

**Ernest Harry Vestine Papers, 1894-1950 (bulk 1942-1947)**



**Carnegie Institution of Washington  
Department of Terrestrial Magnetism Archives  
Washington, DC**

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# Ernest Harry Vestine Papers, 1894-1950 (bulk 1942-1947)

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**DTM-2005-03**

**Introduction**

*Abstract:* This collection consists of the personal papers of Ernest Harry Vestine. He worked for the Carnegie Institution of Washington's Department of Terrestrial Magnetism from 1938-1957. The papers in this collection are mainly reflective of his work and research at the department during World War II.

*Extent:* 4.75 linear feet: 2 document boxes, 1 flat box, 2 oversize records center cartons.

*Acquisition:* The records have been in the possession of Department of Terrestrial Magnetism since their creation.

*Access Restrictions:* There are no access restrictions.

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*Preferred Citation:* Ernest Harry Vestine Papers, 1894-1949, Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D.C.

*Processing:* Processing was completed in February 2005, by Jennifer Snyder.

This collection was processed through the generous support of the National Historical Publications and Records Commission.

**Biographical Note**

Ernest Harry Vestine was born in Minneapolis, Minnesota, 9 May 1906. When he was two, his parents moved to Alberta, Canada where he was raised and attended school. Vestine earned his BS in 1931 in physics and math. In 1937 he earned a PhD in applied mathematics from the University of London. He was formally hired by the Carnegie Institution of Washington's Department of Terrestrial Magnetism (DTM) in 1938, though he had been a collaborator with the Department since the early 1930s.

The following is excerpted from the American National Biography entry on Harry Vestine by G.A. Good.

Vestine joined the DTM as it neared the end of its decades-long geomagnetic survey of the planet. Bringing to the department the mathematical and organizational skills necessary for the analysis of this data and completion of the project... Vestine was hired in January 1938 as a research assistant and within a year was promoted to chief of the DTM's section [on] Land Magnetic Survey.

[It] resulted in Vestine's most important work, published in two volumes in 1947, *The Description of the Earth's Main Magnetic Field and Its Secular Change, 1905-1945* and *The Geomagnetic Field: Its Description and Analysis*. The latter volume concentrated on variations of Earth's magnetism. These unprecedented analyses made possible advances in theories of geomagnetism.

Vestine contributed fundamentally to the full range of geomagnetic investigation, from events in Earth's core to others in the magnetosphere....

In 1946 Vestine broadened his duties at the DTM, becoming head of the Section on Theoretical Geophysics. While he maintained his role in geomagnetic research, he also collaborated on seismic and cosmic ray projects.

He left the DTM and joined RAND Corporation in 1957 to devote more time to space and planetary science and national security issues.

Vestine died in Santa Monica, California 18 July 1968. A crater on the Moon was named for him in honor of his contributions to space science.

### **Scope and Content**

This collection consists of the personal papers of E.H. Vestine and serves to illuminate his professional life while he was an employee of the Carnegie Institution of Washington. The bulk of the collection materials are from the 1940s during which time work was done under contract at DTM for various agencies, such as Naval Ordnance (NOrd) Laboratory.

### **Arrangement**

The original file names were kept for all of the folders in this collection. This collection was weeded heavily.

This collection is arranged into two series:

Series 1: Research and Reports, 1894, 1923-1950, n.d.

Subseries 1: Files, 1894, 1923-1949

Subseries 2: Computation Notebooks, 1932-1950, n.d.

Series 2: Correspondence and Memoranda, 1936-1947

**Series 1: Research and Reports, 1894, 1923-1950, n.d.**

This series contains Vestine's office files and computation notebooks. It is divided into two subseries.

**Series 1, Subseries 1: Files, 1894, 1923-1949**

This subseries contains office files (presumably) left behind by Vestine when he left DTM. The files contain his research on places, instruments, field observations, and other geomagnetic related matters. The files are arranged alphabetically. Many of the folders in this series have items worth noting:

- Expeditions -- includes "Instructions for the Scientific Work of the MacMillan Arctic Expedition of 1923-1924"
- Fluxmeters -- includes correspondence and reports (with photographs) relevant to College, Alaska, & Cheltenham, MD magnetic observatories
- Ivigtut, Greenland -- contains correspondence between J.A. Fleming and outside people regarding the Ivigtut observatory
- Magnetic secular change: Western Hemisphere -- contains work completed by Lucille Laporte, a computer at DTM
- Observers' reports -- contains reports from Earl Hanson, J.P. Ault, etc. and correspondence between J.A. Fleming and various observers
- Reduction of field observations -- contains a report entitled "Geophysical Work in the USSR" dated 1944
- Secular variation [L.A. Bauer?] -- this report may be L.A. Bauer's rough sketch of thesis on secular variation.

