

Women in Astronomy: An Introductory Resource Guide

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This guide to non-technical English-language materials is not meant to be a comprehensive or scholarly introduction to the complex topic of the role of women in astronomy. It is simply a resource for educators and students who wish to begin exploring the challenges and triumphs of women of the past and present. It's also an opportunity to get to know the lives and work of some of the key women who have overcome prejudice and exclusion to make significant contributions to our field. We only include a *representative* selection of living women astronomers *about whom non-technical material at the level of beginning astronomy students is easily available*. Lack of inclusion in this introductory list is not meant to suggest any less importance. We also don't include Wikipedia articles, although those are sometimes a good place for students to begin. Suggestions for additional non-technical listings are most welcome.



Vera Rubin Annie Cannon & Henrietta Leavitt Maria Mitchell Cecilia Payne

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7. A Sampling of Articles/Books about Other Individual Women Astronomers

1. Written Resources on the History of Women in Astronomy

- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. Covers the lives and careers of 21 women astronomers, past and present; written for teenagers and up.
- Bernardi, G. "Who Was the First Professional Woman Astronomer? Christine Kirch" in *Sky & Telescope*, Jan. 2019, p. 68.
- Dvorak, John "The Women Who Created Modern Astronomy" in *Sky & Telescope*, Aug. 2013, p. 28. Focuses on the work of Annie Cannon, Antonia Maury, and Wilhelmina Fleming in classifying and understanding stars.
- Ghez, Andrea & Cohen, Judith *You Can Be a Woman Astronomer*. 2006, Cascade Press. A picture book for children from grades 3 - 5.
- James, C. "Edward and Mina" in *Astronomy*, July 2002, p. 46. Despite the title, this treats several women who worked at the Harvard Observatory.
- Kidwell, Peggy "Women Astronomers in Britain" in *Isis*, Sep. 1984, vol. 75, p. 534.
- Lankford, John "Science and Gender: Women in the American Astronomical Community" in his *American Astronomy*. 1997, U. of Chicago Press. 72-page sociological overview, with statistics.
- Lankford, J. & Slavings, R. "Gender and Science: Women in American Astronomy 1859-1940" in *Physics Today*, Mar. 1990, vol. 43, p. 58.
- Mack, P. "Straying from Their Orbits: Women in Astronomy in America" in G. Kass-Simon & P. Farnes, eds. *Women of Science*. 1990, Indiana U. Press.
- Mack, P. "Strategies and Compromises: Women in Astronomy at Harvard College Observatory" in *Journal for the History of Astronomy*, vol. 21, p. 65 (1990).
- McKenna-Lawlor, Susan *Whatever Shines Should be Observed*. 2003, Springer. The story of five 19th century women who made contributions to astronomy and science; too bad the price from the publisher is inappropriately high for a popular book.
- Rizzo, P. "Early Daughters of Urania" in *Sky & Telescope*, Nov. 1954, p. 7.
- Rubin, Vera "Women's Work: Women in Modern Astronomy" in *Science* 86, Jul/Aug. 1986, p. 58.
- Sobel, Dava *The Glass Universe*. 2016, Viking. Rich, deeply researched, marvelous book on the women who worked at Harvard at the start of the 20th century and changed the way we understood the stars.
- Spradley, J. "Women and the Stars" in *The Physics Teacher*, Sep. 1990, p. 372.
- Warner, Deborah "Women Astronomers" in *Natural History*, May 1979, p. 12.

2. Written Resources on Issues Facing Women

- Bell Burnell, Jocelyn "So Few Pulsars, So Few Females" in *Science*, 23 April 2004, vol. 304. no. 5670, p. 489.
- Davenport, J., et al. "Studying Gender in [AAS] Conference Talks": <https://arxiv.org/abs/1403.3091>
- Geller, Margaret "The Black Ribbon" in *Science*, 28 August 1998, vol. 281 no. 5381 p. 1278. On-line at: <https://science.sciencemag.org/content/281/5381/1278.full>
- Kinney, Anne, et al, eds. *Meeting the Challenges of an Increasingly Diverse Workforce: Women in Astronomy and Space Science*. 2009, NASA. The entire book is available free on the web as a PDF file: <https://cswa.aas.org/MEETING/WomeninAstroProceedings.pdf>

Urry, C. Megan, et al, eds. *Women in Astronomy: Proceedings of a 1992 Workshop*. 1993, Space Telescope Science Institute. (Now on web at: <http://www.stsci.edu/institute/conference/wia/>)
STATUS is the magazine of the Committee on the Status of Women of the American Astronomical Society (it is a treasure trove of materials, issues, personal stories): <https://cswa.aas.org/STATUS.html>

3. Web Resources on the History of Women in Astronomy

Bibliography by Ruth Freitag: <http://www.loc.gov/rr/scitech/womenastro/womenastro-intro.html>

A far more comprehensive and scholarly bibliography, organized by last name, of written articles on women in astronomy. Ruth Freitag's work was the early inspiration for the resource guide you are reading.

4000 Years of Women in Science: <http://4kyws.ua.edu/>

Maintained by two women astronomers, this site includes brief information on women from many fields of science, not just astronomy. For 20th century women scientists, see:

<http://4kyws.ua.edu/20th.century/20th.shtml>

The Woman Astronomer: <http://www.womanastronomer.com/>

Debra Davis, a Colorado amateur astronomer, keeps this site and newsletter devoted to both amateurs and professionals.

Women at NASA: <http://women.nasa.gov/>

Profiles of women who work for the US Space Agency, including a number of astronomers and astrobiologists. The profiles include personal statements that can be quite moving and inspiring.

Jocelyn Bell Burnell (Oxford): "A Celebration of Women in Astronomy" (a talk in 2012 in Edinburgh; we only hear the audio, there is no video, but it is a fascinating public talk with profiles of specific women, including Caroline Herschel and Vera Rubin, and discussions of trends): <http://www.youtube.com/watch?v=50PyimUE5s>

Emily Rice (City University of New York) gives a talk on contributions of women to astronomy (with many historical and contemporary examples and an analysis of modern trends): <http://www.youtube.com/watch?v=5vMR7su4fi8>

Beverly J. Smith (East Tennessee State U.) gives a powerpoint presentation on the history of women in astronomy and current statistics about their participation: <https://www.youtube.com/watch?v=yAa-gCSUwEE>

Video of a 2017 talk by Mia Bovill on "The Harvard Computers and the Classification of the Stars": <https://www.youtube.com/watch?v=dhF2bOrKWks> (the talk starts at 16 min 30 sec into the video)

4. Web Resources on Issues Facing Women

American Astronomical Society Committee on the Status of Women: <https://cswa.aas.org/>

A rich site with back issues of the valuable "Status" newsletter, a database of living women astronomers, legal resources, conference proceedings, and discussion of issues related to the role of professional women in the field. For good resources from other fields they recommend, see:

<https://cswa.aas.org/resources.html>

Seager, Sara "So Many Exoplanets, So Few Women Scientists" blog post at:

https://www.huffpost.com/entry/women-in-science_b_2471980

10 Tips for Undergraduate Women Science Students (from Astronomer Sara Seager):

<http://www.usnews.com/education/blogs/professors-guide/2010/08/11/10-tips-for-women-students-in-science-fields>

Women at Work: A Meeting on the Status of Women in Astronomy:

<http://www.stsci.edu/institute/conference/wia/>

Proceedings of a pioneering 1992 meeting with useful local and national perspectives.

