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Center for History of Physics
Niels Bohr Library & Archives



Forgotten Trailblazers: The History of Women and Minorities in Physics and Astronomy

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Preliminary Research

Articles

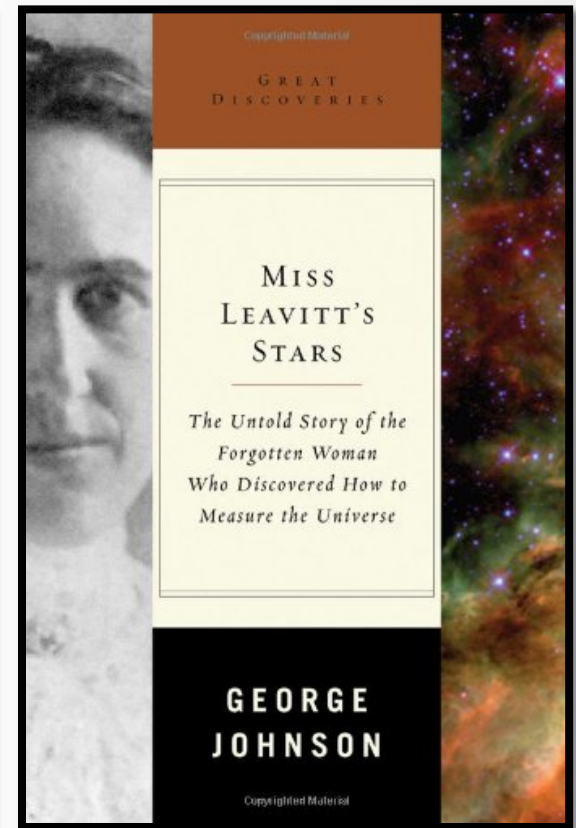
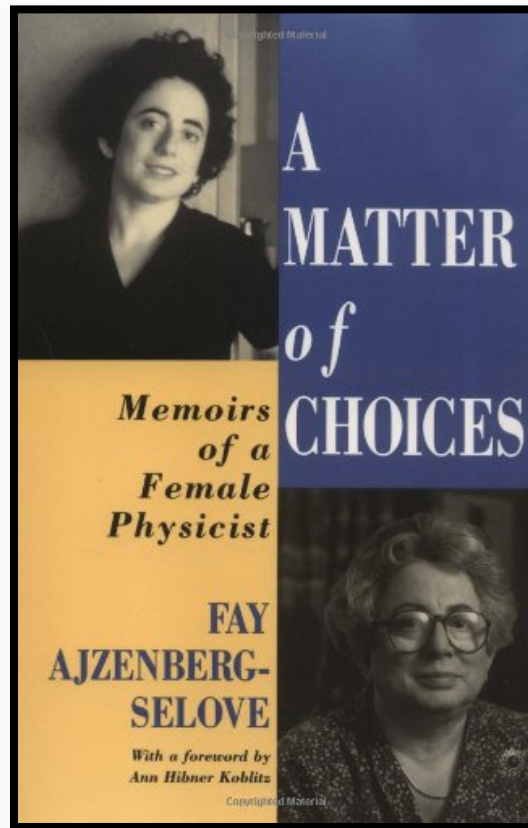
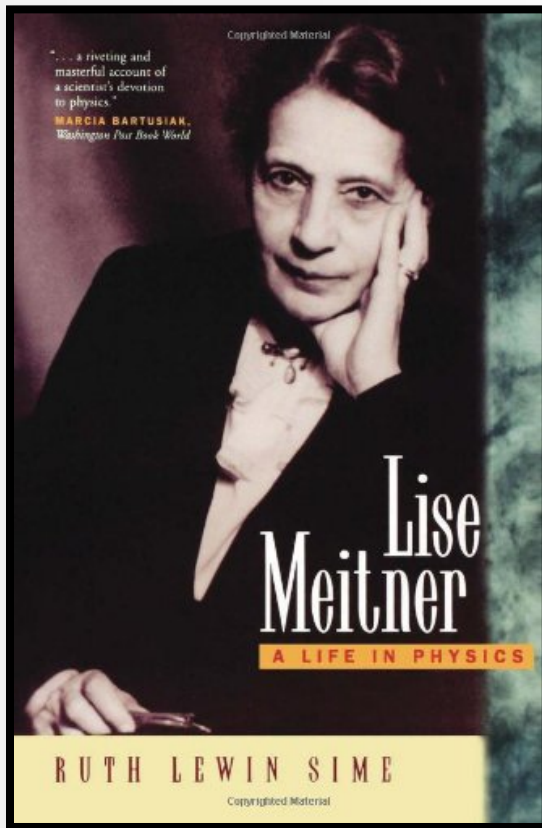
*“**Obligatory Amateurs**: Annie Maunder (1868-1947) and British Women Astronomers at the Dawn of Professional Astronomy.”* – Marilyn Ogilvie

*“**Intimate Inmates**: Wives, Households, and Science in Nineteenth-Century America.”* – Debra Lindsay

