

Appendix A

American Meteor Society Data Published After 1936

The following reports contain data recorded by the American Meteor Society's members during the Society's first 25 years of existence, 1911–1936. They were published after 1936 and some were after Charles Olivier's retirement in 1954. Putting members' data into print so many years after it was acquired demonstrated Charles Olivier's appreciation for their hard work and his dedication to meteor science.

Olivier, C.P., Long Enduring Meteor Trains, *Proceedings of the American Philosophical Society*, Volume 85, No.2, January, 1942.

Olivier, C.P., Long Enduring Meteor Trains, Second Paper *Proceedings of the American Philosophical Society*, Volume 91, No.4, October, 1947

Olivier, C.P., Long Enduring Meteor Trains and Fireball Orbits, Third Paper, *Proceedings of the American Philosophical Society*, Volume 101, No. 3, June, 1957

Olivier, C.P., Catalog of Hourly Meteor Rates, *Smithsonian Contributions to Astrophysics*, Volume 4, No.1, 1960.

Olivier, C.P., Catalogue of Fireball Radiants, *Flower Observatory Reprint No. 146*, 1964

Olivier, C.P., Long Enduring Meteor Trains, Fourth paper, *Flower and Cook Astronomical Observatory, Reprint No. 189*, 1969.

Appendix B

Guide to Sources American Meteor Society Annual Reports

For 1911–1913: All members’ names and observational statistics are from Olivier, Charles P. “126 Parabolic Orbits of Meteor Streams.” In *Publications of the Leander McCormick Observatory*, Volume 2, Charlottesville, Virginia: University of Virginia, 1914, pages 459–460.

For 1914–1918: All members’ names and observational statistics are from: Olivier, Charles P., 349 Parabolic Orbits; Report of the AMS for 1914-1918’, *Publication of the Leander McCormick Observatory*, Volume 2, 1921, Charlottesville, VA: U of VA; pp. 226–239.

For 1919–1925: All members’ names and observational statistics are from: Olivier, C.P, Report of the AMS for 1919–1925, *Publications of the Leander McCormick Observatory*, Volume 5, Part 1, Charlottesville, VA: U VA, 1929, pp. 8–17.

All of the following AMS Annual Reports were authored by Charles P. Olivier in his “Meteor Notes” and published in *Popular Astronomy* 1927–1951. Only the volumes, years, and pages are cited below:

- 1926: *Volume 35*, 1927, pp. 286-287
- 1927: *Volume 36*, 1928, pp. 132-134
- 1928: *Volume 37*, 1929, pp. 176-178
- 1929: *Volume 38*, 1930, pp. 174-177
- 1930: *Volume 39*, 1931, pp. 149-154
- 1931: *Volume 40*, 1932, pp.95-96 and 163-165.
- 1932: *Volume 41*, 1933, p. 112
- 1933: *Volume 42*, 1934, p. 155
- 1934: *Volume 43*, 1935, p. 179
- 1935: *Volume 44*, 1936, p. 213
- 1936: *Volume 45*, 1937, p. 160
- 1937: *Volume 46*, 1938, p. 155
- 1938: *Volume 47*, 1939, p. 147
- 1939: *Volume 48*, 1940, p.151
- 1940: *Volume 49*, 1941, p. 149

- 1941: Volume 50, 1942, p. 96
 1942: Volume 51, 1943, p. 272
 1943: Volume 52, 1944, p.242
 1944: Volume 53, 1945, p. 351
 1945: Volume 54, 1946, p. 246
 1946: Volume 55, 1947, p. 214
 1947: Volume 56, 1948, p.152
 1948: Volume 57, 1949, p. 213
 1949: Volume 58, 1950, p. 235
 1950: Volume 59, 1951, pp. 36 and 158

From 1951 to 1955, Dr. Olivier published annual reports in two journals, the Meteoritical Society's *Meteoritics* journal and in the Flower and Cook Observatories (FCOR) reprints.

- For 1951, *Meteoritics*, Vol. 1, No. 1, 1953, p.83
 For 1952, *Meteoritics*, Vol 1., No. 2, 1954, pp. 258-259; and also Flower &Cook Observatories, Reprint (FCOR)* 99, p.259
 For 1953, *Meteoritics*, Vol 1., No. 3, 1955, pp. 366-368; FCOR 103,
 For 1954, *Meteoritics*, Vol 1., p. 514, and also FCOR 104
 For 1955, *Meteoritics*, Vol 1., p. 516, and also FCOR 104
 From 1956 to 1968, Dr. Olivier published annual reports as FCORs.*
 For 1956, Meteor Reports AMS for 1956, FCOR 115, p.5
 For 1957, *ibid.*
 For 1958, *ibid.*
 For 1959, FCOR No. 119, p. 5.
 For 1960, FCOR No. 131, p. 5
 For 1961, FCOR No. 137, p. 7
 For 1962, FCOR 143
 For 1963, FCOR 149, pp. 7-20
 For 1964, FCOR 155, pp. 9-12
 For 1965, FCOR 164, pp. 8-9
 For 1966, FCOR 179, pp. 7-11
 For 1967, FCOR 184, pp. 6-9
 For 1968, FCOR 190, pp. 5-8

*Flower &Cook Observatories Reprints are available from University of Pennsylvania Archives.

