

CONTENTS

	PAGE
ILLUSTRATIONS	vii
PREFACE	ix
INTRODUCTION	xi

PART ONE

MAGIC SQUARES IN EARLY CHINA AND THE WEST

CHAPTER 1

PYTHAGORAS, PLATO, AND THE MAGIC SQUARE

Pythagoras and the Pythagoreans—How Pythagoras Could Have Been Exposed to Magic Squares—The School of Pythagoras and Secret Societies—The Dark Ages—The Monad—Archetypes—Plato, the 27x27 Magic Square, and the Calendar—The Numbers of the Calendar—The Importance of Art as a Record of History—Conclusion	1
--	---

CHAPTER 2

THE LANGUAGE OF NUMBERS AND THE MAGIC SQUARE

A New Definition of Magic Squares in the Luo Shu Format—Numbers of Significance—Time and Space—Number Seven	13
---	----

CHAPTER 3

THE RIGHT ANGLE TRIANGLE AND THE MAGIC SQUARE

What Is a Gnomon?—The Gnomon and the Calendar—A Chinese Fortnight, a Unit of Measurement—Chinese Glyph for The Middle: Establishing the Center—The Gnomon and the Greatest Experiment—The <i>Zhou Bi Suan Jing</i> , the Oldest Math Book Known—The Pythagorean Theorem and the Quincunx—The Right Angle Triangle in Art—The Compass and the Carpenter’s Square—A Right Angle Triangle in Every Luo Shu Magic Square—The Triabolo and the Magic Square—Conclusion	19
---	----

CHAPTER 4

AGRICULTURE, ASTRONOMY, AND THE MAGIC SQUARE

Agriculture, Evolution, and Prosperity—Preparing the Fields with Fire and Water—Writing and Cosmology in Early China—Symbols for Heaven and Earth—The Astronomical Instruments	39
--	----

CHAPTER 5

THE ORIGIN OF THE LUO SHU MAGIC SQUARE

The Origin of the Luo Shu—The Great Plan—The Significance of the Luo Shu—The Unique Characteristics of a Luo Shu Magic Square—The Evolution and Travels of the Luo Shu	59
--	----

CHAPTER 6	
THE LOST SYMBOL AND THE MAGIC SQUARE	
Yā, the Lost Symbol—What Makes a Symbol Significant?—Chinese Glyphs Related to Math and the Luo Shu—The Significance of the Yā Character—The Yā Shape, the Square, and the Circle in Chinese Cosmology—The Yā Shape in Early Christian Art and Architecture—The Problem with the Yā Shape	65
CHAPTER 7	
ALCHEMY AND THE MAGIC SQUARE	
Magic Squares and Planetary Correspondences—The Mandala	75
CHAPTER 8	
CHRISTIANITY AND THE MAGIC SQUARE	
The Square, The Circle, and the Right Angle Triangle: Symbols of Sacred Geometry—Early Christian Iconography—The Right Angle, aka the Gammadia, and Its Use in Art and Architecture—Sacred Geometry and the Illuminated Manuscript Cover—The Lindau Gospels, Upper Cover—Mystical Mathematical Symbolism and the Lindau Gospels—The Coptic Gospels—Gospels of Theodelinda—Chinese Influence on Early Christian Art	81
CHAPTER 9	
TEMPLE BUILDING AND THE MAGIC SQUARE	
Architectural Design of Early Christian Churches—The Italian Renaissance—Leonardo da Vinci, Church Drawings—Luca Pacioli	105
CHAPTER 10	
ART AND THE MAGIC SQUARE	
Albrecht Dürer and <i>Melencolia I</i> —Athanasius Kircher and <i>Arithmologia</i> —Kircher and the Chinese—Pythagorean Symbolism—Vincent Carpaccio and <i>The Ambassadors Depart</i> —The Cosmology of the Quincunx—Hrabanus Maurus and <i>De laudibus sanctae crucis</i> —Poem 9—The Obelisk and Christianity—Hans Holbein and <i>The Ambassadors</i> —The Great Age of the European Sundial—The Cosmati Pavement—Peter Apian’s Pythagorean Exercise—Conclusion	117
PART TWO	
COMPLETE SET OF MAGIC SQUARES IN THE LUO SHU FORMAT	
ORDER 3 THROUGH ORDER 27	143
APPENDIX	157
NOTES	159
BIBLIOGRAPHY	168
INDEX	173