Women in Planetary Science: <http://womeninplanetaryscience.wordpress.com/profiles/> (Profiles of more than 50 women active in studying the solar system, and a discussion of issues they face)

Women in Astronomy Blog (from the American Astronomical Society):

<http://womeninastronomy.blogspot.com/>

Finkbeiner, Ann "Good Morning, Gentlemen and Meg: Astronomy, A Woman's Choice" (an article compiling personal history and suggestions from interviews of 15 noted women astronomers):

<https://cswa.aas.org/status/2001/JANUARY2001/Finkbeiner.html>

The Baltimore Charter (spelling out what can be done to help improve the status and working conditions of women in astronomy): <https://cswa.aas.org/bc.html>

Why So Few? Women in Science, Technology, Engineering, and Mathematics (2010 research report from the Association of University Women discusses key research findings on factors that block women's participation and progress in science): <http://www.aauw.org/resource/why-so-few-women-in-science-technology-engineering-and-mathematics/>

Women in Astronomy 2009 (a 3-minute video, made in conjunction with the 2009 meeting about women in astronomy. Concise framing of issues through interviews with leaders such as Vera Rubin, Meg Urry, and Dara Norman): <http://www.youtube.com/watch?v=1QyMB0qagZs>

Jocelyn Bell Burnell TED talk on "Reflections on Women in Science: Diversity and Discomfort" (a 15-minute talk with some of her personal history and statistics about women in astronomy):

<http://www.youtube.com/watch?v=jp7amRdr30Y>

Meg Urry colloquium on "Women in Science: Why So Few?" (an hour-long illustrated talk on statistics and issues, not specifically about astronomy, but with many eye-opening ideas):

<http://vimeo.com/35730552>

5. Material on Some Specific Women Astronomers of the Past

Cannon, Annie (1863-1941)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Cannon.

Bok, Priscilla "Annie Jump Cannon 1863-1941" in *Publications of the Astronomical Society of the Pacific*, June 1941, vol. 53, p. 168. (Available on the Web at:

<http://adsabs.harvard.edu/abs/1941PASP...53..168B>)

Camp, Carole *American Astronomers: Searchers and Wonderers*. 1996, Enslow. One chapter of this book for teen readers is devoted to Cannon's life and work.

Emberlin, D. *Science: Contributions of Women*. 1977, Dillon Press. Includes a section on Cannon, pp. 7-27.

Greenstein, George "The Ladies of Observatory Hill" in *American Scholar*, Feb. 1993, p. 437. (Reprinted in his book *Portraits of Discovery*, 1998, John Wiley.)

Hearnshaw, John *The Analysis of Starlight*. 1986, Cambridge U. Press. See Chapter 5.

Kidwell, P. "Three Women of American Astronomy" in *American Scientist*, May/June 1990, p. 244.

Merrill, P. "Annie Jump Cannon" in *Monthly Notices of the Royal Astronomical Society*, vol. 102, no. 2, p. 74 (1942).

Sobel, Dava *The Glass Universe*. 2016, Viking. Includes a considerable amount of material on Cannon and her mentoring of other women.

Web Sites:

Brief biography at ScienceWomen Site: <http://www.sdsc.edu/ScienceWomen/cannon.html>

Annie Cannon pages at Wellesley College: <http://academics.wellesley.edu/Astronomy/Annie/> Part of a student project, but with good local historical information.

Article on MacTutor: <http://www-history.mcs.st-andrews.ac.uk/Biographies/Cannon.html>

Aceves, Ana: Annie Jump Cannon, Star Classifier (a short post on the Sky & Telescope website, 2016:

<http://www.skyandtelescope.com/astronomy-resources/annie-jump-cannon-star-classifier/>

Project Continua Page: <http://www.projectcontinua.org/annie-jump-cannon/>

Obituary by H. A. Bruck in *The Observatory*, Vol. 64, p. 113-115 (1941):
<http://adsabs.harvard.edu/abs/1941Obs....64..113B> (click on “full printable article PDF”)
Information on video about Cannon’s life and work: <http://cfa-www.harvard.edu/~alexg/ajc.html>

Clerke, Agnes (1842-1907)

- Bruck, Mary "Agnes Mary Clerke: Chronicler of Astronomy" in *Quarterly Journal of the Royal Astronomical Society*, Mar. 1994, p. 59. Lengthy profile, on the web at:
<http://adsabs.harvard.edu/full/1994QJRAS..35...59B>
- Bruck, Mary *Agnes Mary Clerke & the Rise of Astrophysics*. 2002, Cambridge U. Press.
- Bruck, Mary “Agnes Mary Clerke: Ever Popular Historian of Astronomy” in *Antiquarian Astronomer*, 2004, iss. #1, p. 3. On the web at: <http://adsabs.harvard.edu/full/2004AntAs...1....3B>
- Clover, Edward “Agnes Mary Clerke: Real Time Historian of Astronomy” in *Astronomy & Geophysics (the magazine of the Royal Astronomical Society)*, June 2007, vol. 48, p. 3.25. (On the web at:
<https://academic.oup.com/astrogeo/article/48/3/3.25/200790/Agnes-Mary-Clerke-Real-time-historian-of-astronomy>)
- Lightman, B. “Constructing Victorian Heavens: Agnes Clerke and the "New Astronomy" in *Natural Eloquence: Women Reinscribe Science*. Gates, Barbara & Shteir, Ann, eds. 1997, U. of Wisconsin Press.
- McKenna-Lawlor, Susan *Whatever Shines Should be Observed*. 2003, Springer. The story of five 19th century women who made contributions to astronomy and science, including Clerke.
- Russell, Sarah “Agnes Mary Clerke: Stars, Systems, Problems” in *Astronomy & Geophysics*, 1 June 2016, Vol. 57, Issue 3, Pages 3.16ff. On the web at:
<https://academic.oup.com/astrogeo/article/57/3/3.16/1741860>
- See, T.J.J. “Some Recollections of Agnes Mary Clerke” in *Popular Astronomy*, 1907, Vol. 15, No. 6, p. 323.
- Weitzenhoffer, Kenneth "The Prolific Pen of Agnes Clerke" in *Sky & Telescope*, Sep. 1985, p. 211.

Web Sites:

- Brief biography from the Catholic Encyclopedia: <http://www.newadvent.org/cathen/04051b.htm>
- Biography at the History of Mathematics website: <http://www-history.mcs.st-andrews.ac.uk/Biographies/Clerke.html>
- 1907 Obituary from the *Astrophysical Journal* by Margaret Huggins:
<http://adsabs.harvard.edu/abs/1907ApJ....25..226H> (click on full article)
- Brief 1907 obituary in the *Times* of London:
http://en.wikisource.org/wiki/The_Times/1907/Obituary/Agnes_Mary_Clerke
- Debakcsy, Dale: Agnes Mary Clerke: At the Nerve Center of 19th Century Astrophysics” at:
<http://womenshouldknow.net/agnes-mary-clerke-nerve-center-19th-century-astrophysics/>
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Fleming, Williamina (1857-1911)

- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Fleming.
- Camp, Carole *American Astronomers: Searchers and Wonderers*. 1996, Enslow. One chapter of this book for teen readers is devoted to Fleming’s life and work.
- Hirshfeld, Alan “Williamina Fleming: The Brief Life of a Spectrographic Pioneer” in *Harvard Magazine*, Jan/Feb. 2017. On the web at: <https://harvardmagazine.com/2017/01/williamina-fleming>
- Jones, Bessie & Boyd, Lyle *The Harvard College Observatory (1839-1919)*. 1971, Harvard U. Press. See several sections of this history for her contributions.

Nelson, Sue "From Scotch Maid to Innovative Astronomer" in *Astronomy & Geophysics*, 1 June 2016, vol. 57, issue 3, p. 3.12. On-line at: <https://academic.oup.com/astrogeo/article/57/3/3.12/1741845>

Sobel, Dava *The Glass Universe*. 2016, Viking. Includes a considerable amount of material on Fleming's life and work.

Spradley, J. "The Industrious Mrs. Fleming" in *Astronomy*, July 1990, p. 48.

Spradley, J. "Two Centennials of Star Catalogs Compiled by Women" in *Astronomy Quarterly*, vol. 7, no. 3, p. 177 (1990).

Web Sites:

Brief biography at Woman Astronomer site: <http://www.womanastronomer.com/wfleming.htm>

Short biographical article at the New England Historical Society:
<http://www.newenglandhistoricalsociety.com/williamina-fleming-boston-maid-discovered-stars/>

Fleming, Wilhelmina: Obituary (1911) by Annie Cannon from the *Astrophysical Journal*:
<http://adsabs.harvard.edu/abs/1911ApJ....34..314C> (click on the PDF box at the end to see the article itself)

Her page at Project Continua: <http://www.projectcontinua.org/williamina-paton-fleming/>

Herschel, Caroline (1750-1848)

Alic, Margaret *Hypatia's Heritage: A History of Women in Science*. 1986, Beacon Press. Chapter 9 has a good section on Herschel's work.