1969-1971 annual reports were issued from Leander McCormick Observatory, University of Virginia

- For 1969, Meisel, D.D. and CP Olivier, Meteor Reports of the AMS for 1969, *Publications of Leander McCormick Obsy (no volume provided in copy)*, Charlottesville, VA: University of Virginia, pp. 4-6
 For 1970, Olivier, CP, Frederick, LW & Meisel, D.D., Meteor Reports of the AMS for 1970/ *Publications of Leander McCormick Obsy (no volume provided in copy)*, Charlottesville, VA: University of Virginia, pp. 3 and ff.

For 1971, Olivier, C.P., L.W. Frederick, and D.D. Meisel, Meteor Reports of the AMS for 1971, *Bulletin 193, Publications of the Leander McCormick Observatory*, Charlottesville, VA: University of Virginia, 1972, pp. 5-10

The final two annual reports listed are the most recent that are relevant to this book. They were published by the Department of Physics, at the State University of New York at Geneseo.

For 1972, Olivier, C.P., L.W. Frederick, and D.D. Meisel, Meteor Reports of the AMS for 1972, *Bulletin 194*. Department of Physics, Geneseo, NY: State University College of New York (SUCNY), April 17, 1973, pp. 9-11.

For 1973, Meisel, David D., Director and C.P. Olivier, Director Emeritus, Meteor Report for 1973, AMS No. 195, Geneseo, NY: SUCNY, 1974 March 22

Index

A

- AAVSO. *See* American Association of Variable Star Observers
- Abbe, Cleveland (1838–1916), [60](#). *See also* Weather Bureau
advocate for long enduring meteor trains, [190](#), [376](#), [432](#)
advocate for ‘photographic meteorograph’, [60](#)
and Henry A. Peck, [59](#), [81](#)
editor of the *Monthly Weather Review*, [82](#), [309](#), [340](#)
Luminous Meteor Committee (American Astronomical Society), [59](#), [62](#), [274](#)
role in 1913 Olivier-Denning controversy, [119](#)
- Aitken, Robert Grant (1864–1951), [31](#), [130](#).
See also Lick observatory
- Alcock, George (1913–2001), [275](#)
- Alden, Harold Lee (1890–1964), [281](#). *See also* McCormick observatory
contributor of telescopic meteors, [319](#)
- American Association Of Variable Star Observers (AAVSO)
Charles Olivier’s relations with, [35](#)
dual members of American Meteor Society and AAVSO, [75](#)
members who made telescopic meteor reports, [76](#)
telescopic meteor observations, and, [77](#), [231](#), [234](#), [412](#)
- American Astronomical Society
Astronomical and Astrophysical Society of America, and, [58](#)
Luminous Meteor Committee, [59](#)
Meteor Committee in 1917, [62](#), [75](#), [109](#), [113](#), [119](#), [224](#)
- American Meteor Society, [125](#)
annual number of meteors observed, [19](#), [30](#), [169](#)
1919–1929, table of, [148](#), [149](#), [155](#), [159](#), [169](#)
grand meteor totals, 1930–1936, table of, [234](#)
total of Leonid meteors, 1930–1936, table of, [197](#), [214](#)
total of Perseid meteors, 1930–1936, table of, [239](#), [243](#)
data archives, [234](#)
dual members of AMS and AAVSO, [75](#)
first (earliest) members, [43](#)
inaugurated in 1911, [41](#), [43](#), [48](#), [95](#)
low membership 1921–1925, [124](#), [125](#)
and factors responsible for, [232](#)
membership increase, [77](#), [95](#), [123](#), [149](#), [287](#)
role of Leonids in 1930s in, [175](#), [227](#), [352](#)
role of ‘Meteor Notes’ in, [159](#), [163](#), [217](#), [225](#), [441](#)
membership, long-term active, [200](#)
membership numbers, [77](#), [89](#), [139](#)
1911–1918, [95](#), [148](#)
1915–1930, [125](#)
1919–1929, [148](#), [149](#), [155](#)
1930–1936, [174](#), [197](#), [200](#), [270](#), [468](#)
membership rosters and statistical summaries, [90](#), [123](#), [148](#), [197](#)
1915–1918, [88](#), [90](#), [95](#), [321](#)
1919–1929, [148](#), [149](#), [155](#)
1930–1936, [174](#), [197](#), [200](#), [270](#), [468](#)
Stalwarts 1900–1936, [291](#), [292](#)
observational procedures, standardized, [51](#)
official approval by American Astronomical Society, [62](#)

