On the Importance of an Atmosphere

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A Thesissubmitted in partial fulfillment of

the requirements for the degree of

Master of Science

(Atmospheric and Oceanic Sciences)

at the

University of Wisconsin-Madison

December 2014

Thesis Declaration and Approval

I, Buckingham U. Badger, declare that this Thesis titled 'On the Importance of an Atmosphere' and the work presented in it are my own.

Buckingham U. Badger		
Author	Signature	Date

I hereby approve and recommend for acceptance this work in partial fulfillment of the requirements for the degree of Master of Science:

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Faculty Member	Signature	Date

Abstract

On the Importance of an Atmosphere

by Buckingham U. Badger

The atmosphere is a crucial part of everyday life by providing biological matter to respirate. Other planets in our solar system are characterized by a lack of atmosphere and thus remain unsuitable for life. Modeling a planet with no atmosphere resolves many of the issues plagued by modellers, especially pertaining to the issue of magnitudes of scales.

"Thanks to my solid academic training, today I can write hundreds of words on virtually any topic without possessing a shred of information, which is how I got a good job in journalism."

Dave Barry

This work is dedicated to the love of my life, Python.

Acknowledgements

There are many people that made this possible.

First, my advisor advised me very well.

Second, my colleagues and flatmates were very collegial.

Finally, my mom and dad have been parental to me.

Thanks to the data repository for providing data used in this thesis.

Acknowledgement is also made to the Department of Research for support under grants #1, 5, and 290.

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Abbreviations

CPR	**C**loud **P**rofiling **R**adar (aboard CloudSat)
MJO	**M**adden-**J**ulian Oscillation
TRMM	**T**ropical **R**ainfall **M**easuring **M**ission

Physical Constants

Speed of Light $c = 2.997\ 924\ 58 \times 10^8\ \mathrm{ms}^{-\mathrm{S}}$ (exact)

Symbols

a	distance	m
P	power	W (Js^{-1})
ω	angular frequency	$rads^{-1}$

Chapter 1

Introduction

1.1 Preface

This is Section 1.1 that provides all of the information about my background. Be sure to check out Subsection 1.1.1 as well for more information. Please find Figure 1.1 for more information.

1.1.1 Preface Postscript

Sometimes it is necessary to provide information about the background in segments.

1.1.2 Postpostscript

Other areas of interest.

Blah

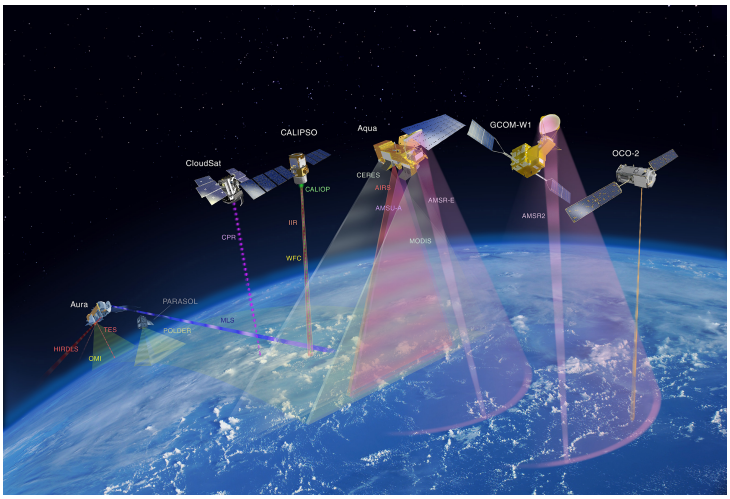

FIGURE 1.1: An illustration of the Afternoon Constellation (A-Train) satellite mission of NASA with the satellites' respective instruments. CloudSat is second from the left. Illustration courtesy of NASA.

Blah

	Header 1	Header 2
Category 1	Data 11	Data 21
Category 2	Data 12	Data 22

TABLE 1.1: We have some data here.

- In case you don't know LaTeX

1. Tanelli et al. (2008) is relevant to the material at hand Tanelli et al. (2008).

Appendix A

Appendix of Information

Here's information about stuff that isn't necessary in the regular chapters, but should be in the appendix.

Bibliography

Tanelli, S., S. L. Durden, E. Im, K. S. Pak, D. G. Reinke, P. Partain, J. M. Haynes, and R. T. Marchand, 2008: CloudSat's Cloud Profiling Radar After Two Years in Orbit: Performance, Calibration, and Processing. *IEEE Transactions on Geoscience and Remote Sensing*, **46**, 3560–3573, doi:10.1109/TGRS.2008.2002030.