Contents

Online Models

Preface

1 Humankind and Climate 1

Part I The Greenhouse Effect 7

2 Blackbody Radiation 9

3 The Layer Model 19

4 Greenhouse Gases 29

5 What Holds the Atmosphere Up? 43

6 Weather and Climate 57

7 Feedbacks 73

Part II The Carbon Cycle 87

8 Carbon on Earth 89

9 Fossil Fuels and Energy 103

10 The Perturbed Carbon Cycle 119

Part III The Forecast 133

11 The Smoking Gun 135

12 Potential Climate Impacts 153

13 Decisions, Decisions 173

Glossary 191

Index 197