Illustrations

1	The jade <i>bi</i> disc and <i>bi</i> disc overlaid with 3x3 grid	xvii
2	The Great Yu	xviii
3	Examples of the use of quincunx sacred geometry, 7 th –11 th century	xix
4	Jade cong tube	xxi
5	The <i>Zhou Bi Suan Jing</i> , the oldest known math book	xxii
6	Map of the Silk Road	4
7	The gnomon	18
8	Chinese seal character for middle	22
9	The <i>Zhou Bi Suan Jing</i>	24
10	Artist rendering of church drawings by Leonardo da Vinci	25
11	Cruciform of odd numbers, the circle, and the square	26
12	Swastika used in art from Mesopotamia	27
13	TLV bronze mirror	28
14	The compass and the carpenter's square from the tomb of Fan Yen-Shih	29
15	Bronze bell and tomb brick	31
16	The Great Yu	40
17	Chinese multiple-tube seed drill	41
18	Chinese junk ship	42
19	The Holy Field	48
20	Jade cong tube	52
21	The Circumpolar Constellation Template	53
22	Jade <i>bi</i> disc and jade <i>bi</i> disc with 3x3 grid	54
23	The Great Yu, detail	56
24	Tibetan mandala	60
25	Theodoric's Mausoleum, Ravenna, Italy.	69
26	John the Evangelist, Book of Kells	71
27	Bronze inscription	72
28	Bronze inscription	72
29	Quincunx ground plan	74
30	The magic square template for church design	74
31	Egyptian altar cloth	82

32	Coptic hanging	83
33	Artist rendering of church ground plan designs by Leonardo da Vinci and Donato Bramante	84
34	Theodoric's Mausoleum and detail	85
35	Church mosaic of Christ blessing the loaves and fish, Sant' Apollinaire Nuovo, Ravenna	85
36	Lindau Gospels and the Cattolico di Stilo church in southern Italy	86
37	Lindau Gospels, upper cover, and the upper cover with the cross and square template	88
38	The Lindau Gospels, detail of upper cover	89
39	The Coptic Gospels, front and back covers	93
40	The Coptic Gospels, detail of front cover with the 5x5 magic square	94
41	The Coptic Gospels, detail of upper portion of front cover	96
42	Lindau Gospels, lower cover	96
43	The Coptic Gospels, back cover and the 5x5 magic square	97
44	The Gospels of Queen Theodelinda	100
45	Mosaic, Basilica of San Vitale, Ravenna	103
46	Mosaic, An Apostle, Mausoleum of Galla Placida, Ravenna	104
47	<i>Ming Tang</i> temple	108
48	Armenian church demonstrating the quincunx ground plan	109
49	Bramante's ground plan for St. Peter's Basilica and the 3x3 grid	110
50	Church drawing by Leonardo da Vinci (reproduced by author)	112
51	<i>The Portrait of Fra Luca Pacioli</i> by Jacopo de' Barbari	114
52	Drawing by Leonardo da Vinci from <i>De divina proportione</i> by Luca Pacioli	115
53	Albrecht Dürer, <i>Melencolia I</i>	116
54	<i>Melencolia I</i> , detail	119
55	Athanasius Kircher's frontispiece to <i>Arithmologia</i>	121
56	Ferdinand Verbiest and the Luo Shu from <i>Astronomia Europaea</i>	124
57	Athanasius Kircher in his museum, College of Rome	125
58	Vincent Carpaccio, <i>The Ambassadors Depart</i>	126
59	Vincent Carpaccio, <i>The Ambassadors Depart</i> , detail	127
60	Hrabanus Maurus, Poem Number Nine from <i>De laudibus sanctae crucis</i>	128
61	Saint Peter's Basilica, by Piranesi	134
62	Hans Holbein, <i>The Ambassadors</i>	135
63	Hans Holbein, portrait of Nicolas Kratzer	137
64	Westminster Abbey, Cosmati Pavement	138
65	Hans Holbein, <i>The Ambassadors</i> , detail	139
66	Hans Holbein, <i>The Ambassadors</i> , detail	140