- American Meteor Society (*cont.*)
 Olivier's Leadership style
 contrasted with AAVSO's, 140
 impact of on AMS membership, 174
 purpose for, 52
 Regional Groups 1930–1936, 214
 Regional Groups' directors 1930–1936, 223
 Society for Practical Astronomy,
 relationship to, 51
 Stalwarts (members), 291
 top achievers, 1914–1925, 120
 total number of meteor orbits, 1911–1918,
 95, 160
- AMS. *See* American Meteor Society
- Astrometry, 12, 59, 155. *See also* Classical astronomy
- Astronomers
 astrophysicists, 58, 141, 143, 145–148,
 188, 260
 classical astronomers, 12–14, 58, 144, 148,
 155
- Astronomy
 gravitational, 12, 23, 95, 101, 103, 108,
 118, 148
 meteor, 20, 39, 41, 42, 129, 133, 139, 148,
 149, 155, 159, 173–175, 184, 197, 199,
 213, 226, 242, 251, 270, 275, 300, 337,
 355, 422, 465
- Astrophysics
 astrophysicists and their “lines of descent”,
 143
 classical astronomy, competition with, 187
- B**
- Baden-Powell, Reverend Professor, 274
- Barnard, Edward Emerson (1857–1923), 31,
 99, 101, 113, 164
- Barton, Samuel (1882–1958), 184, 194, 254
- Belgium
 history of meteor work, 271
- Birkenstock, Charles. *See* Central Meteoric Bureau
- Boothroyd, Samuel Latimer (1874–1965), 263,
 266
- British Astronomical Association, 105, 106,
 119, 223, 272, 275, 378, 394, 418, 455
 Director A. Grace Cook, 128
 Director J.P. Manning Prentice, 128, 275
- Bureau Central Meteorique. *See* Central Meteoric Bureau
- Byrd Antarctic expedition, 261, 270, 454.
See also Poulter, Thomas
- C**
- Campbell, William Wallace (1862–1938), 31,
 135
- Canada
 history of meteor work, 272
- Celestial mechanics. *See* Gravitational astronomy
- Central Meteoric Bureau, 162
 Birkenstock, Charles and, 52, 162
- Chant, Clarence A. (1865–1956), 272
- Charlottesville, Virginia, 3, 8, 9, 17, 75, 99,
 183, 316, 327
- Cincinnati Observatory, 10, 14–16, 80.
See also Stone, Ormond
- Classical astronomy, 12, 143, 185, 191, 260,
 276
 astrometry and, 12
 astrophysics, competition with, 187
 gravitational astronomy and, 12
 Schlesinger, Frank and, 71, 135, 144, 165,
 176, 180, 189
- Cleminshaw, Clarence (1902–1985), 195, 196,
 230
- Comets, 13, 14, 19, 38, 104, 167, 301, 418,
 460
Comets, book, 177, 187, 188
 Halley, 32, 34, 36, 38, 187, 417
 meteors and, 19, 38, 188
- Cook, A. Grace, 128. *See also* British Astronomical Association
- Curtis, Heber Doust (1872–1942), 15, 31, 32,
 34
- Czechoslovakia
 history of meteor work, 273, 274
- D**
- Dartayet, Martin Horacio (flourished 1926–1952), 270
- Dawson, Bernhard H. (1891–1960), 70, 112,
 198, 271
- Declination, 12, 14, 16, 22, 102, 118,
 239, 325
- Denning, William Frederick (1848–1931), 24,
 36, 104, 274
 biography and bibliography, 36
 controversy with Olivier 1913, 24, 36
 Denning's meteor catalogs, 95
 long-enduring radiants, 103, 116, 119
 stationary radiants, 39, 51, 104, 108, 111,
 119, 146, 274, 312
- De Roy, Felix (1883–1942), 179, 259, 271
 IAU Commission 22 Meteors, and, 129,
 272, 351

