

Contents

Part I Olivier and Meteor Astronomy 1884–1936

Virginia	3
Fortunes of War and Peace	3
Charles William Pollard	3
George Wythe Olivier	4
Katharine Roy Pollard Olivier	6
George Olivier’s Career After the War	8
The Lost Cause Psychology	9
Virginia’s Astronomer	10
Ormond Stone and Gravitational Astronomy	10
Classical Astronomy	12
Classical Astronomy as a Scientific Style	12
Some of Ormond Stone’s Accomplishments	13
Educator and Mentor of Future Prominent Men	15
Virginia’s Leander McCormick Observatory	16
Young Charles	16
Life in Charlottesville Circa 1890	17
First Meteor Watch	18
The 1899 Leonid Meteor Shower	18
Leonids and Other Meteor Showers	18
The 1899 Leonid Shower	19
Postmortem	22
Damage to Public’s Trust in Professional Astronomy	22
Portrait of the Young Man as an Astronomer	23
A Research Plan Conceived in High School	24
Astronomical Activities in High School	25
Astronomical Work During Undergraduate School	25
Graduate School Years 1905–1908	27
Sojourn at Lick Observatory	30
Assigned Duty: Comet Photography	32

Double Stars	33
Mira	33
Meteors	34
Summary of a Hectic Internship	34
Sad News	35
Doctor of Philosophy	35
Nature of an Orbit	36
Charting the Sky Position of a Meteor Shower Radiant Is More Difficult Than Charting a Comet's	36
A First Reform for Meteor Science: Criteria for a Meteor Radiant	36
Another Reform	37
175 Orbits	37
His Career's Meteor Results	38
Why Did Meteoric Science Become a Lifelong Passion?	38
References	39
Enrollment Began	41
Starting Out	41
Astronomy, the University, and Professor Olivier	41
First Academic Post	42
Friends at McCormick Observatory	43
McCormick Observatory Colleagues	44
In Summary	50
Society for Practical Astronomy	50
Society for Practical Astronomy and How the American Meteor Society Began	51
First Amateur Members of the Hybrid SPA-AMS	53
American Astronomical Society	57
Early History of the AAS	57
The Luminous Meteor Committee	58
Charles P. Olivier, the AASA, and the American Meteor Society	60
Chairman Olivier's Program	62
Setting the Agenda for Future Meteor Research	64
R.K. Young's Gnomonic Star Maps	67
Maps and Publicity	67
Rewards from Enlisting the Assistance of AAS Members	69
Academic Colleagues Contributed	69
Summary	71
American Association of Variable Star Observers	71
Introduction—AAVSO's Origin	71
Simultaneous Memberships	71
Olivier's Invitation to AAVSO Members	74
AAVSO Members Responded	75
Some AAVSO Members Join the AMS	76
Dr. Olivier Returned the Favor	77

The Weather Bureau	79
Predecessor of the Weather Bureau	79
Signal Corps Observers Reported Meteors	79
Scientific Advisor to Corps' Chief Signal Officer	80
Cleveland Abbe and Meteor Science at the Weather Bureau	80
Monthly Weather Review as a Platform for Meteor Studies	81
Abbe's Support for the AMS	82
Hydrographic Office of the US Navy	83
Introduction	83
Brief History of the Hydrographic Office	84
Matthew Fontaine Maury, Lt., US Navy: Visionary First Director of Hydrographic Office	84
The Hydrographic Office Aids the AMS	85
New Members Join the American Meteor Society, 1915–1918	87
Membership Roster and Statistical Summary for the Years 1915–1918	89
Statistical Summary of the 1915–1918 Membership	89
Roster of Members	89
Key and Abbreviations	90
Outcomes from Olivier's Membership Efforts 1911–1918	94
References	95
The First Assignment	99
Trans-Atlantic Controversy	99
Criticism from England	99
Olivier's Retort	101
Help from Two Senior Colleagues	101
The Best Olivier Could Manage	102
Status of the Controversy in 1914	103
W.F. Denning, A.S Herschel, and the Stationary Radiant Concept	104
Denning: In the First Rank of Observational Astronomers	104
Denning's Meteor Career	105
Alexander Stewart Herschel (1836–1907)	107
The Herschel–Denning Collaboration	107
Olivier's Analysis of Factors that Created Erroneous Radiants	108
Olivier Used Informed Approach to Reduce His Own Meteor Plots	110
First Assignment: Discredit Stationary Radiants	110
Olivier's Earliest Application of Stringent Radiant Definitions	110
Results of the AMS' First Assignment: 126 Parabolic Orbits	111
Aligning Professional Astronomy Behind Stringent Radiant Definitions	113
Meteor Committee's Radiant Criteria Recommendations	114
1920 Monograph: "349 Parabolic Orbits"	115
Arguments Against SRs	116
Arguments Against SRs in <i>Meteors</i> (1925)	117
AMS Report 1919–1925 (1929)	118

