

UNIVERSITY of CALIFORNIA
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**CONDENSATION-INHIBITED CONVECTION AND THERMAL
EVOLUTION OF URANUS AND NEPTUNE**

A thesis submitted in partial satisfaction of the
requirements for the degree of

BACHELOR OF SCIENCE

in

ASTROPHYSICS

by

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Abstract

Condensation-inhibited convection and thermal evolution of uranus and neptune

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This will be the last section written, once we have finished our analysis.

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To Who,

the owl

Acknowledgements

I'd like to thank my attorney, Bob Loblaw

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Introduction

Scientists began modeling the interior structures and atmospheres of the solar system giant planets shortly after Frank Low confirmed with observation, in 1966, that Jupiter was radiating more heat than it received from the Sun (Low, 1966). Modeling the interior structure of Jupiter began in 1967 (Hubbard, 1967). In section 1.1, we review prior work done on model Uranus and Neptune. In section 1.2, we review prior work done on the formation of water condensation zones in these hydrogen rich atmospheres. In chapter 2, we describe our model and present our results. In chapter 3, we discuss the ramifications of condensation inhibited convection for the thermal evolution of Uranus. Finally, in chapter 4, we summarize our findings. (Friedson & Gonzales, 2017) (Leconte et al., 2017) (James B. Pollack & Harold C. Graboske, 1977) (Fortney et al., 2011) (Harold C. Graboske & Olness, 1975) (Guillot, 2019) (Guillot, 1995)

test

1.1 Model Uranus and Neptune with Dry Convection

Will review current understanding of solar system giant planet thermal evolution here, referencing work done by Fortney, et al., and others. Not sure how far back I want to go here, but will probably mention when, and by who, thermal evolution modeling began, and then quickly get into the thermal evolution background from fortney papers.

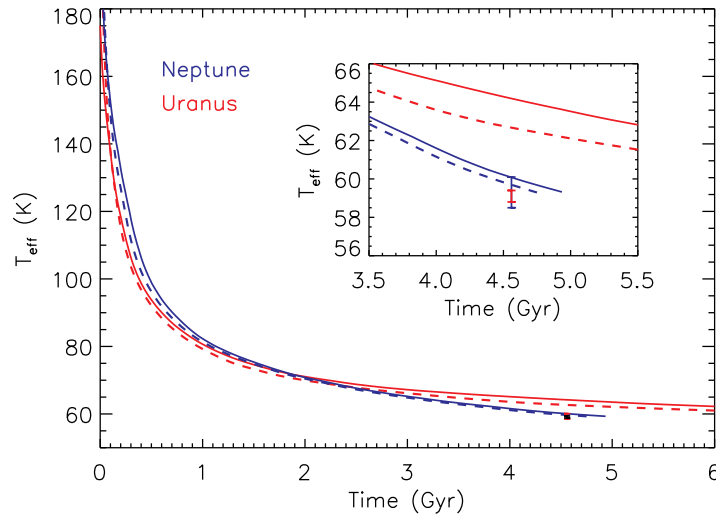


Figure 1.1: Thermal evolution of Uranus and Neptune

1.2 Condensation-inhibited Convection

This section will contain theory and results surrounding condensation in hydrogen rich atmospheres, citing LeConte, Friedson, others.