- Dole, Robert Montgomery (1884–1966), 121, 306
- Double star astronomy, 27, 30, 33, 41, 130, 184, 194, 478
- history of, at Flower Observatory, 184, 186, 187
- International Astronomical Union
Commission 26, 130
- other astronomers, contemporaries of
Olivier's, 43
- performed by Olivier at
Flower Observatory, 168, 358
Lick Observatory, 31–34
McCormick Observatory, 33, 41
- Dual members of AMS and AAVSO.
numbers of, by year, 77
- E**
- Elkin, William Lewis (1855–1922), 59, 113
- England
history of meteor work, 274
Luminous Meteor Committee (British
Association for the Advancement of
Science), 59, 62, 274
- Estonia
history of meteor work, 275
- F**
- Ferris, Elise (nee Olivier) (1925–2013), 178
- Fireball (meteor), 81, 85, 166, 168, 197, 235, 338, 461
- crowdsourced observations in the 1930s, 245
- Hoffmeister, Cuno and, 167, 216, 260, 276, 361
- interstellar theory, 88, 167, 256, 259, 260, 270, 276, 278, 361
- July 25, 1929 fireball, 168, 253, 254
- meteorite dropping, 236
- Niessl, Gustav and, 167, 260, 276
- Olivier's method of investigation, 95, 119, 255, 263, 266
- Olivier-Wylie conflict about investigation
methods, 252, 254
- sound-producing, 236, 329, 452
- Wylie's method of investigation, 254, 255
- yearly totals of fireball reports, 1930–1936, 235
- Fisher, Willard James (1867–1934), 128, 266, 272
- coordination with Olivier for fireball
investigation, 128, 167, 175, 235
- influence on Millman and Hoffleit, 267, 272
- Shapley, Harlow and, 267
- Flower observatory
18-inch Brashear refractor, 136
Director's residence at, 136, 176
sky conditions at, in 1930s, 221, 396
- France
meteor work, absence of in Meteor Notes, 275
- Frost, Edwin B. (1866–1935), 70, 142, 145
- G**
- Germany, 276
- Hoffmeister, Cuno, 276, 277
- Niessl, Gustav von, 276
- Gravitational perturbation, 241. *See also* 1899
Leonids
- Greg, Robert Philips (1826–1906), 274
- Guth, Vladimir (1905–1980), 273
- H**
- Hale, George Ellery (1868–1938), 58, 141, 142, 145
- Hayes, Alice (nee Olivier) (1920–2015), 7, 134
- Herschel, Alexander Stewart (1836–1907), 104, 107, 274. *See also* W.F.Denning
biography, 107
theory of stationary radiants, 108
- Hoffmeister, Cuno (1892–1968), 167, 216, 232, 260, 276, 277, 280. *See also*
Hoffmeister-Olivier program
Hoffmeister's 1925 fireball catalog, 277
Hoffmeister-Olivier program, 216, 218, 219, 278, 279, 359, 361, 377, 380, 443
hyperbolic fireball velocities, 189, 232, 256, 260
interstellar meteors, 260, 280
von Niessl's fireball catalog, 260
- Hoffmeister-Olivier program, 216, 218, 219, 233, 278, 279, 359, 361, 377, 380, 443.
See also Cuno Hoffmeister
- Hourly meteor rates, 52, 161, 212, 215, 232, 233, 387, 437
- Hoffmeister-Olivier Program, and, 232
in 349 Parabolic Orbits (1920), 95, 115, 120, 124, 322
- Hubble, Edwin (1889–1953), 145, 155, 260

- Hydrographic Office of the U.S. Navy, [85](#), [86](#), [228](#)
- I**
- International Astronomical Union (IAU)
- Olivier's membership in Commission 22, Meteors, [106](#), [129](#), [270](#), [272](#)
 - Olivier's membership in Commission 26, Double Stars, [130](#)
 - Olivier's Presidency of Commission 22, 1925–1935, [272](#), [275](#)
- J**
- Japan
- history of meteor work, [281](#)
- Jupiter, gravitational influence, [22](#). *See also* 1899 Leonids
- K**
- Khan, Mohammed A. R. (1881–circa 1962), [241](#), [292](#), [416](#), [417](#)
- King, Alphonso (1882–1936), [118](#), [177](#), [179](#), [265](#)
- Koep, John (1898–1949), [316–319](#)
- Philip Trudelle, work with, [160](#), [294](#), [316](#), [319](#)
 - Pons-Winnecke comet's meteors, [160](#), [316](#)
- Komaki, Koziro (1903–1969), [281](#)
- Oriental Astronomical Association, Meteor Section Director, [281](#)
- L**
- Lankford, John (author), [193](#)
- Lapaz, Lincoln (1897–1985), [116](#), [148](#), [198](#), [213](#), [219](#), [321](#), [324](#), [363](#)
- Ohio regional group leader, [219](#)
 - Radio control for simultaneous meteor plots, earliest, [219](#)
 - Wichita Kansas group leader in 1916, [93](#)
- Leonard, Frederick Charles (1896–1960), [74](#), [236](#), [268](#)
- member of the AAVSO, [74](#)
 - member of the AMS, [52](#), [74](#)
 - monthly register of the SPA, [52](#), [57](#)
 - Olivier's opinion of, [52](#)
 - Society for Practical Astronomy, [51](#), [52](#), [70](#), [74](#), [88](#), [268](#), [323](#), [471](#)
 - Society for Research on Meteorites (later Meteoritical Society), [236](#), [268](#)
- Leonid meteor shower, [18](#), [188](#), [194](#), [214](#), [242](#), [308](#), [395](#), [414](#), [422](#), [448](#), [470](#). *See also*
- Meteor storm
 - 1898 Leonids, [24](#)
 - 1899 Leonids, [18](#), [20](#), [22](#), [23](#), [39](#), [327](#)
 - 1899 Leonids, press reactions to, [19](#)
 - 1900 Leonids, [22](#), [25](#)
 - crowdsourcing counts of, in 1930s, [243](#)
 - yearly totals 1930–1936, table of, [235](#)
- Lick observatory, [30–34](#), [38](#), [187](#), [272](#)
- Loreta, Eppe (1908–1945), [280](#), [431](#)
- Lost Cause, The, [9](#), [10](#), [39](#). *See also* Charlottesville, Virginia
- Louisville Astronomical Society, [221](#)
- Luminous Meteor Committee (British Association), [59](#), [62](#), [274](#)
- gnomonic star maps, prepared in 1860s, [69](#), [95](#)
- Luminous Meteor Committee, [59](#), [274](#).
See also American Astronomical Society
- M**
- Maltsev, Viktor A., [263](#), [282](#)
- McCormick observatory, Leander, [16](#), [19](#), [41](#), [70](#), [99](#)
- Directors, [16](#)
 - Mitchell, Samuel, [28](#), [46](#), [50](#), [70](#), [99](#), [124](#), [126](#)
 - Stone, Ormond, [8](#), [10](#), [11](#), [13](#), [15](#), [18](#), [19](#), [28](#), [30](#), [31](#), [50](#), [110](#)
 - image of, [25](#)
 - refractor, 26-inch, [9](#), [15](#), [16](#), [26](#), [46](#), [48](#), [96](#), [131](#), [163](#), [318](#)
 - staff members 1900–1928, [123](#), [136](#)
- McIntosh, Ronald (1904–1977), [161](#), [224](#), [281](#), [292](#), [348–350](#)
- Index of southern meteor radiants, [350](#)
- Merrill, Paul (1887–1961), [32](#), [34](#), [148](#), [187](#)
- Meteor
- comets as ‘parent bodies’, [19](#), [160](#)
 - Commission 22, International Astronomical Union, [106](#), [129](#), [270](#), [272](#), [275](#)
 - grand totals, 1930–1936, [234](#)
 - interstellar, [88](#), [167](#), [256](#), [259](#), [270](#), [276](#), [361](#)
 - plotting on a star map, [25](#), [34–36](#), [69](#), [95](#), [156](#), [212](#), [229](#)
 - shower, cause of, [18](#), [19](#). *See also* Meteoroid