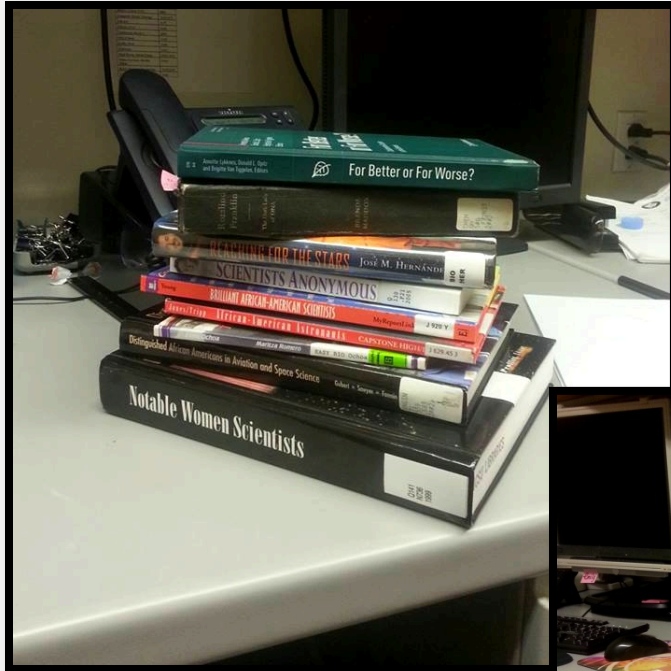
*“**‘Yours for Science’**: The Smithsonian Institution's Correspondents and the Shape of Scientific Community in Nineteenth-Century America.”* – Daniel Goldstein

Preliminary Research

Books



Preliminary Research



Preliminary Research

Source Evaluation

Citation:	
Format:	
Keywords:	
Notes:	
Summary:	

Preliminary Research

Source Evaluation

Citation:	Byers, Nina and Gary Williams, eds. <i>Out of the Shadows: Contributions of Twentieth-Century Women to Physics</i> . Cambridge, UK: Cambridge University Press, 2010.
Format:	Book
Keywords:	Women, 20 th Century
Notes:	Good overview of 20 th century female physicists – wide range of fields
Summary:	<p>“Out of the Shadows” gives profiles of forty female physicists between the dates of 1876 and 1976.</p> <p>The book focuses heavily on the scientific work of each physicist and their contributions to their respective fields, rather than their personal life, although biographies are included in each chapter.</p> <p>The physicists that are included in the book (in order of birth date):</p> <ol style="list-style-type: none">1. Hertha Ayrton2. Margaret Eliza Maltby3. Agnes Pockels ...

Preliminary Research

Primary sources

Journal of Williamina Paton Fleming
Curator of Astronomical Photographs, Harvard College Observatory.

March 1, 1900. In the astrophotographic building of the Observatory
12 women, including myself, are engaged in the
care of the photographs; identification, examination
and measurement of them; reduction of these
measurements, and preparation of results for the

Harvard University – Harvard University Archives / Fleming, Williamina Paton Stevens. Journal of
Williamina Patton Fleming. 1900.

Recurring Themes and Issues

- Anti-nepotism laws
- Close male colleagues who would “bridge the gap”
- Collaborative couples
- Lack of recognition – passed over by the Nobel committee



Lesson Plans

Considerations

- Comparing to National Science Education Standards
- Need to include
 - Objective
 - Necessary materials and equipment
 - “Prep time” and “in class time”
- Suitable for a wide range of classes
- Not too focused on one topic

Lesson Plans

Examples

Outcasts and Opportunities: The Effect of World War II on the Careers of Female Physicists

Inge Lehmann: “The Only Danish Seismologist”

Debate: Should These Women Have Won a Nobel Prize?

Lesson Plans: Women and Minorities in Physics & Astronomy



Collaboration and Competition: Scientific Couples in Physics and Astronomy

Objective: Students will learn about familial collaboration, which was one of the primary ways for women to participate in science.

Prep Time: 2-3 hours

In-class Time: 45 minutes

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The Journal of Williamina Paton Fleming

Objective: Students will learn about the personal and professional activities of astronomer Williamina Paton Fleming from entries in her journal.

Prep Time: 15 minutes

In-class Time: 45 minutes

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She is an Astronomer: Experiences of Contemporary Women Astronomers

Objective: Students will learn about the experiences of contemporary women astronomers through profiles assembled in the "She is an Astronomer" survey project.

Prep Time: 15 minutes

In-class Time: 45 minutes

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Inge Lehmann: "The Only Danish Seismologist"

Objective: Students will learn about the life and work of geophysicist Inge Lehmann, through a variety of sources.

Prep Time: 15 minutes

History Programs news



AIP's 2011 history conference generated



AIP's Center for History of Physics celebrates anniversary



Roger Stuewer awarded Abraham Pais Prize for History of Physics

[MORE HISTORY PROGRAM NEWS](#)

Noteworthy



This is a short history link



Another notable thing out



Maria Goeppert-Mayer and James Franck

Thanks to...

- Greg Good
- Emily Margolis
- Ada Uzoma
- Amanda Nelson
- Toni Sauncy
- Kendra Redmond

Sources:

Emilio Serge Visual Archives

Harvard University Library Archives