

Sourcing Primary Sources - October 15, 2025
TRIUMPHS Society Members PSP Discussion Series

I. Pre-reading Discussion

[Pitfalls and Potential Solutions to Your Primary Source Problems](#)

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II. Session Notes and Links

A. Two broad categories of finding sources:

1. Have a good secondary source that points to appropriate primary source and helps connect the primary source to modern teaching /pedagogy
2. Have an idea for a topic and need to go to the literature to find (and mine) an appropriate source

a) Activity: Let's say you want to introduce the least squares method to a stats class using a primary source. What did you find?

(1) Group 1 - Adam, Beverly, Matt, Susan

(a) We looked at our bookshelves, found books and checked indices and/or ToC:

- (i) Stigler, S.M. (1986). *The History of Statistics: The Measurement of Uncertainty before 1900*.
- (ii) Boyer, C.B. (1991). *A History of Mathematics, 2nd Edition*.
- (iii) Heyde, C.C. & Seneta, E. (Eds.) (2001). *Statisticians of the Centuries*.
- (iv) ?History of Analysis?

(2) Group 2 - Janet, Jerry, Michael

(a) Translation of Legendre's work:

<https://www.york.ac.uk/depts/math/histstat/legendre.pdf>

(b) On Gauss' Priority in the Discovery of the Method of Least Squares:

<https://www.jstor.org/stable/41134010>

(c) Gauss and the Invention of Least Squares:

<https://www.jstor.org/stable/2240811?seq=6>

(3) Group 3 - Colette, Danny, Erica

(a) Books and translations of books - 1820 attack on Gauss:

https://www.sciencedirect.com/science/article/pii/S0315086077900325?ref=pdf_download&fr=RR-9&rr=98f176ad9c5567a5

(b) Studies in the History of Probability and Statistics. XXIX: The Discovery of the

Method of Least Squares

<https://www.jstor.org/stable/2334569?seq=13>

- (c) An attack on Gauss, published by Legendre in 1820:
<https://www.sciencedirect.com/science/article/pii/0315086077900325>
- (d) From Grattan-Guinness' *Landmark Writings*, citation of a paper by Legendre that described least squares before Gauss, but without a derivation: *Nouvelles méthodes pour la détermination des orbites des comètes* (1806)
- (e) Gauss and the Invention of Least Squares:
<https://www.jstor.org/stable/2240811?seq=6>
- (f) Gantmacher, F.R. (1960) *The Theory of Matrices*, Volume 1. Chelsea Publishing, New York, 374 p.

(4) Group 4 - Bud, Dominic, Ken

- (a) Google scholar: A history of least squares written in 1877:
<https://www.jstor.org/stable/pdf/2635472.pdf>
- (b) [See AI Conversation below.](#)

III. Gots & Wants

Please write one thing you “got” from the session, and one “want” (e.g., something you would like to follow up on or that you wonder about).

Name	Got	Want
Jennifer	Learned more about the historical development of the least squares method =)	This session made me think about if it would be possible to write a PSP where the primary source is mathematical artwork, specifically with teaching tessellations and symmetry to a liberal studies undergrad mathematics audience
Michael	Crowdsourcing is useful and fun.	
Beverly	I really appreciate the list of resources you all found! I've been wanting to do a PSP on Least Square Regression (for stats/prop) for a long time.	Co-authors for such a PSP.

[illegible]

Chat GPT Conversation

Dominic: Can you give me five good sources on the development of the method of least squares?

ChatGPT said:

Here are **five strong sources** (articles or book-length studies) on the history and development of the method of least squares, along with brief notes on what each contributes. If you like, I can also pull up full-text PDFs (where available) or more specialized ones (e.g. geodesy, astronomy, statistics).

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1. **Oscar Sheynin, "On the history of the principle of least squares," *Archive for History of Exact Sciences* 46 (1993), 39-54**
This is a careful, scholarly survey that covers prehistory, early proofs, priority disputes, and development of justifications of least squares. [SpringerLink](#)
 2. **R. L. Plackett, "A Historical Note on the Method of Least Squares," *Biometrika* 36 (1949), 458-460**
This short but classic note collects earlier references and traces how the idea was transmitted, including a discussion of Legendre and Gauss. [JSTOR+1](#)
 3. **J. Dutka, "Robert Adrain and the method of least squares," *Archive for History of Exact Sciences* (1990)**
Dutka examines the lesser-known American line of development (Robert Adrain, 1808) and places it in the broader European debate about least squares. [SpringerLink](#)
 4. **"Gauss and the Invention of Least Squares," in *The Annals of Statistics* (reprinted / review version)**
This is Stephen M. Stigler's classic article on Gauss's role, his claim to priority, and how the method was developed and justified. It remains a standard reference for historians of statistics. [Project Euclid+2JSTOR+2](#)
 5. **"Gauss' method of least squares: an historically-based introduction" (thesis or article, e.g. Brand, LSU 2003)**
This is a pedagogical but well-documented historical introduction combining mathematics and history, tracing Gauss's steps, his proofs, and how later generations built on them. [LSU Scholarly Repository+1](#)
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Supplementary/Contextual Sources

- Mansfield Merriman, “On the History of the Method of Least Squares,” *The Analyst*, Vol. 4 (1877) — an early bibliography and historical sketch. [JSTOR](#)
- A. “A tutorial history of least squares with applications to astronomy and geodesy” — useful for seeing how the method was adopted in scientific practice. [ScienceDirect](#)
- O. Sheynin, in *Theory of Probability: A Historical Essay*, contains useful background on the error theory milieu in which least squares was developed. [arxiv.org](#)

If you like, I can assemble a thematic reading list (e.g. “justifications proofs,” “priority disputes,” “application in geodesy”) or send you direct links or PDFs where available. Do you want me to do that?