- sporadic, 24, 166, 196, 215, 216, 221, 227, 266, 352, 423
- storm, 19, 20, 77, 161, 173, 199, 214, 222, 344, 371, 398, 423, 459
- total observed 1911–1918, 95, 148
- yearly totals of Perseids and Leonids, 1930–1936, 234
- Meteor heights
1919–1925, 165
heights, average for the Leonids and sporadics, for 1932–1934, 228
- Meteorites
AMS members search for in the 1930s, 237
Harvey Nininger and, 236, 237, 269
Society for Research on (SRM), 236, 251, 268, 270, 323, 353
- Meteoritical Society
Farrington, Oliver Cummings (1864–1933)
Meteorites, 269
Leonard, Charles Frederick, and, 236, 268
Nininger, Harvey Harlow, and, 237
Olivier's opinion of, 237
Society for Research on Meteorites (SRM), origin in, 268
Wylie, Charles Clayton, and, 236
- Meteoroid, 19, 22, 36, 88, 108, 147, 236, 256, 260, 270, 278, 398, 445, 458. *See also* Meteor; Meteor Shower
- Meteor outbursts, 223, 240, 241
Alpha Monocerotids, 241
April 15, 1931- McLeod- Corona Borealis, 240
Draconids, 241, 392
February 23, 1936- Paterson- near Eta Carinae, 241
June 10, 1930- Watson, Oertel and Field- Gamma Delphinids, 240
November 21, 1935- Mohammed A.R. Khan- Alpha Monocerotids, 241
October 19, 1935- Whitcombe- near Mira, 240
October 9, 1933- Draconids startled European sky watchers, 241
- Meteor photography, 167, 222, 223, 230, 238
AMS members and, 223
Boyles, A. and W.G. Montgomery's photographs of a 1935 Leonid, 239
Olivier opinions about, 238
Pruett, J.H., Perseid photograph, 238
slow emulsion speeds, 130
Williams, J.D.'s suggestion for exposures, 238
- Wilson, L.J. and, 54, 220, 238
- Meteor rates
catalogs, 232, 234, 450
Hoffmeister-Olivier research program, 216, 218, 278, 380
- Meteors (book), 23, 110, 117, 119, 128, 133, 166, 188, 253, 274, 275, 358. *See also* Olivier, Charles P.
arguments against stationary radiants, 312
- Meteor showers
Eta Aquarid, 38, 48, 118, 160, 224, 355, 403
and Comet Halley, 32, 34, 38, 187, 417, 471
Leonid, 18, 188, 194, 214, 242, 308, 395, 422
Orionid, 37, 118, 166, 351, 403
controversy with Denning over radiant, 103, 116, 118, 119, 128
Perseid, 27, 44, 217, 233, 274, 422, 432, 445, 470
plotting method, 111
radiant, 34, 105, 263, 287, 403
relationship to comets as a 'parent body', 19, 160
- Meteor trains
long enduring, 87, 190, 197, 212, 215, 245, 376, 432
shift of AMS attention to during the 1930s, 62, 141
velocities of long enduring train drifts, 65, 224, 236, 260
- Midwest Meteor Association, 270. *See also* Wylie, Charles Clayton
- Millman, Peter MacKenzie (1906–1990), 267, 272
- Mitchell, Samuel A. (1874–1960), 28, 99. *See also* McCormick observatory and Olivier at Yerkes Observatory, 70
role in assisting AMS, 53, 64, 140
- Monnig, Oscar E. (1902–1999), 77, 158, 168, 221, 236, 237, 269, 341, 351, 353
AAVSO, role in, 77, 351
AMS, role in, 168, 237, 351
Texas Observers, 221, 237, 347, 352
- N**
- Naval Observatory, United States (USNO), 10, 16, 22, 27, 83, 85, 86, 117, 128, 133, 252, 406
- Newcomb, Simon (1835–1909), 10, 59, 136

