



Smithsonian Institution Archives

Frederick Atwood Greeley Papers, 1920-1979

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Collection Overview

Repository:	Smithsonian Institution Archives, Washington, D.C., osiaref@si.edu
Title:	Frederick Atwood Greeley Papers
Identifier:	Record Unit 7307
Date:	1920-1979
Extent:	2 cu. ft. (4 document boxes)
Creator::	Greeley, Frederick A. (Frederick Atwood), 1896-1980
Language:	Language of Materials: English

Administrative Information

Preferred Citation

Smithsonian Institution Archives, Record Unit 7307, Frederick Atwood Greeley Papers

Historical Note

Frederick Atwood Greeley (1896-1980) was born and raised in Pelham, New Hampshire. In 1920 he began his career with the Smithsonian Astrophysical Observatory (SAO) as a staff member maintaining the SAO's solar radiation observing stations.

The SAO, under the directions of Charles Greeley Abbot, its Director from 1907 to 1944, and Loyal Blaine Aldrich, Assistant Director from 1928 to 1944 and Director from 1944 to 1955, had established several solar radiation observing stations to determine the solar constant of radiation (measuring the amount of heat reaching the earth from the sun outside the earth's atmosphere.) It was hoped that the data obtained would help improve accuracy in weather forecasting. These stations were established on high-elevation barren mountaintops in desert regions (usually 7,000 to 9,000 feet above sea-level), where clear atmosphere with few clouds prevails. The major pieces of equipment then in use were the bolometer, coelostat, galvanometer, and the Angstrom pyrheliometer. Data obtained from these instruments was computed and the results sent to SAO in Washington, D.C. The personnel who manned these stations served on a rotating term of about three years.

Greeley's tours of duties as bolometer assistant and assistant station director included the solar radiation observing stations at Mount Harqua Hala near Wenden, Arizona, 1920-1923; Montezuma near Calama, Chile, 1923-1926 and 1942-1943; Mount Brukkaros near Keetmanshoop, Southwest Africa, 1926-1929; Table Mountain near Swartout, California, 1930-1933 and 1936-1941; and Mount Saint Katherine in the Sinai, Egypt, 1933-1936. Greeley's duties included operation, readings, and maintenance of the sensitive heat-measuring instruments; computations of the data obtained from the readings; and routine maintenance of the station's buildings and equipment.

Greeley's tours of duty as station director included the stations at Montezuma, Chile, 1943-1946 and 1951-1955; Miami, Florida (SAO's only sea-level station), 1947-1948; and Table Mountain, California,

1948-1951 and 1955-1956. Greeley's duties as station director included full responsibility for the adjustment, repair, and operation of the equipment, as well as management of the station as a unit.

Greeley retired from SAO in December 1956. He lived in Redlands and Laguna Hills, California until his death in 1980.

Chronology

<i>November 26, 1896</i>	Born, Pelham, New Hampshire. Greeley was a second cousin of Charles Greeley Abbot.
<i>1916</i>	Graduated high school in Nashua, New Hampshire.
<i>August-November, 1918</i>	United States Army
<i>October 1, 1920-March 31, 1923</i>	Mount Harqua Hala Station near Wenden, Arizona. Bolometer assistant and station assistant director. Alfred Moore was station director.
<i>April 1, 1923-June 30, 1926</i>	Montezuma Station near Calama, Chile. Bolometer assistant and station assistant director. Loyal Blaine Aldrich was station director. (NOTE: Frederick Greeley's brother, Paul Greeley, also served at this station from 1920 to 1922).
<i>July 1, 1926-November 30, 1929</i>	Mount Brukkaros Station near Keetmanshoop, Southwest Africa. Assisted in establishing this solar radiation observing station, and served as bolometer assistant and station assistant director. William H. Hoover was station director.
<i>December 1, 1929-December 31, 1932</i>	Table Mountain Station near Swartout, California. Bolometer assistant and station assistant director. Harlan Zodtner was station director.
<i>January 1, 1933-February 28, 1933</i>	Washington, D.C. Prepared and packed for an expedition to Mount Saint Katherine in the Sinai Peninsula, Egypt.
<i>March 1, 1933-June 30, 1936</i>	Mount Saint Katherine Station, Sinai, Egypt near the Monastery of Saint Katherine. Bolometer assistant and assistant station director. Helped establish this solar radiation observing station. Harlan Zodtner was station director.
<i>July 1, 1936-October 31, 1941</i>	Table Mountain Station, California. Bolometer assistant and assistant station director. Harlan Zodtner, Hugh Freeman, and Clayton P. Butler were station directors.
<i>June 10, 1937</i>	Married Olive Adelia Troup (born Maxwell, Iowa, June 10, 1901), Riverside, California.
<i>November 1, 1941-February 28, 1942</i>	Washington D.C. Prepared for an expedition to Chile.
<i>March 1, 1942-June 30, 1946</i>	Montezuma Station, Chile. Bolometer assistant, 1942-1943; station director, 1943-1946. Olive Greeley served as bolometer assistant, 1943-1946. Alfred Moore was station director, 1942-1943.
<i>July 1, 1946-April 30, 1947</i>	Washington, D.C. Did research on needle system for quartz fiber galvanometer; repaired and adjusted electronic and optical equipment.

