. In this talk we will review the current knowledge of the properties of these Neptunian planets, with a special emphasize on the close-in population. We will see that despite still important observational biases mostly due the faintness of their host stars, we have hints on their composition that set constraints on the formation mechanisms of this population. In addition, this abundant planets population will be golden targets of the forthcoming new generation of space missions, such as CHEOPS (2019) but also JWST for an in deep analysis of their atmospheric compositions. A better understanding of the physical and atmospheric properties of two Ice Giants of our Solar system will provide the needed references allowing to put in perspective the Neptune class planets.

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