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Herschel.

Belkora, Leila *Minding the Heavens: The Story of Our Discovery of the Milky Way*. 2003, IOP Publishing. Chapter 4 is about the Herschels.

Brock, Claire *The Comet Sweeper: Caroline Herschel's Astronomical Ambition*. 2008, Totem Books. A popular-level biography. A radio program interviewing the author can be found at the end of the web sites below.

Gould, Paula "Two Good Women, or Too Good to Be True?" (a 2002 essay from *Science*, considering how Caroline Herschel and Mary Somerville are treated by history, in contrast with men of their time): <https://science.sciencemag.org/content/296/5574/1805.full>

Higgins, F. *Sweeper of the Skies: Caroline Herschel*. 1967, Follett. For young people.

Hoskin, Michael "Caroline Herschel's Life of Mortification and Disappointments, in *Journal for the History of Astronomy*, Nov. 2014, Vol. 45, No. 4, p.442-466.

Hoskin, Michael "In Caroline Herschel's Footsteps" in *Sky & Telescope*, Aug. 2007, p. 59.

Hoskin, Michael "Astronomy's Matriarch" in *Sky & Telescope*, May 2005, p. 42-46.

Hoskin, Michael, ed. *Caroline Herschel's Autobiographies*. 2003, Science History Publications. Annotated versions of the autobiographies she wrote in her 70's and 90's.

Hoskin, Michael *The Herschel Partnership, as Viewed by Caroline*. 2003, Science History Publications. By a noted historian of astronomy. On the web at:

Hughes, D. "Caroline Herschel: Comet Huntress" in *Journal of the British Astronomical Association*, Apr. 1999, vol. 109, p. 78. On the web at: <http://adsabs.harvard.edu/full/1999JBAA..109...78H>

Lemonick, Michael *The Georgian Star: How William and Caroline Herschel Revolutionized Our Understanding of the Cosmos*. 2008, W. W. Norton. A popular-level history of their partnership by a science reporter.

Lubbock, C. *The Herschel Chronicle*. 1933, Cambridge U. Press. Family chronicle of William and Caroline, by his grand-daughter. On the web at: <https://books.google.com/books?id=Hcc5AAAAIAAJ>

McCully, Emily *Caroline's Comet*. 2017, Holiday House. Illustrated children's book.

Ogilvie, M. "Caroline Herschel's Contributions to Astronomy" in *Annals of Science*, vol. 32, p. 149 (1975).

Ogilvie, Marilyn: *Searching the Stars: The Story of Carolyn Herschel*. 2011, History Press. On the web at: <https://books.google.com/books?id=2LgTDQAAQBAJ>
Winterburn, Emily *The Quiet Revolution of Caroline Herschel: The Lost Heroine in Astronomy*. 2018, History Press.

Web Sites:

Biography at MacTutor Site:

http://www-groups.dcs.st-and.ac.uk/~history/Biographies/Herschel_Caroline.html

Flanders, Tony “Following in Caroline Herschel’s Footsteps” (a guide to re-observing some of the objects she saw, for amateurs): http://www.skyandtelescope.com/observing/Caroline_Herschel_Objects.html

The full text of the 1879 (2nd) edition of the *Memoirs and Correspondence of Caroline Herschel* has been digitized and is freely available from Google Books at:

<http://books.google.com/books?id=9kIBAAAAQAAJ>

Nicholas, Siobhán: *Stella* (a play about Caroline Herschel):

<http://www.guardian.co.uk/science/blog/2012/may/14/play-astronomer-caroline-herschel>

March 2007 BBC radio program about her:

http://www.bbc.co.uk/radio4/womanshour/03/2007_11_thu.shtml

Obituary in *Monthly Notices of the RAS*:

<http://adsbit.harvard.edu/full/seri/MNRAS/0008/0000066.000.html>

Hoffleit, Dorrit (1907 - 2007)

Hoffleit, Dorrit "Some Glimpses from My Career" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Jan/Feb. 1992, p. 16.

Hoffleit, Dorrit *Misfortunes as Blessings in Disguise*. 2002, American Association of Variable Star Observers. Her autobiography.

Larsen, Kristine “Variable Stars and Constant Commitments: The Stellar Career of Dorrit Hoffleit” in the *Journal of the AAVSO*, 2012, vol. 40, p. 44. On the web at:

<https://www.aavso.org/sites/default/files/jaavso/v40n1/44.pdf>

Larsen, Kristine “An Interview with Dorrit Hoffleit” in the *Journal of the AAVSO*, 2009, vol. 37, p. 52.

On the web at: <https://www.aavso.org/media/jaavso/2568.pdf>

Levy, David “Astronomy’s First Lady” in *Sky & Telescope*, Feb. 1999, p. 89.

Philip, A.G. D., et al, eds. *Anni Mirabiles: A Symposium Celebrating the 90th Birthday of Dorrit Hoffleit*. 1999, L. Davis Press.

Web Sites:

Brief Biography at AAVSO site: <http://www.aavso.org/memorial-dorrit-hoffleit>

Brief Biography at the Connecticut Hall of Fame Site:

<http://www.cwhf.org/inductees/science-health/dorrit-hoffleit>

Brief Obituary from *Sky & Telescope*: <http://www.skyandtelescope.com/astronomy-news/dorrit-hoffleit-19072007/>

DeVorkin, David “Interview with Dorrit Hoffleit” 1979, for the Center for the History of Physics; transcript at: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4677>

Obituary by Virginia Trimble: <https://aas.org/obituaries/e-dorrit-hoffleit-1907-2007> or

<http://adsabs.harvard.edu/abs/2007BAAS...39.1067T>

July 2006 Interview with Pamela Gay (video):

<http://www.starstryder.com/2007/04/11/dorrit-hoffleit-1907-2007/> (a video tribute with interview is at: <https://www.youtube.com/watch?v=4uC2xiIXZ5A>)

Hogg, Helen Sawyer (1905-1993)

- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Hogg.
- Clement, Christine & Broughton, Peter “Helen Sawyer Hogg Obituary” in the *Journal of the Royal Astronomical Society of Canada*, vol. 87, No. 6, p. 351 (Dec. 1993):
<http://adsabs.harvard.edu/full/seri/JRASC/0087/0000351.000.html>
- Morrison, David & Fraknoi, Andrew "1983 ASP Award Winners: Klumpke Roberts Award to Helen Sawyer Hogg" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Nov/Dec. 1983, p. 185.
- Pipher, Judith “Helen Sawyer Hogg Obituary” in *Publications of the Astronomical Society*, vol. 105, p. 1369 (Dec. 1993): <http://adsabs.harvard.edu/full/seri/PASP/0105/0001369.000.html>
- Webb, M. *Helen Sawyer Hogg: A Lifetime of Stargazing*. 1991, Copp Clark Pitman (Toronto).
- Yost, E. *Women of Modern Science*. 1959, Greenwood Press. Pp. 31-47 are on Helen Hogg.