<i>May 1, 1947-July 31, 1948</i>	Miami Station. Established solar radiation field station. Station director. Olive Greeley was assistant station director.
<i>August 1, 1948-September 30, 1951</i>	Table Mountain Station, California. Station Director. Alfred Froiland, Stanley Aldrich, Albert Pizzuto, and Merwin Utter were assistant station directors.
<i>October 1, 1951-February 28, 1952</i>	Washington, D.C. Prepared for an expedition to Chile.
<i>March 1, 1952-June 30, 1955</i>	Montezuma Station, Chile. Station director. John Pora and James Zimmerman were assistant station directors.
<i>July 1, 1955-December 1, 1956</i>	Table Mountain Station, California. Station director.
<i>December 1, 1956</i>	Retired from SAO. 36 years and 3 months of service.
<i>1957-1980</i>	Retirement in Redlands, California, 1957-1970, and Laguna Hills, California, 1970-1980.
<i>March 19, 1980</i>	Died, Laguna Hills, California, age 84.
<i>May 21, 1982</i>	Death of Olive A. Greeley, Laguna Hills, California, age 81.

Descriptive Entry

These papers document Greeley's career and experiences during his tours of duty at the SAO's radiation observing stations from 1920 to 1956. These materials consist primarily of correspondence, diaries, notes, manuscripts, photographs, and personal documents.

The correspondence includes incoming and outgoing official correspondence, 1931-1955, mostly with Charles G. Abbot and Loyal Blaine Aldrich concerning daily activities, equipment and station buildings maintenance, and financial reports; correspondence to family members, 1923-1952, in which Greeley described his experiences and travels; correspondence with Charles G. Abbot, 1964-1969, mostly concerning Abbot's activities and news of former solar observers; correspondence with researchers interested in the SAO's solar constant program, 1977-1978, and Oliver Wulf concerning experiments and theories of the solar constant, 1932.

The manuscripts consist of Greeley's unpublished autobiography, "Following the Sun," undated, and consist of typed copies and excerpts of correspondence to members of his family, 1920-1936; and a typescript of Douglas V. Hoyt's study, "Smithsonian Astrophysical Solar Constant Program," 1978, and includes the published version, 1979.

The diaries were written mostly by Olive A. Greeley, who also served as bolometer assistant at Montezuma, 1943-1946, and as assistant station director at Miami, 1947-1948. The entries document day-to-day activities at the various stations, mostly at Montezuma, Miami, and Table Mountain, 1938-1955. Entries by Frederick A. Greeley include traveling expense accounts, 1938 and 1940-1941, and notes written during his travel to Jerusalem, 1936.

