

Contents

Preface xiii

Chronology xv

Credo: "What I Believe" xxi

Part I. The Personal and Family Spheres 1

VITAL INFORMATION: CERTIFICATES IN FACSIMILE 3

Birth Certificate 3

Report Card 4

Doctoral Certificate 5

Nobel Prize Certificate 6

U.S. Naturalization Certificate 8

Death Certificate 9

BIRTH INFORMATION 9

ARCHIVES 10

Helen Dukas 11

Otto Nathan 12

AWARDS, HONORARY DEGREES, AND HONORARY MEMBERSHIPS IN FOREIGN SOCIETIES 13

Awards, Medals, and Miscellaneous Honors 13

Honorary Degrees 14

Sampling of Honorary Memberships in Foreign Academies of Sciences and Societies 15

CAREER 17

List of Years, Job Titles, and Employers 17

Employment History 18

Places of Employment 18

CITIZENSHIPS AND IMMIGRATION TO THE UNITED STATES 22

DOMICILES 26

EDUCATION AND SCHOOLS ATTENDED 28

Educational Background 28

Schools and Universities Attended 30

EINSTEIN PAPERS PROJECT (EPP) AND *THE COLLECTED PAPERS OF ALBERT EINSTEIN (CPAE)* 30

Prehistory of the EPP 31

Early Days 32

viii Contents

The Project Gets Under Way	33
The Boston Offices	33
The Move to Caltech	35
CPAE Volumes and Editors	36
FAME	37
The Media	37
Art and Commercialism	38
FAMILY	44
Family Relationships	44
Grandparents and Parents	48
Sister: Maria (Maja) Winteler-Einstein—Husband, Paul Winteler	50
Family No. 1 (Consisting of Einstein, Mileva, and Their Offspring)	51
Family No. 2 (Consisting of Einstein, Elsa, and Elsa's Two Daughters)	60
FRIENDS	65
Michele Besso	65
Max and Hedwig Born	66
Lucien Chavan	67
Jakob Ehrat	68
Paul Ehrenfest	69
Elisabeth, Queen of the Belgians	70
Marcel Grossmann	70
Conrad Habicht	71
Hans Mühsam	72
Georg Nicolai	73
Janos Plesch	74
Romain Rolland	75
Maurice (Moritz) Solovine	76
Winteler Family	76
Stephen Wise	77
Heinrich Zangger	79
HEALTH	80
Health Exam	80
Health Problems	80
MYTHS AND MISCONCEPTIONS	81
Asperger's Syndrome	81
Bad Student	81
Communist	82
Could Have Gone Fishing	82
Responsible for the Atom Bomb	83
Left-Handedness	83

Mileva Marić as Alleged Collaborator	84
Only Ten or Twelve People Can Understand Relativity Theory	85
Political Naiveté	86
Vegetarian	87
Verification of General Relativity Theory Was Unimportant to Einstein	87
Was Only a Theorist	88
PASTIMES	89
Hiking	89
Music	89
Reading	91
Sailing	92
Writing Poems and Aphorisms	92
ROMANTIC INTERESTS: ACTUAL, PROBABLE, AND POSSIBLE	98
Marie Winteler	99
Betty Neumann	100
Else Kotányi Jerusalem	102
Estella Katzenellenbogen	102
Margarete Lebach	103
Ethel Michanowsky	103
Toni Mendel	104
Margarita Konenkova	105
Johanna Fantova	106
SECRETARIES	107
TEACHERS	107
At the Aargau Cantonal School	107
At the Swiss Federal Polytechnical School (ETH)	108
At the University of Zurich	108
TRAVELS AND TRAVEL DIARIES	109
America, 1921	109
Asia, 1922–1923: The Far East and Palestine	111
Spain, 1923	115
South America, 1925	116
Back to America, 1930–1931	118
Oxford, May 1931	119
America, 1931–1932	120
America, 1932–1933	121
DEATH	122
An Account of Einstein’s Last Days by Helen Dukas	123
Removal of the Brain	126
Last Will and Testament	127