Web Sites:

Obituary from the Journal of the AAVSO:

<http://articles.adsabs.harvard.edu/full/1993JAVSO..22...83C/0000083.000.html>

Brief Biography at Science Women Site: <http://www.sdsc.edu/ScienceWomen/hogg.html>

From the Canadian Encyclopedia: <https://www.thecanadianencyclopedia.ca/en/article/helen-sawyer-hogg>

Her career highlights summary at U. of Toronto: <http://www.astro.utoronto.ca/about/history/helen-sawyer-hogg/>

Brief Biography at Canada Under the Stars: <http://astro-canada.ca/en/a2206.html>

DeBakesy, Dale “Before There Was Sagan: How Helen Sawyer Hogg Brought Astronomy to the People” at: <http://womenyoushouldknow.net/before-there-was-sagan-how-helen-sawyer-hogg-brought-astronomy-to-the-people/>

Transcript of an Interview with David DeVorkin at the Center for the History of Physics:

<https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4679> (there is also a separate interview with Owen Gingerich at: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/29928-1>)

Video of lecture about the life and work Helen Hogg by Christine Clement:

https://www.youtube.com/watch?v=aJkryE_p-DM

1981 Interview with Helen Hogg (sponsored by the RASC):

<https://www.youtube.com/watch?v=pH5FGnrsZsI&t=453s>

Huggins, Margaret (1848-1916)

- Becker, Barbara “Dispelling the Myth of the Able Assistant: Margaret and William Huggins at Work in the Tulse Hill Observatory” in Helena Pycior, et al. eds., *Creative Couples in the Sciences*. 1996, Rutgers University Press. (On the web at: <http://faculty.humanities.uci.edu/bjbecker/ExploringtheCosmos/week7b.html>; this is also part of a whole book on the Huggins’ at: <http://faculty.humanities.uci.edu/bjbecker/huggins/>)
- Becker, Barbara “Margaret Huggins and Tulse Hill Observatory” in *Astronomy & Geophysics*, Vol. 57, Issue 2, 1 Apr. 2016, p. 2.13. On-line at: <https://academic.oup.com/astrogeo/article/57/2/2.13/2468644>
- Belkora, Leila *Minding the Heavens: The Story of Our Discovery of the Milky Way*. 2003, IOP Publishing. Chapter 6 is about the Hugginses.
- Bruck, Mary Agnes *Mary Clerke & the Rise of Astrophysics*. 2002, Cambridge U. Press. See Chapter 5 and several other sections about Margaret Huggins’ work and relationship with Clerke.
- Bruck, M. T. “Companions in Astronomy: Margaret Huggins and Agnes Clerke” in *Irish Astronomical Journal*, Sep 1991, vol. 20(2), p. 70.

McKenna-Lawlor, Susan *Whatever Shines Should be Observed*. 2003, Springer. The story of five 19th century women who made contributions to astronomy and science, including Huggins.
Richardson, Robert "Lady Huggins" in *The Star Lovers*. 1967, Macmillan.

Web Site:

Joe Tenn's article on the Hugginses from the Griffith Observer: <http://www.phys-astro.sonoma.edu/BruceMedalists/Huggins/HugginsesDrapers.pdf>

Dale Debakcsi's 2018 article "The Secrets Stars Keep: Lady Margaret Huggins Pioneer of Spectral Photography" is at: <https://womenshouldknow.net/margaret-huggins-spectral-photography/>

Obituary in the Monthly Notices of the Royal Astronomical Society:

<http://articles.adsabs.harvard.edu/full/1916MNRAS..76R.278./0000278.000.html>

Obituary by Sarah Whiting in the Astrophysical Journal, 1915:

<http://adsabs.harvard.edu/abs/1915ApJ....42....1W>

Barbara Becker's 2015 public lecture on the history of 19th century spectroscopy has information on M. Huggins' role (about 50 min into the video): <https://www.youtube.com/watch?v=fzw-hRzCfAs>

Leavitt, Henrietta (1868-1921)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Leavitt.

Burleigh, Robert *Look Up!: Henrietta Leavitt, Pioneering Woman Astronomer*. 2013, Simon & Schuster. A book for children ages 4 – 8.

Byers, Nina & Williams, Gary, eds. *Out of the Shadows: Contributions of 20th Century Women to Physics*. 2006, Cambridge U. Press. Includes a chapter on Leavitt.

Crowe, Michael *Modern Theories of the Universe from Herschel to Hubble*. 1994, Dover. See especially Chapter 6.

Ferguson, Kitty *Measuring the Universe*. 1999, Walker. Chronicle of how distances were found in the universe, with good discussions of contributions by individual astronomers.

Johnson, George *Miss Leavitt's Stars: The Untold Story of the Woman Who Discovered How to Measure the Universe*. 2005, Atlas/Norton.

Jones, Bessie & Boyd, Lyle *The Harvard College Observatory (1839-1919)*. 1971, Harvard U. Press. See Chapters 10 and 11.

Mitchell, H. "Henrietta Leavitt and the Cepheid Variables" in *The Physics Teacher*, Mar. 1976, vol. 14, p. 162.

Moore, Patrick *Astronomers' Stars*. 1987, Norton. Chapter 10 concerns Leavitt's work on Cepheids.

Richardson, Robert "Henrietta Leavitt" in *The Star Lovers*. 1967, Macmillan.

Singh, Simon *Big Bang*. 2004, Harper. Chapter 3 has a nice section on her life and work.

Sobel, Dava *The Glass Universe*. 2016, Viking. Includes a considerable amount of material on Leavitt's life and work.

Web Sites:

Brief Biography at Woman Astronomer Site: <http://www.womanastronomer.com/hleavitt.htm>

Very brief biography at PBS Science Odyssey: <http://www.pbs.org/wgbh/aso/databank/entries/baleav.html>

Biography on the Famous Scientists Website: <https://www.famousscientists.org/henrietta-swan-leavitt/>

Haynes, Korey "Meet Henrietta Leavitt" post: <http://www.astronomy.com/news/2019/02/meet-henrietta-leavitt-the-woman-who-gave-us-a-universal-ruler>

Gunderson, Lauren: *Silent Sky* (a play about Leavitt): <https://sites.google.com/site/henriettasrhapsody/> and <http://silentskyplay.tumblr.com/> For more about the dramatist: <http://laurengunderson.com/>

Video of talk by George Johnson on his "Search for Miss Leavitt":

<http://perimeterinstitute.ca/videos/search-miss-leavitt>

Film (17-min) by Pangratios Panacosta on Leavitt: <https://www.youtube.com/watch?v=70cFwfNW7gQ>

Maury, Antonia (1866-1952)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Maury.

Hearnshaw, John *The Analysis of Starlight*. 1986, Cambridge U. Press. See Chapter 5.

Hoffleit, Dorrit "Antonia Maury" in *Sky & Telescope*, Mar. 1952, p. 106.

Jones, Bessie & Boyd, Lyle *The Harvard College Observatory (1839-1919)*. 1971, Harvard U. Press. See Chapter 5 and 11 on Maury's work with spectra.

Sobel, Dava *The Glass Universe*. 2016, Viking. Includes some material on Maury's life and work.

Web Sites:

Vassar Encyclopedia Entry: <http://vcencyclopedia.vassar.edu/alumni/antonia-maury.html>

Short biography on the Woman Astronomer site: <http://www.womanastronomer.com/amaury.htm>

Short biography at Project Continua: <http://www.projectcontinua.org/antonia-maury/>

Short biography at Time magazine site: <http://time.com/4262838/antonia-maury-astronomer/>

Mitchell, Maria (1818-1889)

Albers, Henry, ed. *Maria Mitchell: A Life in Journals and Letters*. 2001, College Avenue Press. Many excerpts from her writings, interspersed with biographical information.

Anderson, Dale *Maria Mitchell: Astronomer*. 2003, Chelsea House. For young adults.

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Mitchell.

Belserene, Emelia "Maria Mitchell: 19th Century Astronomer" in *Astronomy Quarterly*, vol. 5, no. 19, p. 133 (1986).

Berglund, Renee *Maria Mitchell and the Sexing of Science*. 2008, Beacon Press. Story of her life and of the importance of her work and fame for women's issues.

Booker, Margaret *Among the Stars: The Life of Maria Mitchell*. 2007, Mill Hill Press. A long biography for adult readers.

Camp, Carole *American Astronomers: Searchers and Wonderers*. 1996, Enslow. One chapter of this book for teen readers is devoted to Mitchell's life and work.

Gormley, Beatrice *Maria Mitchell: The Soul of an Astronomer*. 1995, Eerdmans Publishing. A book for youngsters.

Holmes, Richard "Maria Mitchell at 200: A Pioneering Astronomer who Fought for Women in Science" in *Nature*, 18 June 2018 (vol. **558**, pp. 370-371): <https://www.nature.com/articles/d41586-018-05458-6>

Kidwell, P. "Three Women of American Astronomy" in *American Scientist*, May/June 1990, p. 244.

Kohlstedt, S. "Maria Mitchell and the Advancement of Women in Science" in P. Abir-Am & Outram, D., eds. *Uneasy Careers and Intimate Lives: Women in Science 1789-1979*. 1987, Rutgers U. Press. Has chapter on Mitchell.

Matyas, C. "Maria Mitchell: First Woman Astronomer in America" in *Science Digest*, Aug. 1961, vol. 50, no. 8, p. 51.