Newton, Isaac (1642–1727), [11](#), [22](#). *See also* Astronomy, gravitational

Niessl, Gustav von (1839–1919), [260](#), [276](#)
 fireball catalog, [260](#)
 interstellar meteors, [260](#)

O

Olivier, Charles Pollard (1884–1975)
 126 Parabolic Orbits (1914), [88](#), [89](#), [111](#)
 and AMS members' contributions, [71](#),
[95](#), [112](#), [233](#), [272](#), [342](#)
 arguments against stationary radiants,
[312](#)

175 Parabolic Orbits (dissertation), [52](#)
 arguments against stationary radiants,
[111](#)

349 Parabolic Orbits (1920/1921), [115](#),
[120](#), [124](#), [322](#)
 and AMS members' contributions, [71](#)
 arguments against stationary radiants,
[115](#)

agenda for future meteor research, [65](#)

American Association of Variable Star
 Observers, collaboration with, [287](#)

American Meteor Society Report for 1919–
 1925, [118](#), [120](#), [121](#), [150](#), [160](#), [165](#),
[282](#), [298](#)

American Philosophical Society, [190](#), [191](#),
[197](#), [235](#), [276](#), [278](#)
 election to, [1932](#), [191](#)
 publications by, [25](#), [33](#), [71](#), [270](#), [282](#),
[326](#), [474](#), [475](#), [483](#)

at Lick Observatory 1909–1910, [131](#), [153](#)
 at Agnes Scott College, 1911–1914, [42](#), [49](#),
[99](#), [288](#)

boyhood in Charlottesville, Virginia, [39](#)

career and family demands 1921–1930, [125](#)

Comets (book), [177](#), [187](#), [188](#)

controversy with Opik about radiants, [265](#)

controversy with Wylie about fireball
 investigations, [168](#), [254](#)

daughters, [134](#), [177](#), [287](#)
 Alice Dorsey Olivier Hayes (1920–
 2015), [132](#)
 Elise Pender Olivier Ferris (1925–
 2013), [133](#)

decline in AMS membership 1921–1925,
 role in, [136](#), [305](#)

Denning, controversy with, about stationary
 radiants, [39](#), [65](#)

double star research
 discoveries, [130](#)

efforts to increase AMS membership, [77](#),
[136](#), [159](#)

Elkins' meteor research, Olivier's analysis
 and publication of, [223](#)

eyesight, change in, [185](#), [411](#)

Fisher, Willard James, collaboration with,
[128](#)

Flower Observatory, directorship (1928–
 1954), [78](#), [137](#), [157](#), [184](#), [186–189](#)

full professorship, quest for at University of
 Virginia, [134](#)

graduate school astronomical projects, [27](#),
[28](#)

graduate students' disdain for meteor
 theses, [159](#), [188](#)

high school astronomical projects, [25](#)

influence upon foreign meteor astronomers
 and programs, [282](#)

International Astronomical Union
 Commission 22, Meteors, [106](#), [129](#),
[270](#), [272](#), [275](#), [351](#)
 Commission 26, Double Stars, [130](#)
 Presidency of Commission 22, 1925–
 1935, [272](#), [275](#)

July 25, 1929 fireball controversy, [168](#),
[253](#), [254](#)

leave from University of Virginia, to write
Meteors, [128](#)

Leonard, F.C., Olivier's opinion of, [269](#)

lifelong meteor interest, speculations about,
[38](#)

lifestyle of observatory director, [180](#)

marriage to
 Henrietta Roberta Ninuzza (nee
 Seymour), 1936, [179](#)
 Mary Frances (nee Pender), 1919, [131](#)

Meteors (book), [23](#), [110](#), [117](#), [119](#), [128](#),
[133](#), [166](#), [253](#), [274](#), [275](#), [312](#)

'Neighbors' membership and role in, [191](#)

newspaper appeals to watch Leonids and
 Perseids, [234](#)

parenting style, [183](#)

Pennsylvania, University of, [183](#), [195](#), [223](#),
[287](#), [358](#), [377](#), [421](#), [423](#), [471](#)
 Professor of Astronomy, [223](#), [287](#)

political convictions, [183](#)

professional style, [88](#)

public lectures, [157](#)

radiant definition, [95](#), [110](#), [113](#), [117](#), [119](#),
[224](#), [263](#), [266](#)
 in 1911, Olivier's dissertation, [95](#), [108](#),
[111](#)