**Series 1, Subseries 2: Computation Notebooks, 1932-1950, n.d.**

This subseries contains Vestine's computation notebooks. They are arranged alphabetically as the dates of some were not apparent.

**Series 2: Correspondence and Memoranda, 1936-1947**

This series is arranged alphabetically. It includes Vestine's correspondence with various observatories, agencies, and NOrd.

## Folder Listing

	<u>Box</u>	<u>Folder</u>
<b>Series 1: Research and Reports, 1894, 1923-1950, n.d.</b>	1	1
<b>Subseries 1: Files, 1894, 1923-1949</b>		
Expeditions, 1923-1925		2-3
Fluxmeters, 1942-1944		4
Isomagnetic Charts, 1942-1947		5
Ivigut, Greenland, 1943-1944		6
Land magnetic observations, 1927		7
Land magnetic survey, 1938-1941		8
Land magnetic survey: Annual reports, 1939-1946		9
Land magnetic survey: Monthly reports, 1940-1942		10
Magnetic secular change: Western hemisphere, 1946		11
Miscellaneous research, 1942-1944		12
Monthly reports: DTM, 1946		13
Observers' reports, 1928-1938		14
Progress reports, 1942-1946	2	1
Reduction of field observations, [1940s]		2
Reduction of field observations: Instructions, 1942-1944		3
Reduction of field observations: Instructions, 1944		4
Reduction of geomagnetic observations to epoch, 1943		5
Secular variation [L.A. Bauer?], 1894	3	1
Work reports, 1943-1949	3	2
Work reports: NOrd, 1945, [1940s]	2	6
Work to be completed, 1944		7
<b>Series 1: Research and Reports, 1894, 1923-1950, n.d.</b>		
<b>Subseries 2: Computation Notebooks, 1932-1950, n.d.</b>		
Current Systems of Magnetic Storms, 1938-1939	4	
Storms, 1932-1933		
Storms Following Sudden Commencements A: Cheltenham Tucson San Juan, n.d.		
Storms Following Sudden Commencements B: I - Horizontal Intensity/III Ionospheric Changes During Storms, ca. 1950		
Storms Following Sudden Commencements C: II Initial Phase, n.d.		
Storms Following Sudden Commencements D: Graphs, n.d.		
Sudden Commencements Crochets Initial Phase of Storms Book (1) , n.d.	5	
Sudden Commencements Crochets Initial Phase of Storms Book (2) , n.d.		
Work on Wiener's Time Series Analysis by Laguerre Polynomials, ca.1941		

	<u>Box</u>	<u>Folder</u>
<b>Series 2: Correspondence and Memoranda, 1936-1947</b>		
Alaska: Correspondence, 1942-1944	2	8
General correspondence: A-Z, 1936-1940		9
General correspondence: A-M, 1941-1944		10
General correspondence: N-Z, 1941-1944		11
Miscellaneous correspondence, 1942-1945		12
Miscellaneous memoranda, 1942-1945		13
Navy: Correspondence, 1940-1945		14
Navy: Correspondence, 1946-1947		15
Navy: Correspondence re: reports and memoranda, 1942-1945		16
Office chart, 1946	3	3

### **Subject Terms**

Topics:	Bauer, L. A. (Louis Agricola), 1865-1932 Fleming, J. A. (John Adam), 1877-1956 Geomagnetism Geomagnetic observatories Geophysics Hanson, Earl Parker, b. 1899 Parkinson, W. C. (William Charles), 1918-
Occupation:	Geophysicists
Corporate Names:	Carnegie Institution of Washington. Department of Terrestrial Magnetism
Forms:	Annual reports Correspondence Laboratory notebooks Monthly reports Progress reports

### **Bibliography**

Good, Gregory A. "Ernest Harry Vestine." *American National Biography*, ed. John A. Garraty and Mark C. Carnes, 22:343-344. New York: Oxford University Press, 1999.

### **Related Collections**

Papers of E.H. Vestine, 1932-1968. [unprocessed] Manuscript Division, Library of Congress, Washington, D.C.