McGraw, E. "When Girls Studied Planets and the Sky Had No Limits" (from Smithsonian): <https://www.smithsonianmag.com/science-nature/when-girls-studied-planets-and-the-skies-had-no-limits-180964127/>

McPherson, Stephanie *Rooftop Astronomer: A Story about Maria Mitchell*. 1990, CarolRhoda Books. For younger children.

Merriam, Eve, ed. *Growing Up Female in America: Ten Lives*. 1971, Doubleday. Has excerpts from Mitchell's diary in the section about her (pp. 75-92).

Morgan, Helen *Maria Mitchell: First Lady of American Astronomy*. 1977, Westminster. For children.

Opalko, J. "Maria Mitchell's Haunting Legacy" in *Sky & Telescope*, May 1992, p. 505.

Torjesen, Elizabeth *Comet Over Nantucket: Maria Mitchell and Her Island: The Story of America's First Woman Astronomer*, 1984, Friends United Press. Fictionalized biography.

Wright, Helen *Sweeper in the Sky: The Life of Maria Mitchell*. 1950, Macmillan. (Recently updated and reprinted by College Avenue Press. The original edition is on the web at: <http://digital.library.upenn.edu/women/wright/sweeper/sweeper.html>)

Web Sites:

Maria Mitchell for Students (at the Maria Mitchell Association website; use the menu at left to find all the pages): <https://www.mariamitchell.org/research-and-collections/maria-mitchell/for-students> (This is part of a rich website with information, images, archival material: <https://www.mariamitchell.org/>)

Brief Biography at Distinguished Women Web Site:
<http://www.distinguishedwomen.com/biographies/mitchell.html>

Brief biography at the Maria Mitchell House Preservation Web Site:
<http://www.nps.gov/history/nr/travel/pwwmh/ma74.htm>

Brief Biography at Unitarian/Universalist pages: <http://uudb.org/articles/mariamitchell.html>

Her Entry in the Vassar Encyclopedia: http://vcencyclopedia.vassar.edu/index.php/Maria_Mitchell

An 1881 Address by Mitchell about the Collegiate Education of Women:
[https://iif.harvard.edu/manifests/view/drs:2575143\\$1i](https://iif.harvard.edu/manifests/view/drs:2575143$1i)

Maria Mitchell: Life, Letters, and Journals (at Project Gutenberg): <http://www.gutenberg.org/ebooks/10202>

Short article at WGBH TV site: <http://news.wgbh.org/post/meet-americas-first-woman-astronomer-maria-mitchell>

Payne-Gaposchkin, Cecilia (1900-1979)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Payne-Gaposchkin.

Bartusiak, Marcia "The Stuff of the Stars" in *The Sciences*, Sep/Oct. 1993, p. 34. Excerpt on her work from Bartusiak's book, *Through a Universe Darkly* (1993, HarperCollins.)

Byers, Nina & Williams, Gary, eds. *Out of the Shadows: Contributions of 20th Century Women to Physics*. 2006, Cambridge U. Press. Includes chapter on Payne by Vera Rubin.

Camp, Carole *American Astronomers: Searchers and Wonderers*. 1996, Enslow. One chapter of this book for teen readers is devoted to her life and work.

Gingerich, Owen "The Most Brilliant Phd Thesis Ever Written in Astronomy" in Phillip, A. & Koopman, R., eds. *The Starry Universe: The Cecilia Payne-Gaposchkin Centenary*. 2001, L. Davis Press. Article is on the web at: <http://www.harvardsquarelibrary.org/biographies/cecilia-payne-gaposchkin-3/> OR http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?2001stun.conf....3G&

Greenstein, George "The Ladies of Observatory Hill" in *American Scholar*, Feb. 1993, p. 437. (Reprinted in his book *Portraits of Discovery*, 1998, John Wiley.)

Haramundanis, Katherine, ed. *Cecilia Payne Gaposchkin: An Autobiography and Notes*, 2nd ed. 1996, Cambridge U. Press.

Hearnshaw, John *The Analysis of Starlight*. 1986, Cambridge U. Press. See Chapter 2.

Hufbauer, Karl *Exploring the Sun*. 1991, Johns Hopkins. Chapter 3 discusses Payne's work, among others.

Kidwell, Peggy "Cecilia Payne-Gaposchkin: Astronomy in the Family" in P. Abir-Am & Outram, D., eds. *Uneasy Careers and Intimate Lives: Women in Science 1789-1979*. 1987, Rutgers U. Press.

Kidwell, Peggy "Three Women of American Astronomy" in *American Scientist*, May/June 1990, p. 244.

Smith, E. "Cecilia Payne-Gaposchkin" in *Physics Today*, June 1980, p. 64.

Sobel, Dava *The Glass Universe*. 2016, Viking. Includes material on Payne's early life and work.
Soter, Steven & Tyson, Neil, eds. *Cosmic Horizons*. 2001, New Press. See p. 75ff. (Profile excerpt at: <https://www.amnh.org/explore/resource-collections/cosmic-horizons/profile-cecilia-payne-and-the-composition-of-the-stars/>)
Wayman, Patrick "Cecilia Payne-Gaposchkin: Astronomer Extraordinaire" in *Astronomy & Geophysics*, 2002, Vol. 43, Issue 1, p. 1.27. On the web at: <https://academic.oup.com/astrogeo/article/43/1/1.27/203723>
Whitney, Charles "Cecilia Payne-Gaposchkin: An Astronomer's Astronomer" in *Sky & Telescope*, Mar. 1980, p. 212.

Web Sites:

Brief Obituary from the Quarterly Journal of the RAS by Owen Gingerich: <http://adsabs.harvard.edu/abs/1982QJRAS..23..450G>
Two excellent articles about her at the Harvard Square Library: <http://www.harvardsquarelibrary.org/biographies/cecilia-payne-gaposchkin-3/>
1968 Interview by Owen Gingerich at AIP: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4620>
Hoffleit, Dorrit "Reminiscences of Cecilia Payne-Gaposchkin": http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?2001stun.conf...87H&
Short biography at the American Assn of University Women Site: <https://www.aauw.org/2013/10/02/a-veritable-star/>
Richard Williams "Cecilia Payne and the Day the Universe Changed" on the American Institute of Physics website: <https://www.aps.org/publications/apsnews/201501/physicshistory.cfm>
Stuart Clark's article about her the day a company named a line of pants in her honor: <https://www.theguardian.com/science/across-the-universe/2013/aug/23/cecilia-payne-gaposchkin-pants>

Roberts, Dorothea Klumpke (1861-1942)

Aitken, Robert "Dorothea Klumpke Roberts" in *Publications of the Astronomical Society of the Pacific*, Dec. 1942, vol. 54, p. 217. On the web at: <http://adsabs.harvard.edu/full/1942PASP...54..217A>
Bracher, Katherine "Dorothea Klumpke Roberts: A Forgotten Astronomer" in *Mercury* (the magazine of the Astronomical Society of the Pacific), Sep/Oct. 1981, p. 139.
Reynolds, J. "Dorothea Klumpke Roberts" in *Monthly Notices of the Royal Astronomical Society*, vol. 104, no. 2, p. 92 (1944). (very brief)
Weitzenhoffer, Kenneth "The Triumph of Dorothea Klumpke" in *Sky & Telescope*, Aug. 1986, p. 109.

Web Sites:

Biographical article by Don Stone: <http://www.aanc-astronomy.org/articles/dorothea.html>
About her Pioneering Balloon Flights: <https://leonid.arc.nasa.gov/Klumpke.html> and <http://www.whiteoaks.com/jane/leonidklumpke/dorothea.txt>
Brief biography at Linda Hall Library: <https://www.lindahall.org/dorothea-klumpke-roberts/>

Roman, Nancy (1925 - 2018)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Roman.
Crowell, Ken *The Alchemy of the Heavens: Searching for Meaning in the Milky Way*. 1995, Doubleday. See Chapter 8.

Roman, Nancy "Following My Lucky Star" in *Science*, Vol. 354, Issue 6317, pp. 1346. (Part of their Working Life series.) On the web at: <http://science.sciencemag.org/content/354/6317/1346>

Silver, Lily "Dr. Nancy G. Roman, the Astronomer's Astronomer" in *Profiles in Success: 40 Lives of Achievement*. 1965, Fountainhead Publishers.