2

Model Uranus and Neptune with Condensation-inhibited Convection

2.1 Numerical Model

2.2 Results

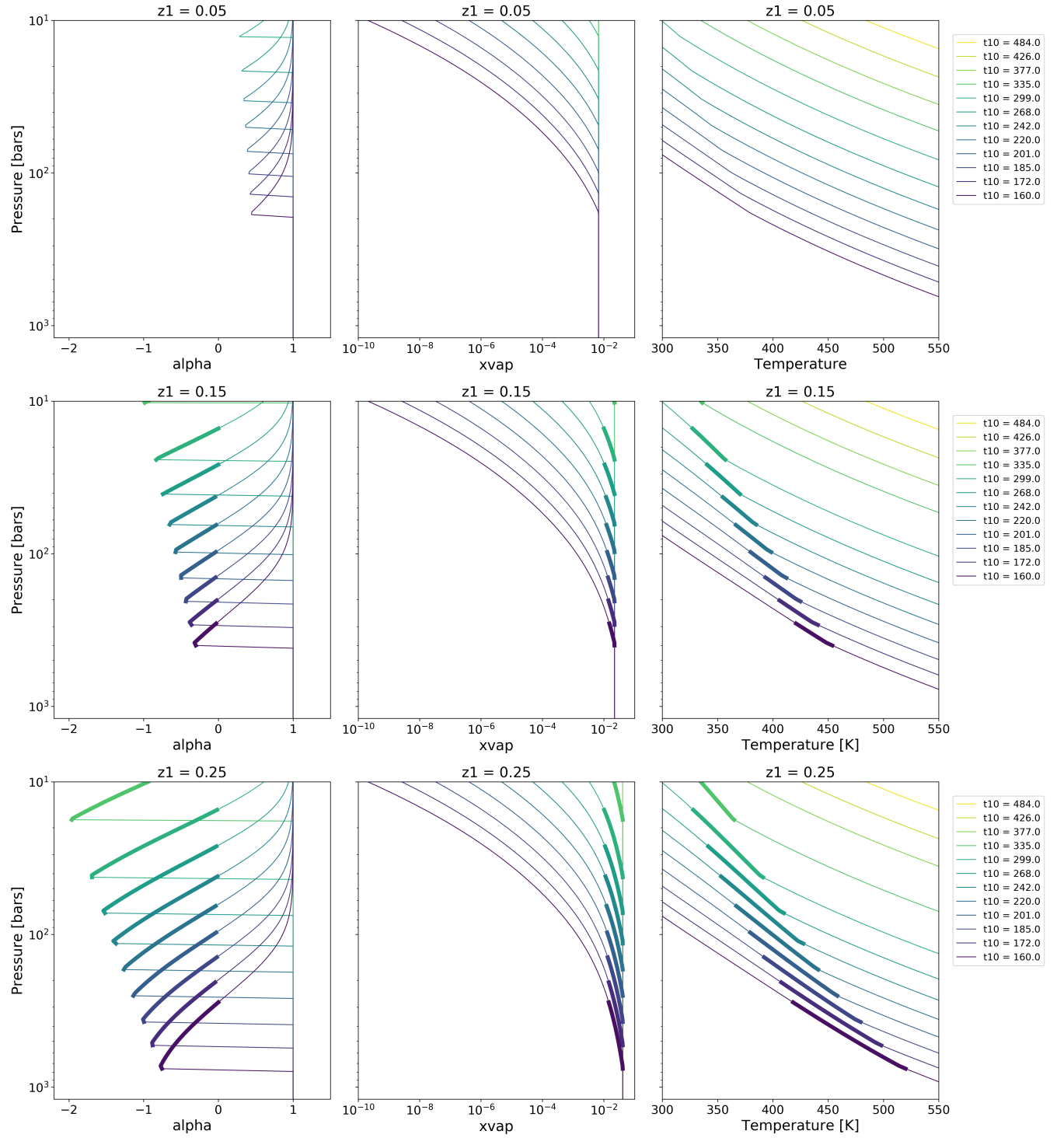


Figure 2.1: Need to add description here

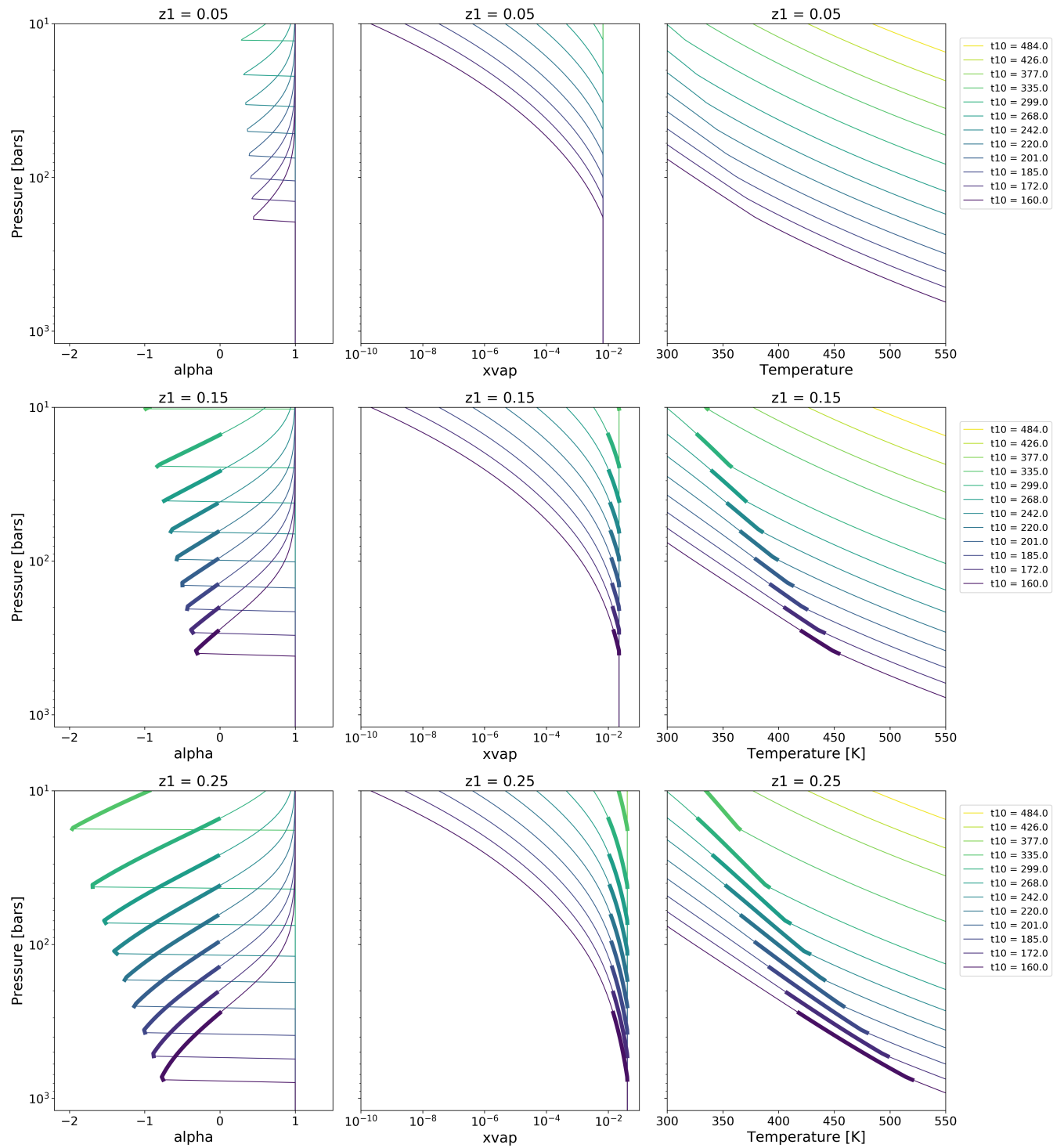


Figure 2.2: Need to add description here

3

Discussion and Conclusions

Appendix A

Some Ancillary Stuff

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