The photographs consist of black and white prints of scenes taken by Greeley during his tours of duty. Also included in this collection are personal documents such as passports, automobile registrations, internal identification cards (Chile), and ship passenger lists; mathematical notes; instrument operation instructions; methods of data computation issued by Abbot; newspaper articles about the Greeleys and the SAO's solar radiation observing station; transcripts of radio interviews and speeches given by the Greeleys about their experiences, and about Charles G. Abbot; an April 1930 issue of the National

Geographic Magazine in which Mrs. William H. Hoover, the wife of the Mount Brukkaros station director, described her experiences; and two 8mm motion pictures, one in black and white, showing panoramic views of the Sinai, c. 1934, and one in color, showing a segment of the Rose Bowl Parade and snow scenes at Table Mountain, 1949.

Additional materials on the SAO solar constant program and Greeley's reports and correspondence can be found in record unit 85. The Archives biographical file also contains information about the Greeleys, including copies of their vital statistics records.

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

Astrophysics

Types of Materials:

Black-and-white photographs
Clippings
Diaries
Manuscripts
Motion pictures (visual works)

Names:

Abbot, C. G. (Charles Greeley), 1872-1973
Aldrich, Loyal Blaine, 1884-1965
Greeley, Frederick A. (Frederick Atwood), 1896-1980
Greeley, Olive A.
Hoyt, Douglas V.
Miami Station, Florida
Mount Brukkaros Station (Southwest Africa)
Mount Harqua Hala Station (Arizona)
Mount Montezuma Station (Calama, Chile)
Mount Saint Katherine Station (Egypt)
Rose Bowl (Football game)
Smithsonian Astrophysical Observatory
Table Mountain Station (California)

Container Listing

Series 1: Personal Correspondence, 1923-1978

This series consists of Frederick A. Greeley's correspondence from Charles G. Abbot, 1964-1969, mostly concerning Abbot's activities and news of former solar observers; correspondence to Greeley's family in which he described his activities and travels; correspondence from Clay Preston Butler concerning his offer to provide information to a researcher on SAO's solar constant projects; and correspondence from researchers requesting information, mostly concerning Greeley's tours of duty and addresses of other solar observers.

Box 1

Box 1 of 4	Abbot, Charles Greeley, 1954; 1965-1969. Also included is Abbot's letter to Mrs. Clay Preston Butler, 1932.
Box 1 of 4	Butler, Clay Preston, 1977-1978
Box 1 of 4	Fouts, Gary, 1975
Box 1 of 4	Greeley, Mr. and Mrs. Frederick Alonzo, 1923-1952 (Frederick A. Greeley's parents)
Box 1 of 4	Greeley, Olive A., 1938
Box 1 of 4	Hoyt, Douglas V., 1977
Box 1 of 4	Merriam, Grace Greeley, 1926, 1934, 1948 (Frederick A. Greeley's aunt)
Box 1 of 4	Wulf, Oliver, 1932. Concerning experiments and theories of solar constant.

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Series 2: Official Correspondence. Arranged Chronologically, 1921, 1939-1956

This series consists of original incoming and typed copies of outgoing correspondence between Frederick A. Greeley, Charles G. Abbot, and Loyal Blaine Aldrich. This correspondence concerned mostly day to day activities, expense accounts, equipment, and observation reports.

Box 1

Box 1 of 4	Official correspondence, 1921
Box 1 of 4	Official correspondence, 1939
Box 1 of 4	Official correspondence, 1940-1945
Box 1 of 4	Official correspondence, 1946-1950
Box 1 of 4	Official correspondence, 1951-1953
Box 1 of 4	Official correspondence, 1954-1956

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Series 3: Diaries, 1936-1955

This series consists of notebooks and yearbooks used as diaries, 1936-1955. Most of the entries were written by Olive A. Greeley. These entries include day to day activities during the Greeleys' tours of duty; automobile and lodging expenses, 1938; and miscellaneous notes.

