CONTENTS

Acknowledgments xvii

Introduction 1

1. Nicolaus Copernicus and His Revolution 13

WHAT WE BELIEVED 17
THE COPERNICAN INNOVATION 20
THE EARLY RECEPTION OF *DE REVOLUTIONIBUS* 23
JOHANNES KEPLER 24
GALILEO 25

2. The Talmudic View of the Universe 27

THE SHAPE OF THE EARTH 27

THE PATH OF THE SUN 29

THE SOLAR SYSTEM 31

THE LENGTH OF THE SOLAR YEAR AND ITS RELIGIOUS CONSEQUENCES 32

THE MAIMONIDEAN DESCRIPTION OF THE UNIVERSE 34

TALMUDIC ASTRONOMY AND ANCIENT ASTRONOMY 37

PTOLEMAIC BIBLICAL COMMENTARY 38

3. David Gans and the First Mention of Copernicus in Hebrew Literature 42

EARLY INFLUENCES—EUCLID AND THE SUPERNOVA 44

THE FORMATIVE YEARS—CRACOW AND PRAGUE 45

MAHARAL AND THE FIRST JEWISH ALLUSION TO COPERNICUS 47

xii Contents

THE WORKS OF DAVID GANS 49

NEHMAD VENA'IM 50

TYCHO BRAHE 53

GANS'S RELUCTANCE TO ADJUDICATE BETWEEN SYSTEMS 58

THE INFLUENCE OF NEHMAD VENA'IM 61

ABRAHAM YAGEL 62

4. The First Jewish Copernican: Rabbi Joseph Solomon Delmedigo 66

BIOGRAPHY 66

SEFER ELIM 69

DID DELMEDIGO LEARN THE HELIOCENTRIC THEORY FROM GALILEO? 73

DELMEDIGO'S CONTRIBUTION 75

SPINOZA ON COPERNICUS 78

"Copernicus is the Son of Satan." The First Jewish Rejections of Copernicus 82

ISAAC CARDOSO 82

TUVIAH COHEN 87

COHEN AND NEW SCIENTIFIC KNOWLEDGE 88

ASTRONOMY IN MA'ASEH TUVIAH 89

COHEN AND THE JESUITS ON BIBLICAL PROOF TEXTS 96

TUVIAH COHEN IN CONTEXT 99

6. David Nieto and Copernicanism in London 106

NIETO'S EARLY LIFE 107

COPERNICUS IN MATTEH DAN 109

NIETO IN CONTEXT 112

ISRAEL OF ZAMOSC 116

LONDON AND THE COPERNICAN QUESTION, AGAIN 119

7. The Jewish Encyclopedias 125

RESHIT LIMMUDIM 125

THE RECEPTION OF RESHIT LIMMUDIM 128

THE PLAGIARISM OF RESHIT LIMMUDIM 130

SOLOMON MAIMON'S GIVAT HAMOREH 131

SEFER HABERIT 133

Contents xiii

BIOGRAPHY OF PINHAS HURWITZ 134

THE CONTENT OF SEFER HABERIT AND ITS EARLY PUBLICATION 135

COPERNICUS IN SEFER HABERIT 137

8. The Eighteenth Century: Jews and Copernicus in the Newtonian Era 144

RAPHAEL LEVI OF HANNOVER 147

LEVI AND LEIBNIZ 148

LEVI'S WORKS ON THE CALENDAR 150

LEVI'S STUDENTS 153

JUDAH HURWITZ 154

EYBESCHÜTZ AND EMDEN 155

HATAM SOFER 161

COPERNICUS AND THE STUDENTS OF HATAM SOFER 165

9. "I Have Written a Book For the Young People." David Friesenhausen's *Mosdot Tevel* 168

FRIESENHAUSEN'S EARLY LIFE 170

REFORM OF THE RABBINIC TRAINING PROGRAM 171

MOSDOT TEVEL 171

ASTRONOMY IN MOSDOT TEVEL 172

10. The Nineteenth Century: Copernicus without Hesitation 179

THE INDUSTRIAL REVOLUTION 179

NINETEENTH-CENTURY EXPERIMENTAL SUPPORT FOR THE COPERNICAN MODEL 180

COPERNICANISM IN HEBREW LITERATURE IN THE NINETEENTH CENTURY 181

ISAAC REGGIO AND THE CRITICAL ROLE OF SCIENCE IN BIBLICAL COMMENTARY 182

SAMSON RAPHAEL HIRSCH 184

ITTIM LEBINAH 186

HAYYIM ZELIG SLONIMSKI 188

SLONIMSKI'S LITERARY OUTPUT 190

HALLEY'S COMET AND KOCHAVA DESHAVIT 192

SLONIMSKI'S INFLUENCE 197

xiv Contents

11.	"Let Copernicus and Another Thousand Like Him Be	
	Removed From the World." Reuven Landau's Rejection	200

LANDAU'S EARLY LIFE 201

MAHALAKH HAKOHAVIM 202

BIBLICAL OBJECTIONS 205

SCIENTIFIC OBJECTIONS 206

TYCHO BRAHE AND SCIENTIFIC SKEPTICISM 208

REB ZADOK 211

SPIRITUAL OBJECTIONS 213

LANDAU'S SOURCES AND SEFER HABERIT 217

NIVRESHET LENEZ HAHAMAH 219

12. The Modern Period 224

CONVERSATION ON A TRAIN 224

CONVERSATION ON A BOAT 225

THE PRINCIPLE OF CHARITY 229

A NEW THEORY—EVOLUTION 231

DARWIN THE MESHUGA 232

JEWISH SECULARIZATION—ASTRONOMY WITHOUT GOD 235

THE NEW ASTRONOMY AND THE JEWS OF THE MIDDLE EAST 243

A JEWISH GUIDE TO THE NIGHT SKY 250

13. Relativity and Contemporary Jewish Geocentrists 254

PTOLEMY IN THE SPACE AGE 254

THE LUBAVITCHER REBBE AND THE WAGER 256

EINSTEIN AND THE NEO-GEOCENTRISTS 259

SHLOMO BENIZRI, THE GOVERNMENT MINISTER WHO REJECTED COPERNICUS 262

COPERNICUS IN THE CONTEMPORARY HAREDI WORLD 266

Conclusion 274

THE CURRENT STATE OF THE SCIENCE-AND-RELIGION DEBATE 274

PLURALIZE, LOCALIZE, HYBRIDIZE, AND POLITICIZE 276

THE POWER OF THE PERSONALITY 277

RELIGIOUS RATIONALITY AND SCIENTIFIC RATIONALITY 281

Contents xv

Appendix 287

DAVID FRIESENHAUSEN'S SABBATH ZEMIRAH IN PRAISE OF THE SOLAR SYSTEM 287

Notes 295

Bibliography 369

Index 385