

CONTENTS



PREFACE	xi
ACKNOWLEDGMENTS	xiii
NOTE ON CITATIONS	xv
INTRODUCTION. The object of the study	1
Part I	
PREVIOUS ANALYSES.	
Troubles with the originality of Copernicus	3
(1) The general questions: methodology, rationality, aesthetics, rhetoric and dialectics	5
(2) The particular questions: mathematical details	17
(2.1) Hanson's initial criticism of Copernicus	17
(2.2) Hanson's defense of Copernicus	19
(2.3) Criticism of Copernicus by historians of science	21
Part II	
IN DEFENSE OF COPERNICUS'S ORIGINALITY	31
Introduction	33
(1) General issues	37
(1.1) Copernicus's <i>problem-situation</i> and his readings	37
(1.2) Astronomy and an Integrity of philosophy	44
(1.3) Astronomy as a branch of mathematics and a <i>scientia</i> <i>media</i>	45
(1.4) Astronomy and rhetoric, dialectics, sapiential philosophy and theology	46
(2) Specific questions	50
(2.1) Certainty, probability and uncertainty of some natural claims about the Universe	50
(2.2) Copernicus's natural philosophy	52
(2.3) Copernicus's theory of motion	56
(2.4) Mathematical details	56
(2.4.1) The generalized correspondence principle	59
(2.4.2) Copernicus and the general correspondence principle	62
(2.4.3) The effect of slow changes in the ecliptical longitude of fixed stars	62
(2.4.4) The effect of the so-called first inequality	65

(2.4.5) Consequences	72
(3) Copernicus's dialogue and polemics with tradition	80
Introduction	80
(3.1) Simple characteristics of the essence of book I of <i>De revolutionibus</i>	80
(3.2) Did Copernicus provide any physical proof for the motion of the Earth?	85
(3.3) Copernicus's hypothetical realism, mathematico- physical hypotheticism, old Greek tradition and mitigated scepticism of the Renaissance	92
(3.4) Whom did Copernicus fear and for what reason?	95
(3.5) Why did Copernicus apply rhetorical and dialectical argument?	98
(3.6) Two additional, nevertheless crucial issues	99
(3.7) Copernicus's alleged conservatism and his real originality	106
(3.8) General conclusion	111
 Part III	
APPENDICES	115
 (1) COPERNICUS'S HERITAGE	
SOME EPISODES AND ISSUES IN NATURAL PHILOSOPHY AND METHODOLOGY SINCE THE ANCIENT GREEKS TO COPERNICUS'S TIMES	117
(1.1) The Times of the Ionian Natural Philosophers to Plato's Epoch	117
(1.2) Plato	121
(1.3) Aristotle	131
(1.4) Ptolemy	137
(1.5) The renaissance of knowledge in the Islam Middle Ages	141
(1.6) The Christian Middle Ages	145
(1.6A) The Early Middle Ages	145
(1.6A.1) St. Augustine (354–430)	146
(1.6B) The Middle and Late Medieval Period	147
(1.6B.1) St. Albert the Great (ca. 1200–1280)	149
(1.6B.2) St. Thomas Aquinas (1228–1274)	152
(1.7) Platonic and Stoic tripartite classification of philosophy and tradition	155
(1.8) The tradition of Plato and Ptolemy regarding a hypothetical character of physics and an epistemological character of mathematics	157
(1.9) Jean Buridan, the Buridanists' theory of motion and related questions	163
(1.10) 15 th and 16 th -century philosophy	169

(1.10A) Cracow University	169
(1.10B) Italy	183
(2) TWO IDEOLOGIES IN THEIR HISTORICAL CONTEXTS: MODERN CHRISTIAN ARISTOTELIANISM, AND BIBLICAL LITERALISM REGARDING COSMOLOGICAL MATTERS	
	191
(3) THE FATAL OVERSIGHTS OF PIERRE DUHEM REGARDING COPERNICUS	
	211
(4) WHY HAVE SOME INTERPRETERS OF COPERNICUS'S ACHIEVEMENTS FOR SO LONG OVERLOOKED HIS APPLICATION OF THE THEORY OF IMPETUS?	
	218
(5) COPERNICUS AND THE CASE OF THE THEORY OF IMPETUS: HOW CAN EVEN SKILLED TRANSLATORS DESTROY CRUCIAL MEANINGS?	
	221
REFERENCES	233
INDEX OF PERSONS	275
INDEX OF PLACES	289
INDEX OF SUBJECTS	291
PLATES	