Box 1

Box 1 of 4	Notes on excursion to Palestine, 1936
Box 1 of 4	Table Mountain and Montezuma stations, 1938-1947
Box 1 of 4	Miami assignment, 1947-1948
Box 1 of 4	Table Mountain station, 1949
Box 1 of 4	Montezuma and Table Mountain stations, 1951-1955

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Series 4: Manuscripts and Notes

Box 2

- Box 2 of 4 "Following the Sun," by Frederick A. Greeley, undated. This manuscript consists of typewritten copies and excerpts of letters written by Greeley to members of his family during the years 1920 through 1936 and contains many accounts of the daily life and experiences witnessed by Greeley during the time he spent at those isolated mountaintop solar observatories in Arizona, Chile, Southwest Africa, California, and Egypt. (3 folders)
- Box 2 of 4 Mathematical notes and instrument instructions. These materials consist of typewritten copies of instructions prepared by Charles G. Abbot and handwritten notes by Greeley.
- Box 2 of 4 "The Smithsonian Astrophysical Observatory Solar Constant Program," by Douglas V. Hoyt, 1979. This folder consists of a 1978 typewritten draft copy of Hoyt's manuscript on his study of the SAO project. Included are Hoyt's letter to Greeley requesting that he review and comment on the manuscript and a published copy in the *Review of Geophysics and Space Physics*, May 1979.

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Series 5: Speeches and Radio Interviews

Box 2

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| Box 2 of 4 | Mt. Montezuma, 1926 |
| Box 2 of 4 | Equipment used for measuring solar radiation. Radio interview, Los Angeles Fair, 1948 |
| Box 2 of 4 | "Life of Charles Greeley Abbot," <i>Program for Browser</i> , February 10, 1967 |

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Series 6: Personal Documents, 1923-1955

This series consists of Frederick A. Greeley and Olive A. Greeley's passports, internal identification cards (Chile), and automobile registrations. Also included are ship passenger lists, checking account statement issued by the Ottoman Bank, Egypt, Frederick A. Greeley's list of tours of duty supporting application for personnel action, and Smithsonian Institution identification badge.

Box 2

- Box 2 of 4 Passport and ID cards, Chile, 1923-1926
- Box 2 of 4 Passport and ID cards, Chile, 1942-1945
- Box 2 of 4 Passport and ID cards, Chile, 1952-1955

Box 3

- Box 3 of 4 Passport and ID cards, Egypt, 1932-1936. Bank statement, Ottoman Bank
- Box 3 of 4 Passport and ID cards, Southwest Africa, 1926-1929
- Box 3 of 4 Smithsonian Institution identification badge
- Box 3 of 4 Personnel records, 1949

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Series 7: Newspapers and Journal Articles

Box 3

- Box 3 of 4 National Geographic Magazine, SW Africa Trip, April, 1930. This magazine includes an article by Mrs. William H. Hoover, wife of the Mount Brukkaros station director, "Keeping House for the Shepherd of the Sun."
- Box 3 of 4 Newspaper articles (bond paper photocopies) on SAO's solar radiation projects and a biography of Charles G. Abbot.

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Series 8: Photographs, 1920-1955

This series consists of black and white photographs mostly taken by Frederick A. Greeley during his tours of duty, 1920-1955 and photographs from the Chile Exploration Company, Chiquicamata, Chile.

Box 3

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| Box 3 of 4 | Arizona, 1920-1923 |
| Box 3 of 4 | California, 1929-1932; 1948-1951. Includes black and white negatives of the aftermath of snow storm at Table Mountain, 1949. |
| Box 3 of 4 | Chile, 1923-1926; 1952-1955 |
| Box 3 of 4 | Chile Exploration Company, Chiquicamata, Chile, undated. Includes a typewritten summary by Frederick A. Greeley describing the Atacama Desert countryside, undated. |

Box 4

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| Box 4 of 4 | Egypt, 1933-1936. Includes souvenir photographs. |
| Box 4 of 4 | Southwest Africa, 1926-1929 |

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Series 9: Motion Pictures, circa 1934, 1949

Box 4

Box 4 of 4

Motion Pictures: (a) Mount Zebel Gebir, Sinai, Egypt, circa 1934. 8mm. 2 1/2" reel. Black and white. Panoramic view of the mountain range in the Sinai including the solar radiation observatory at Mount Saint Katherine; (b) California, 1949. 8mm 2 1/2" reel. Color. Scenes of the Rose Bowl Parade floats and snow drifts and family cats at Table Mountain.

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