Hubble Space Telescope

Cycle 16 AR Proposal

Dynamical Heat Re-Distribution Modeling in Hot-Juipter's

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Scientific Category: STAR FORMATION

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Theory: Yes

Abstract

Observations of transiting hot-Jupiter's have opened a new avenue for exploring the structure and atmospheres of giant extra-solar planets. Significantly different then our own giant planets, tidally locked hot-Jupiter's are subject to intense irradiation from their host star, which drives supersonic winds across the face. In this proposal we describe a study coupling full 3-dimensional radiative hydrodynamic models to radiative transfer models and detailed opacity studies. Noticeably absent in current studies, these models will allow us to self-consistently explore existing observations and predict properties of new objects, including spectral signatures and light curves. These predications should be directly testable by the Hubble Space Telescope and should lead to a greatly improved understanding of atmospheric physics on the surface of extra-solar planets.

Investigators:

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Number of investigators: 3

Dataset Summary:

Instrument	No. of Datasets	Retrieval Method	Retrieval Plan
	0		
	0		