Yasuda, Anita *Astronomy: Cool Women in Space*. 2015, Nomad Press. She is featured in this book for kids ages 9-12.

Web Sites:

Autobiographical Article in *Astronomy Beat*: <https://www.astrosociety.org/37RYL62T/astrobeat/ab2016-143.pdf>

"Mother of the Hubble Space Telescope" – a 10-min 2008 Interview:
<https://www.youtube.com/watch?v=b2movHF4NzA>

Obituary in the *New York Times*, 2018: <https://www.nytimes.com/2018/12/30/obituaries/nancy-roman-dies-at-93.html>

Interview with David DeVorkin at the Center for the History of Physics from 1980:
<https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4846>

Searcy, Maureen "A Wider Scope" from the U. of Chicago: <https://mag.uchicago.edu/science-medicine/wider-scope>

Brief Interview at Women at NASA: <https://women.nasa.gov/nancy-grace-roman-2/>
5-minute video on her role in the history of the Hubble Space Telescope:

https://www.youtube.com/watch?v=8PwJJeiz_vI

Biographical article by Dale Debakcsy at *Women You Should Know*: <http://womenshouldknow.net/nancy-roman-hubble-space-telescope/>

Rubin, Vera (1928 - 2016)

Bartusiak, Marcia "The Woman Who Spins the Stars" in *Discover*, Oct. 1990, p. 88. See also Bartusiak's book, *Through a Universe Darkly*, 1993, HarperCollins, p. 202ff.

Boslaugh, John *Masters of Time: Cosmology at the End of Innocence*. 1992, Addison-Wesley. Chapter 2 features Rubin's life and work.

Camp, Carole *American Astronomers: Searchers and Wonderers*. 1996, Enslow. One chapter of this book for teen readers is devoted to Rubin's life and work.

Goldsmith, Donald *The Astronomers*. 1991, St. Martins. Chapter 2 profiles Vera Rubin.

Hunter, Deirdre "Vera Cooper Rubin (1928-2016)" in the *Publications of the Astronomical Society of the Pacific*, Apr. 2017, vol. 129, p. 201. On line at: <http://iopscience.iop.org/article/10.1088/1538-3873/aa5cc1/pdf>

Irion, Robert "Vera Rubin Profile: The Bright Face Behind the Dark Sides of Galaxies" in *Science*, vol. 295, no. 5557, p. 960 (Feb. 8, 2002).

Isbell, Douglas & Strom, Stephen "A Talk with Vera Rubin" in *Observatories of the Southwest*. 2009, U. of Arizona Press.

Lightman, Alan & Brawer, Roberta "Interview with Vera Rubin" in *Origins*. 1990, Harvard U. Press.

Overbye, Dennis *Lonely Hearts of the Cosmos*. 1992, HarperCollins. Chapter 17 focuses on her work.

Rubin, Vera "Women's Work: Women in Modern Astronomy" in *Science* 86, Jul/Aug. 1986, p. 58.

Rubin, Vera *Bright Galaxies, Dark Matters*. 1997, American Institute of Physics Press. A collection of her articles, including several personal reminiscences.

Rubin, Vera "An Interesting Voyage" (an autobiographical article from *Annual Reviews* 2011; 30-page PDF): <http://www.annualreviews.org/doi/pdf/10.1146/annurev-astro-081710-102545>

Rubin, Vera "Seeing Dark Matter in the Andromeda Galaxy" in *Physics Today*, Dec. 2006, vol. 59, no. 12, p. 8. More technical reminiscences, also at: <https://physicstoday.scitation.org/doi/10.1063/1.2435662>

Schomaker, William "Interview with Vera Rubin" (very brief) in *Astronomy*, June 2003, p. 18.

Scoles, S. "How Vera Rubin Discovered Dark Matter" in *Astronomy*, June 2016, p. 26.
Soter, Steven & Tyson, Neil, eds. *Cosmic Horizons*. 2001, New Press. See p. 94ff. On the web at:
<https://www.amnh.org/explore/resource-collections/cosmic-horizons/profile-vera-rubin-and-dark-matter/>
Stephens, Sally "Vera Rubin: An Unconventional Career" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Jan/Feb. 1992, p. 38. An interview.
Tucker, Wallace & Karen *The Dark Matter*. 1988, Morrow. See Chapter 6.
Yeager, A. "Vera Rubin's Universe" in *Sky & Telescope*, Aug. 2017, p. 36. On her life and work.
Obituary in the NY Times: <https://www.nytimes.com/2016/12/27/science/vera-rubin-astronomist-who-made-the-case-for-dark-matter-dies-at-88.html>

Web Sites:

Remembering Vera website at the Carnegie Institution: <https://dtm.carnegiescience.edu/remembering-vera>
Sandra Faber's Obituary Blog at *Scientific American*: <https://blogs.scientificamerican.com/guest-blog/vera-rubins-contributions-to-astronomy/>
Sarah Scoles' article on how she confirmed dark matter at *Astronomy* magazine site:
<http://www.astronomy.com/news/2016/10/vera-rubin>
Joe Tenn's Bruce Medalist Profile of her: <http://www.phys-astro.sonoma.edu/BruceMedalists/Rubin/index.html>
Lightman, Alan "Interview with Vera Rubin" 1989, for the Center for the History of Physics:
<https://www.aip.org/history-programs/niels-bohr-library/oral-histories/33963> plus a 1995 interview
by David DeVorkin: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/5920-1>
2002 Interview in *Discover* Magazine: <http://discovermagazine.com/2002/jun/breakdialogue>
She receives an honorary degree and addresses the graduates of American University in 2011:
<https://vimeo.com/23419815>

Sitterly, Charlotte Moore (1898-1990)

Garton, W. & Martin, W. "Obituary for C. M. Sitterly" in *Quarterly Journal of the Royal Astronomical Society*, vol. 32, pp. 209-10 (1991).
Martin, W. "Charlotte Sitterly" in *Physics Today*, vol. 44, p. 128 (Apr. 1991). On the web at:
<http://physicstoday.scitation.org/doi/10.1063/1.2810096> (click NEXT for the second page)
Morrison, Nancy & Fraknoi, Andrew "The Award of the 1990 Bruce Medal to Charlotte Moore Sitterly" in
Mercury (the magazine of the Astronomical Society of the Pacific), Nov/Dec. 1990, p. 179.
Rubin, Vera "Charlotte Moore Sitterly" in *Journal of Astronomical History and Heritage*, 2010, Vol. 13,
No. 2, p. 145 – 148. On the web at: <http://adsabs.harvard.edu/abs/2010JAHH...13..145R>
Sitterly, Charlotte Moore, "Collaboration with Henry Norris Russell over the Years," in Philip, A.G.
Davis & David H. DeVorkin, eds., *In Memory of Henry Norris Russell*. 1977, Dudley Observatory,
pp. 27-41.
Tousey, R. "The Solar Spectrum from Fraunhofer to Skylab: An Appreciation of the Contributions of
Charlotte Moore Sitterly" in *Journal of the Optical Society of America, Series B*, vol. 5, p. 2230 (Oct.
1988).

Web Sites:

Profile connected with the Bruce Medal:
<http://www.phys-astro.sonoma.edu/BruceMedalists/Sitterly/index.html>
Brief obituary in the NY Times: <http://www.nytimes.com/1990/03/08/obituaries/charlotte-sitterly-91-devoted-career-to-sunlight-studies.html>
DeVorkin, David "Interview with Charlotte Moore (Sitterly)" 1978, for the Center for the History of
Physics: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4784>

Roman, Nancy: Obituary from the *Bulletin of the American Astronomical Society*:
<https://aas.org/obituaries/charlotte-moore-sitterly-1898-1990>
Obituary by Vera Rubin in the *Journal of Astronomical History and Heritage*:
<http://adsabs.harvard.edu/full/2010JAHH...13..145R>
Brief obituary in the Standards Association Alumni Newsletter: <http://www.phys-astro.sonoma.edu/BruceMedalists/Sitterly/SitterlySAANews1990.pdf>

Somerville, Mary (1780-1872)

Alic, Margaret *Hypatia's Heritage: A History of Women in Science*. 1986, Beacon Press. Chapter 12 has a good section on her work.