- in 1917, American Astronomical Society Meteor Section, 75, 109, 119
 - research objectives for meteors in the 1930s, 224
 - religious practices and beliefs, 183
 - report of the AMS for 1919–1925, 118, 120, 121, 150, 156, 160, 165, 282, 298 and AMS members' contributions, 120
 - arguments against stationary radiants, 160
- Schlesinger, Frank, 127, 189, 191, 259
 - assistance from in quest for full professorship, 134
 - mentoring from, 33, 42, 478
- Social philosophy, 35
- undergraduate astronomical projects, 25
- variable star research, 184, 376
- Virginia, University of, 18, 20, 25, 90, 100, 124
 - graduate years, 27
 - professorships at, 99, 100, 134
 - undergraduate years, 25
- Olivier, George Wythe (1842–1923), 4, 132, 327
- Olivier, Katharine Roy (nee Pollard) (1848–1910), 6, 17
- Olivier, Mary Frances (nee Pender) (1896–1934), 131, 132
 - chronic illness and hospitalizations, 177, 287
 - death, 288
 - marriage to Olivier 1919, 131
- Olivier, Ninuzza (nee Seymour), 178–180, 192, 288
- Opik, Ernst Julius, 71, 275
 - controversy with Olivier about radiants, 265
 - Harvard-Cornell Arizona Expedition 1931–1933, 263
- Orbit, Meteor, 24, 47, 63, 95, 101, 160, 411
 - challenges in determining, 101
 - derived from meteor plot and radiant, 24
 - elements, 36, 37
 - radiants too error-prone to calculate, 264
- P**
- Peck, Henry Allen (1863–1921), 59, 81, 113
 - and Cleveland Abbe, 59, 81
- Perseid meteor shower, 44, 217, 233, 274, 422, 432, 445, 470
 - crowdsourcing counts of, in 1930s, 243
 - yearly totals 1930–1936, table of, 234
- Pickering, Edward C. (1846–1919), 26, 46, 47, 59, 61–63, 74, 309
- Pollard, Benjamin (1850–1877), 4, 6
- Pollard, Charles William (1825–1864), 3
- Pollard, Frances Baylor (1822–1868), 3
- Poulter, Thomas Charles (1897–1978), 258.
 - See also* Byrd Antarctic Expedition
 - fate of meteor data, 258
 - interstellar meteors, 260, 280
 - Olivier's support for, 280
- Prentice, J.P. Manning (1903–1981), 128.
 - See also* British Astronomical Association
- Pruett, J. Hugh (1886–1955), 446
- Public
 - AMS relations with, 46
 - crowd sourcing, 317
 - expectations of, 22
- R**
- Radiant catalog, 115, 241, 350
- Radiants
 - 1917 Meteor Committee, recommendations for criteria, 117
 - combined observations, 111, 112
 - criteria for, in Olivier's 1911 dissertation, 99
 - long enduring, 38, 110, 197, 216
 - Maltsev's opinions about, 264
 - McIntosh's Southern Hemisphere radiants; his Index, 350
 - number determined each year 1930–1936, 199
 - Olivier's doubts about real existence of, 115
 - Opik's opinions about, 264, 265
 - Orionid meteors, 47, 111, 166, 356
 - plotting method to determine, 35
 - stationary
 - alpha and beta Persei, 110, 116
 - and Cook, A. Grace, 312
 - and Prentice, J.P. Manning, 128
 - Arguments Against in 126 Parabolic Orbits, 111
 - arguments against in 175 Parabolic Orbits (Olivier's dissertation), 37
 - arguments against in 349 Parabolic Orbits, 71
 - arguments against in American Meteor Society Report for 1919–1925, 118
 - arguments against in *Meteors*, 25, 34
 - Epsilon Arietis, 439
 - Orionids, 30, 37, 48, 56, 103, 118, 119
- Regional Groups

Regional Groups (*cont.*)

- Arizona/J.D. Williams, 215
 Catawba College, 215
 Colorado Groups/Alpha Nu Fraternities, 215
 directors, 51, 119, 168, 192, 193, 235, 373, 409, 448, 468
 Florida Group/Professor J.H. Kusner's, 216
 Flower Observatory/Local Group, 21, 135, 185, 189, 193, 195, 214, 226, 254, 287
 Honolulu Group/Larrabee's students, 217
 Michigan Group, 217
 Milwaukee Astronomical Society
 Group/Wisconsin and Northern Illinois Group, 217
 Missouri Group/Missouri-Southern Illinois regional group, 218
 New York (Central) Group, 219
 Northeastern Group, 219
 Ohio Group, 219
 Oregon Group, 220, 445, 449, 450
 South Carolina Group, 25, 220
 Tennessee-Kentucky Group/Appalachian Observers, 220
 Texas Observers, 158, 213, 221, 326, 339, 347, 351, 356
 Utah Group, 222
- Reticles (and Reticules)
 J.D. Williams' critique of their use, 261
 Opik and, 259
 Poulter and, 259
- Royal Astronomical Society
 Eddington, Arthur Stanley, 101
Monthly Notices of the Royal Astronomical Society, 100
 Wesley, W.H., 101
- Royal Astronomical Society of Canada, 69, 253, 267, 272, 273, 429
- Russell, Henry Norris (1877–1957)
 and 1922 Lyrid meteor outburst, 72
- S**
- Safford, Truman Henry (1836–1901), 10
 Schlesinger, Frank (1871–1943)
 assistance for Olivier, 191
 J. Lawrence Smith grants, and, 191
 President of the American Astronomical Society, 191
- Seymour, Ninuzza, 179
- Shapley, Harlow (1885–1972), 15, 78, 130, 142–147, 155, 175, 192, 193, 260, 262, 263, 267, 268, 272, 280, 377.