Not Persuaded by Olivier's Arguments and AMS' Findings	
Against SRs (1911–1925)	119
Top Achievers 1914–1925	120
Top Achievers in 349 PO	120
Top Achievers in AMS Report for 1919–1925	121
References	121
Postwar Years 1919–1929	123
Challenges for Olivier and the American Meteor Society	123
Olivier's Wartime Years	123
Olivier Urged Observers to Resume Meteor Work After Their War Duties	124
Downturn in Membership	124
Career and Family Demands as Reasons Why AMS Membership Declined 1921–1925	125
Realm of the Director	136
So, Why Did AMS Membership Decline in the Early 1920s?	136
Leadership Style also Had a Role	140
Rise of Astrophysics in US Astronomy	141
Astrophysicists' "Family Trees"	141
Astrophysicists Struggled to Find the Relevance of Meteoric Astronomy	146
In Summary, How Would Astrophysicists Study Meteors?	147
Membership Roster 1919–1929	148
Statistical Summary of the 1919–1929 Membership	148
Description of the 1919–1929 Roster	150
Advances Made by the American Meteor Society 1919–1929	155
Astrophysical Discoveries as a Competitor to Meteor Science	155
Organizational Advances: Improved Communication with Members and Other Amateur Astronomers	156
Olivier's Public Lectures	157
Amateurs Return to Meteor Work	157
How AMS Members' Meteor Data Were Used	159
Radiants	159
Meteor Rates	161
Telescopic Meteor Magnitudes	162
Long-Enduring Meteor Trains	164
Meteor Heights	165
Fireballs	166
Members' Productivity 1919–1929	169
References	170
1930s—The Best of Times	173
The Best of Times During the Worst of Times	173
The Depression Years in the USA	173

Meteor Astronomy Appealed to the General Public	174
Academics Adopted Meteor Astronomy	175
Olivier Was Overwhelmed by Reported Data	175
The Man at Midlife	176
Home	176
Loved Ones	176
The Observatory Director's Lifestyle	180
Rest and Recreation in the Old Dominion	183
Religious and Political Convictions	184
The Astronomer at Midlife	184
Double and Variable Star Research Work	184
Professional and Graduate-Level Astronomers' Attitudes Toward Meteoric and Stellar Astronomy	189
Presentation of Meteor Results to Professional Organizations	191
Formal Honors Awarded	192
"Neighbors"	192
Organizing Flower Observatory Staff for the Leonids	194
Staffing and Work at Flower Observatory 1930–1936	195
Observatory Staff and Leonid Shower Research 1930–1936	195
Hiring Human Computers Doris Wills and Clarence Cleminshaw	196
Summary in a Metaphor	198
Membership Roster and Statistical Summary for the Years 1930–1936	198
Statistical Summary of the 1930–1936 Membership	199
Description of the 1930–1936 Roster	201
How the Meteor Quest Was Won	213
How Olivier Instructed American Meteor Society Members	213
Regional Groups: Coordination at a Distance	214
Summary	223
What the American Meteor Society Accomplished	223
Introduction	223
"Out" with an Old Research Objective	224
"In" with New Research Objectives for the AMS in the 1930s	225
Plan for This Chapter	225
New Radiants Determined 1930–1936	226
Meteor Heights	227
Long-Enduring Trains (LETs), a Shift of Dr. Olivier's Priorities	230
Telescopic Meteor Observations	232
Meteor Rates	232
Fireball Observations	236
Fireball Reports 1930–1936	236
Members' Innovations	238
New Developments	241
Chapter Summary	242
Citizen Scientists Caught Meteor Fever	243

Olivier's Publicity Efforts and Results	243
Citizen Science and Crowdsourcing in the 1930s	244
Olivier's Publicity Efforts and CG's Results 1930–1934	244
Crowdsourced Fireballs.	246
Summary of the 1930s Chapter.	246
References	247
Meteor Astronomy at Home and Abroad	251
Contemporary Meteor Organizations in the USA	251
C.C. Wylie and Midwest Meteor Association: Challengers from the Midwest	251
Cosmological Issues as a Rationale for Reticle Use	259
Dr. Thomas C. Poulter and His Antarctic Meteor Program.	260
Harvard College Observatory Meteor Programs	262
Society for Research on Meteorites.	268
Summary	270
Outside the USA: A Survey of Meteor Astronomers and Organizations	270
Introduction.	270
Argentina	270
Belgium	271
Canada	272
Czechoslovakia.	273
England.	274
Estonia	275
France.	275
Germany.	276
Italy	280
Japan.	281
New Zealand.	281
South Africa	281
Union of Soviet Socialist Republics	282
Olivier's Influence Abroad	282
References	283
Summing Up	287
Summing Up: Olivier at Midlife.	287

Part II The Stalwarts' Biographies

The Stalwarts	291
Who Were the Stalwarts?	291
Comparison of Stalwarts with Other Active AMS Members.	291
Examining Chronological Age Issues	292
Stalwarts' Occupational Data	293
Other Reasons the Stalwarts Continued in Meteor Work	293