Bruck, M. "Mary Somerville: Mathematician and Astronomer of Underused Talent" in *Journal of the British Astronomical Association*, Aug. 1996, vol. 106, p. 201. On line at:
<http://adsabs.harvard.edu/abs/1996JBAA..106..201B>

Chapman, Allan *The Victorian Amateur Astronomer*. 1998, Wiley/Praxis. See especially pp. 276ff.

Chapman, Allan *Mary Somerville and the World of Science*. 2004, Canopus Books.

Chapman, Allan "Mary Somerville: Astronomer and Mathematician" in *Astronomy Now*, 2005, Vol. 19, No. 3, p. 77 – 80.

Neeley, Kathryn *Mary Somerville: Science, Illumination, and the Female Mind*. 2001, Cambridge University Press.

Patterson, E. "Mary Somerville" in *British Journal for the History of Science*, vol. 4, p. 311 (1969). Long profile.

Secord, J. "Mary Somerville's Vision of Science" in *Physics Today*, Jan. 2018, p. 46. Detailed article on her life and work.

Strickland, Elisabetta *The Ascent of Mary Somerville in 19th Century Society*, 2016, Springer.

Strickland, Elisabetta "Mary Fairfax Somerville, Queen of Science" in *Notices of the American Mathematical Society*, Sep. 2017. On line at:
<http://www.ams.org/publications/journals/notices/201708/rmoti-p929.pdf>

Weitzenhoffer, Kenneth "The Education of Mary Somerville" in *Sky & Telescope*, Feb. 1987, p. 138.

Wills, Mathew "Mary Somerville, Queen of 19th Century Science" in *JSTOR Daily*:
<https://daily.jstor.org/mary-somerville-queen-of-19th-century-science/>

Web Sites:

Brief Biography at Thoughtco: <https://www.thoughtco.com/mary-somerville-biography-p2-3072237>

Biography at Mac Tutor: <http://www-history.mcs.st-andrews.ac.uk/Biographies/Somerville.html>

From Biographies of Women Mathematicians: <http://www.agnesscott.edu/lriddle/women/somer.htm>

Brief Biography at Burntisland Site: <http://www.burntisland.net/mabon.htm>

Biography on Women In European History site:
http://womenineuropeanhistory.org/index.php?title=Mary_Somerville

BBC Radio Program about her, with Allan Chapman (audio):
http://www.bbc.co.uk/radio4/science/thematerialworld_20040826.shtml

Interesting essay by Paula Gould from *Science*, wondering if her life story (and Caroline Herschel's) has been whitewashed by history: <http://www.sciencemag.org/cgi/content/full/sci;296/5574/1805>

Kelly, Erin: "Mary Somerville: The Woman for Whom the Word 'Scientist' Was Made": <http://all-that-is-interesting.com/mary-somerville>

Obituary in the London Times: <http://www-history.mcs.st-andrews.ac.uk/Obits/Somerville.html>

A book of recollections by her daughter, *Personal Recollections, from Early Life to Old Age, of Mary Somerville* is available on line from Project Gutenberg: <http://www.gutenberg.org/ebooks/27747>

An annotated version of her 1831 book *Mechanism of the Heavens* is on line at:
<http://www.malaspina.com/etext/heavens.htm>

Tinsley, Beatrice (1941-1981)

- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Tinsley.
- Eisberg, Joann "Making a Science of Observational Cosmology: The Cautious Optimism of Beatrice Tinsley" in *Journal for the History of Astronomy*, vol. 32, p. 264 (2001). On the web at: <http://articles.adsabs.harvard.edu/pdf/2001JHA.....32..263E>
- Faber, Sandra "Beatrice Tinsley" in *Physics Today*, vol. 34, p. 110 (Sept. 1981). On the web at: <http://physicstoday.scitation.org/doi/10.1063/1.2914734> (hit the next button to see the second page)
- Hill, Edward *My Daughter Beatrice*. 1986, American Physical Society.
- Larson, R. & Stryker, L. "Beatrice Hill Tinsley" in *Quarterly Journal of the Royal Astronomical Society*, vol. 23, p. 162 (1982).
- Overbye, Dennis *Lonely Hearts of the Cosmos*. 1992, HarperCollins. An introduction to modern cosmology; material on Tinsley is in Chapter 10.
- Overbye, Dennis "Overlooked No More: Beatrice Tinsley" in the *New York Times*, July 18, 2018: <https://www.nytimes.com/2018/07/18/obituaries/overlooked-beatrice-tinsley-astronomer.html>
- Trimble, Virginia "Beatrice Tinsley" in *Visit to a Small Universe*. 1992, American Institute of Physics Press.

Web Sites:

- Biography at New Zealand Edge page: <http://www.nzedge.com/legends/beatrice-tinsley/>
- Biography by Michele Nichols on Carleton College site: <https://web.archive.org/web/20120207203823/http://www.carleton.edu/departments/PHAS/astro/pages/michele/tinsley.html>
- Paper about her life and work by Margaret Turner: <http://freepages.misc.rootsweb.ancestry.com/~mturner/women/bmt.htm>
- Fu, Lara "This Astronomer Had to Make the Hardest Career Choice" at: <https://www.aauw.org/2014/07/16/beatrice-tinsley/>
- Biography by J. Renee Fernanders: <https://jvrf.wordpress.com/beatrice-tinsley-biography/>
- Brief video about Tinsley by U. of Nottingham astronomer Meghan Gray: http://www.deepskyvideos.com/videos/other/beatrice_tinsley.html
- American Institute of Physics oral interview by David DeVorkin: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/4914>
- Hoar, Stuart (a New Zealand playwright): *Bright Star* (a play about the work and life of Tinsley): <http://www.playmarket.org.nz/playwrights/stuart-hoar>

6. Material on A Few Specific Living Astronomers who are Women

Batalha, Natalie (1966 –

- Kaufman, Marc "The Very Influential Natalie Batalha": <http://www.manyworlds.space/index.php/2017/04/24/the-influential-natalie-batalha/>
- Interview with Susan Niebur on the *Women in Planetary Science* website: <https://womeninplanetaryscience.wordpress.com/2010/07/06/women-in-exoplanets-meet-natalie%20A0batalha/>
- 2013 Interview on the NPR show "On Being": transcript at: <https://onbeing.org/programs/natalie-batalha-exoplanets-and-love-science-that-connects-us-to-one-another/>
- 2017 News Release on Her Being Named one of the 100 Most Influential People in the World: <https://news.ucsc.edu/2017/06/batalha-natalie-time-100.html>

Interview on *Science Friday*, on NPR, May 2016 (13 min): <https://www.sciencefriday.com/segments/a-bounty-of-planets-in-a-tiny-patch-of-space/>

Her 2012 talk in the Silicon Valley Astronomy Lectures: https://www.youtube.com/watch?v=ZbijeR_AALo&t=8s

Her 2017 talk in the Silicon Valley Astronomy Lectures: <https://www.youtube.com/watch?v=e2Q1iBgEKbU&t=2575s>

Kwok, Roberta "The Stars Her Destination" (a short 2008 profile from the Berkeley Alumni Magazine): <http://alumni.berkeley.edu/news/california-magazine/november-december-2008-stars-berkeley/stars-her-destination>

Bell Burnell, Jocelyn (1943 -)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Bell Burnell.

Bell Burnell, Jocelyn "Little Green Men, White Dwarfs, or What?" in *Sky & Telescope*, Mar. 1978, p. 218.

Bell Brunell, Jocelyn "So Few Pulsars, So Few Females" in *Science*, 23 April 2004, vol. 304. no. 5670, p. 489. (On line at: <http://www.sciencemag.org/cgi/content/summary/304/5670/489>)

Byers, Nina & Williams, Gary, eds. *Out of the Shadows: Contributions of 20th Century Women to Physics*. 2006, Cambridge U. Press. Includes a chapter on Bell Burnell.

Greenstein, George "Neutron Stars and the Discovery of Pulsars" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Mar/Apr. 1985, p. 34 and May/June 1985, p. 66.