- Ernst Opik and the Harvard-Cornell Arizona Expedition 1931–1933, 263
 trained astrophysicists, 58, 141
- Simpson, J. Wesley (1914–1977), 452
 AAVSO, role in, 77
 AMS, role in, 140
 Missouri-Southern Illinois Regional Group, 218
- Simpson, Thomas McNider, Jr. (1882–1965), 43, 44, 46. *See also* AMS first members
- Smith, F.W. (1906–2006)
 criticism of Olivier's fireball investigations, 195, 259, 358
- Smith, J.B. (1885–1963), 47. *See also* AMS First members
 Olivier's earliest collaborator, 47
 Orionids meteor map (image), 115, 119
- Society for Practical Astronomy, 51. *See also* American Meteor Society, 51, 52, 70, 74, 88, 268, 271, 471
 Meteor Section, 53, 111
 Meteor Section's meteor totals 1912–1913, 169
- Solar eclipse, 1900, 25, 406, 448
 Solar eclipse, 1905, 27, 252, 360, 406
- South Africa
 observatories' roles, 348
- Stalwarts
 examining chronological age issues, 292
 motivation for long-term AMS participation, 292
 occupations, summary of, 293
- Stone, Ormond (1847–1933), 10
- Stoney, George Johnstone (1826–1911), 22

T

- Telescopic meteors
 AAVSO, observational role, 75
 In 349 Parabolic Orbits, 163
 in AMS Report for 1919–1925, 163, 164
 observers with 40 or more reported, 1930–1936, 194
 total number reported, 1911–1918, 95
 yearly totals reported 1930–1936, 234
- Texas observers
 meteor spectra in 1932 and 1933, 158, 188, 272, 342
- Theobald, John A. (1888–1969), 251, 257
- Trowbridge, Charles C. (1870–1918), 83, 192, 325. *See also* Meteor trains
- Trudelle, Philip. *See* John Koep

U

- Union Of Soviet Socialist Republics (Russia),
129
meteor work carried out by amateur
astronomers, 157
Mirovedenie, 282, 283

V

- Vanderbilt fellows, 28, 43, 46, 318
benefits of fellowship, 46
Graham, Palmer Hampton, 43, 49
residence at McCormick Observatory
(image), 45
Simpson, Thomas McNider, 43, 44, 46
Smith, James Brookes, 43, 47
Variable stars, 26, 28, 54, 75, 186, 189, 277,
341, 347, 357, 363, 377, 390, 393, 401,
402, 420, 428, 437, 468
Cepheid, 144–146
eclipsing binary stars, 144
long period, 47, 194
Mira (Omicron Ceti), 26, 33, 34
novae, 13, 356, 361, 376, 379, 432

W

- Wamer, William P. (1908–1964), 184, 187,
189, 195, 198, 220, 352
Watson, Fletcher Guard (1912–1997), 268
cooperation with Olivier, 268
Watson, Paul S. (1905–1986), 240, 427, 468,
470
Weather Bureau, 65, 79, 81, 83, 84, 164, 174,
220, 253, 309, 324, 325, 340, 357. *See also*
Cleveland Abbe
Monthly Weather Review, journal of, 80,
82, 88, 221, 309, 325, 340
short history of, 79

- Williams, J.D. (1909–1964), 471
Arizona Meteor Group, 215, 236
Wills, Doris M. (1902–?), 195, 196
meteor heights calculations 1932–1934,
228
Wilson, Herbert C. (1858–1940), 16, 52
Cincinnati Observatory assistant to Ormond
Stone, 10, 14
editor of *Popular Astronomy*, 52
Wilson, Latimer J. (1878–1948), 53, 54, 112,
198, 220, 221. *See also* Society for Practical
Astronomy
Woods, Joseph L., Jr. (1890–1963), 186, 216,
469
Wylie, Charles Clayton (1886–1976). *See*
Midwest Meteor Association
conflict with Olivier about fireball
investigation methods, 168, 254
fireball of July 25, 1929, 168, 253
group meteor counts, 257, 385
Olivier's confrontation about J.W.
Simpson, 454
Olivier's evaluation of Wylie's meteor
work, 259
Tilden (Illinois) fireball and meteorites,
1927, 253

Y

- Yamamoto, Issei (1889–1959), 281
Yerkes observatory, 58, 99, 101, 254, 415
Olivier, in 1913, 70
Young, Charles Augustus (1834–1908), 141
Young, Reynold Kenneth (1886–1977), 69, 88,
272
gnomonic star maps and, 69, 95, 272, 274
Lick Observatory and, 272