Associated or Enrolled 1900–1918	297
N.P. Ball	297
Grace H. (Bingham) Bessey	298
Donald Brooks	301
F.J. Carr	304
Robert M. Dole	306
Family and Early Life	306
Early Meteor Watches and Variable Star Work	308
Variable Star Observations	309
Career with the Weather Bureau	309
Dole’s Support for Olivier’s Goals	310
A Lifetime of Contributions to Meteor Astronomy	312
Kathleen M. Hempel	313
H. I. Johnson	315
John Koep (1898–1949) and Philip Trudelle (1897–1966)	316
Summary	319
G.F. Kronenberger (1885–1926), R. Lambert, and W. Pattison	320
Lincoln Lapaz	321
Howard H. Martin (1889–1944) and John Whitaker Crain (1887–1953)	324
Personal History	324
Meteor Observation Career	325
J.M.T. Partello	326
Meteor Career	327
J.L. Peters	328
T.K. Tomkins	329
References	330
Enrolled 1919–1929	337
Vincent Anyzeski	337
F.L. Bradley	338
Robert Brown	339
Sterling (1901–1945) and Mildred (1906–?) Bunch	340
J.J. Conboy, Jr.	342
B.C. Darling	343
Mrs. W.H. Edwards	344
C.B. Ford	345
A.J. Klapperich	345
A.S. Lawrence	346
J.H. Logan	346
F.F. Marsh	347
R.A. McIntosh	348
Oscar E. Monnig	351
Miss V.J. Niebuhr	354
A.L. Peck	355
Blakeney Sanders	356

R.C. Shinkfield	357
F.W. Smith	358
I.L. Thomsen	359
Miss M.E. Trimmier	360
Goodrich Watkins	362
B.S. Whitney	363
References	364
Enrolled 1930–1936.	371
Russell Anderson	371
L.E. Armfield	372
Introduction.	373
Early Years.	373
Armfield’s Astronomy Career	374
Intensified Activity in 1934.	375
1935: Milwaukee Hosted Drs. Shapley and Olivier	377
1935: The Year the Wisconsin and Missouri Regions Joined Forces	378
AAAA “Notes” in <i>Astronomical Discourse</i> and the <i>MAS Bulletin</i>	379
1936–1937: Armfield’s Final Years of AMS Involvement	380
Unfortunate Events	380
Legacy in Wisconsin.	381
Other Aspects of Armfield’s Life in Wisconsin	382
Armfield’s Later Life Story	382
L. Arslanian	383
Stewart R. Baker.	384
James L. Black	384
Edward F. Bowman	385
Milton L. Braun	385
Herbert A. Burns	388
E.E. Friton	389
Murray Geddes	393
K.E. Gell	395
J.W. Graham.	396
Gordon Green	397
Edward A. Halbach.	399
Family History	399
Making of an Engineer	400
Astronomy: A Scientific Pastime	401
Variable Stars	402
Meteors and Technology.	402
Academic Career at Marquette University.	405
The Professor Married	405
Scientific Work During Solar Eclipses	405
More Participation in Scientific Aspects of Astronomy.	407
Another Service to Amateur Astronomy	408

Employment After Marquette University	408
Volunteering After Retirement	409
William L. Holt	409
Hideo Inouye	410
Mary L. Jewett	413
Jack T. Kent	414
Texas A&M Astronomer.	415
Mohd. A.R. Khan	416
George P. Kirkpatrick	419
J.H. Kusner	421
Louise M. Larrabee.	423
Joseph Leerman	427
Eppe Loreta	428
R.W. Miller.	432
Stuart L. O’byrne	433
P.O. Parker	436
J. Fraser Paterson	438
W.J. Persons	439
Frank Preucil	442
Hope S. Pruett	444
J. Hugh Pruett	446
Family Background and Early Life.	446
AMS’ Needs and Personal Interests Coincide	447
Educator and Publicist	448
“Act as a Local Director or Leader”	449
An Appreciation	450
G.W. Ridley	451
J. Wesley Simpson	452
G. B. Skinner	459
Claude H. Smith	460
Comet Country.	460
And Meteors Too	460
Autodidact	462
A Life in Central New York’s Lake District.	462
H. Stackpole	463
William R. Stone	464
Octogenarian Meteor Watcher.	465
Sally Urquhart.	466
Paul S. Watson	467
J.D. Williams and the Arizona Observers	471
Biographical Sketch	471
Arizona Meteors	472
The Arizona Observers	473
Williams’ Academic Career After the Leonid Epoch	475

Wartime Consultant	476
Research ANd Development.....	477
R.H. Wilson, Jr.	478
References	480
Erratum to: Virginia	E1
Appendix A: American Meteor Society Data Published After 1936	483
Appendix B: Guide to Sources American Meteor Society Annual Reports	485
Index	489