Part II. A Life in Science 133

ANNUS MIRABILIS 135

ASSISTANTS 135

COLLABORATORS 138

COLLEAGUES 146

Friedrich (Fritz) Adler 146

Niels Bohr 147

Marie Curie 147

Arthur Stanley Eddington 148

Kurt Gödel 149

Fritz Haber 150

David Hilbert 151

Paul Langevin 151

Max von Laue 152

Philipp Lenard 152

H. A. Lorentz 153

Walther Nernst 154

J. Robert Oppenheimer 155

Paul Painlevé 155

Wolfgang Pauli 156

Max Planck 157

Willem de Sitter 158

Arnold Sommerfeld 158

CONCEPTS 159

Action-at-a-Distance—Quantum Teleportation 159

Arrow of Time 160

Asymmetric Theory 160

Atoms 161

Blackbody (Thermal) Radiation 162

Bose-Einstein Condensate 164

Bose-Einstein Statistics 164

Brownian Motion 165

Canal Rays 166

Cosmological Constant 167

Cosmology 169

Determinism 171

Distant Parallelism 171

$E = mc^2$ 172

Ehrenfest's Paradox 173

Einstein-Podolsky-Rosen (EPR) Paradox	174
Einstein-Rosen Bridge	175
Equipartition Theorem	176
Fluctuations, Theory of	177
Ghost Field	178
Gravitational Waves	178
Gravito-Magnetism	179
Hole Argument	180
Length Contraction	181
Metric	182
Overdetermination and the Unified Field Theory	183
Photoelectric Effect	184
Photon (Light Quantum)	185
Principles of Relativity Theory	186
Quantum Mechanics	189
Radiometer Effect	190
Relativity of Simultaneity	190
Spacetime	191
Specific Heat Capacity	192
Third Law of Thermodynamics	193
Time	194
Time Dilation	195
Wave-Particle Duality	195
DOCTORAL DISSERTATION	197
INFLUENTIAL SCIENTIFIC FOREBEARS AND CONTEMPORARIES	197
KINETIC THEORY	198
LECTURES, MAJOR SCIENTIFIC	200
Published Lectures	200
Unpublished Lectures	201
NOBEL PRIZE	201
PATENTS AND INVENTIONS	202
PHILOSOPHY OF SCIENCE (CONTRIBUTED BY THOMAS RYCKMAN, STANFORD UNIVERSITY)	203
QUANTUM THEORY	205
RELATIVITY THEORY	208
Special Relativity	208
General Relativity	211
Anti-Relativity Campaign	216

RIVALS	216
SCIENTIFIC PAPERS	219
SCIENTIFIC SIDELIGHTS	219
SOLVAY CONFERENCES	221
THOUGHT EXPERIMENTS	222
UNIFIED FIELD THEORY	224
Early Unified Field Theories That Influenced Einstein	226

Part III. Identity and Principles 229

CIVIL AND HUMAN RIGHTS	231
EDUCATION: EINSTEIN'S VIEWS	232
"The Nightmare"	232
"Uproar in the Lecture Hall"	233
JEWISH IDENTITY AND TIES	234
Allegiances, Old and New	234
Catalyst: The Role of Kurt Blumenfeld	235
The Cultural Zionist Ideal	236
Hebrew University of Jerusalem	237
The Jewish Question and Its Resolution	238
ORGANIZATIONAL TIES	241
Olympia Academy	241
Bund Neues Vaterland (Association for a New Fatherland)	242
International Committee on Intellectual Cooperation	243
Emergency Committee of Atomic Scientists	244
POLITICAL CONTEXTS	246
The First World War and the Weimar Republic, 1914–1932	246
Hitler in Power and the Second World War, 1933–1945	252
Postwar and Cold War, 1946–1955	257
POLITICAL PHILOSOPHY	263
Pacifism	263
Socialism	266
World Government	266
RELIGION	268

Appendixes 269

Appendix A. Select Books and Documentaries	271
Appendix B. Copyright, Licensing, and Permissions	281
Appendix C. Select Annotated Bibliography	283
References	327
Index	333