Levin, Janna *Black Hole Blues and Other Songs from Outer Space*. 2016, Knopf. Has a section of her work on pulsars.

Reed G. "The Discovery of Pulsars: Was Credit Given Where it was Due?" in *Astronomy*, Dec. 1983, p. 24.

Wade, N. "Discovery of Pulsars: A Graduate Student's Story" in *Science*, Aug. 1, 1975, p. 358. On line at: <https://science.sciencemag.org/content/189/4200/358.long> (but you will need privileges from your library to read the entire piece.)

Web Sites:

Interview on BBC with Jim Al-Khalili (30 min): <http://www.bbc.co.uk/programmes/b016812j>

Interview at the 2015 Edinburgh Science Festival by Andy Cohen: <https://www.youtube.com/watch?v=DCPereT6XxU>

Her TED talk, "Reflections on Women in Science": <https://www.youtube.com/watch?v=jp7amRdr30Y&t=33s>

Podcasts of three talks she gave at Oxford: <https://podcasts.ox.ac.uk/people/jocelyn-bell-burnell>

Irish Times article: "The Woman who Discovered the Lighthouses of the Universe": <https://www.irishtimes.com/news/science/irishwoman-who-discovered-the-lighthouses-of-the-universe-1.443538>

Transcript of an Interview on the BBC Program *Belief* (both about her religious view and her science): https://web.archive.org/web/20101109151056/http://www.bbc.co.uk/religion/programmes/belief/scripts/jocelyn_bell_burnell.html

DeVorkin, D. "Interview with Jocelyn Bell Burnell" (American Institute of Physics): <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/31792>

BBC collection of video clips featuring her: <https://www.bbc.co.uk/programmes/b00ry9jq/clips>

Royal Institution (Public) Discourse in 1997 ("Tick Tick Tick Pulsating Star") by Bell Burnell: <http://www.vega.org.uk/video/programme/69> (a video)

Interview in Discover Magazine, Nov. 2009 by Douglas Colligan: <http://discovermagazine.com/2009/nov/29-discover-interview-miles-wire-reams-paper-giant-discovery>

1977 After-dinner Speech about her Discovery of Pulsars (text): <http://www.bigear.org/vol1no1/burnell.htm>

Burbidge, Margaret (1919 -)

Arp, Halton & Fraknoi, Andrew "The Award of the 1982 Bruce Medal to Margaret Burbidge" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Sep/Oct. 1982, p. 154.

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Burbidge.

Bartusiak, Marcia "Margaret Burbidge" in *Smithsonian*, Nov. 2005, p. 34 (brief biography, on the web at: <http://www.marciabartusiak.com/uploads/8/5/8/9/8589314/burbidge.pdf>)

Burbidge, Margaret "Watcher of the Skies" (an autobiographical article from *Annual Reviews* 1994; 37-page PDF): <http://www.annualreviews.org/doi/pdf/10.1146/annurev.aa.32.090194.000245>

Byers, Nina & Williams, Gary, eds. *Out of the Shadows: Contributions of 20th Century Women to Physics*. 2006, Cambridge U. Press. Includes chapter on Burbidge.

Croswell, Ken *The Alchemy of the Heavens: Searching for Meaning in the Milky Way*. 1995, Doubleday. See Chapter 9.

Reed, J. "A Great Woman Astronomer Leaves England Again" in *Smithsonian*, Jan. 1974, p. 34.

Rubin, Vera "Margaret Burbidge: AAAS President-Elect" in *Science*, vol. 211, p. 915 (Feb. 27, 1981). On the web at: <http://science.sciencemag.org/content/211/4485/915> (but you will need privileges from your library to access the piece beyond page 1.)

"The Stargazer" in *Time* magazine, Mar. 20, 1972, p. 38.

Web Sites:

Bruce Medal Profile: <http://www.phys-astro.sonoma.edu/BruceMedalists/BurbidgeM/>

Interview with David DeVorkin at the Center for the History of Physics from 1978:

<https://www.aip.org/history-programs/niels-bohr-library/oral-histories/25487>

Biography at Encyclopedia.com: <http://www.encyclopedia.com/people/science-and-technology/astronomy-biographies/e-margaret-burbidge>

Her 2001 Hitchcock Lecture on "Modern Alchemy: Stars, Chemistry, and Cosmology":

<http://podcast.uctv.tv/vod/23342.mp4>

Danly, Laura (1958 -)

Interview for *Physics Today* (2015): <http://physicstoday.scitation.org/doi/10.1063/PT.5.9044/full/>

Videos at *Roadtrip Nation*: <http://roadtripnation.com/leader/laura-danly>

Q&A 2012 at the *L.A. Observed* site:

http://www.laobserved.com/archive/2012/04/qa_with_griffith_observat.php

Her public interest video on soil health: <http://www.merlofarminggroup.com/astronomer-dr-laura-danly-soil-health>

"To Fathom the Frontier": Post-eclipse talk (2017) from Jackson Hole: Video at:

<https://www.youtube.com/watch?v=kDh81Xt1c04>

Interview in the *Inspirational Women Talk to Teens* Series:

<https://www.youtube.com/watch?v=DZH9PQVIJso>

Faber, Sandra (1944 -)

Dressler, Alan *Voyage to the Great Attractor*. 1994, Knopf. Story of how we learned to explore the large-scale structure of the realm of the galaxies, focusing on the astronomers who call themselves the “Seven Samurai” (of which Faber is one).

Lemonick, Michael *The Light at the Edge of the Universe*. 1993, Villard/Random House. See especially Chapter 6.

Lightman, Alan & Brawer, Roberta "Interview with Sandra Faber" in *Origins*. 1990, Harvard U. Press.

Web Sites:

Her Web Page at Lick Observatory: <http://www.ucolick.org/~faber/>

Interview with Alan Lightman for the Center for the History of Physics 1988: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/33932>

Her page at the “Bruce Medalists” site: <http://www.phys-astro.sonoma.edu/BruceMedalists/Faber/index.html>

News Release on her Gruber Cosmology Prize: <https://aas.org/posts/news/2017/05/sandra-faber-receives-500000-gruber-cosmology-prize>

Her talk on “How Galaxies Were Cooked from the Primordial Soup” in the Silicon Valley Astronomy Lectures: <https://www.youtube.com/watch?v=wqNNCm7SNyw>

2009 Interview at Annual Reviews Audio (transcription): <http://www.annualreviews.org/userimages/ContentEditor/1299600853298/SandraFaberInterviewTranscript.pdf>

Interview with Melanie Fine at the Rocket Girls site: <http://rocketgirls.com/interview-with-astronomer-sandra-faber/>

Short video about her work on the Hubble: <https://www.youtube.com/watch?v=Goe8vRNxiIM>

Interview on the Planetary Radio podcast: <http://www.planetary.org/multimedia/planetary-radio/show/2017/0705-sandra-faber.html>

2016 Public Talk at the Space Telescope Science Institute: “Cosmic Knowledge and the Long-term Strategy of the Human Race”: <https://www.youtube.com/watch?v=4MBsBCHsQY>

Fischer, Debra (1953 -)

Naeye, Robert “Unlocking New Worlds” in *Astronomy*, Nov. 2002, p. 48. A profile and discussion of her work.

Web Sites:

Debra Fischer’s professional page at Yale: <http://exoplanets.astro.yale.edu/people/dfischer.php>

Profile at *ScienceLine* 2017: <http://scienceline.org/2017/01/breaking-limits-science-life/>

2010 Profile from *Radcliffe Magazine*: <https://www.radcliffe.harvard.edu/news/radcliffe-magazine/debra-fischers-quest-new-planets>

Interview at the Woman Astronomer site (2008): <http://www.womanastronomer.com/dfischer.htm>

Her page at the Planetary Society, with link to a radio interview: <http://www.planetary.org/connect/our-experts/profiles/debra-fischer.html>

2015 Interview with the Editor of *Astronomy Magazine*: <http://www.astronomy.com/magazine/superstars-of-astronomy-podcast/2015/04/debra-fischer-all-about-exoplanets>

2016 *Wired* magazine article about her work: <https://www.wired.com/2016/10/meet-next-generation-exoplanet-hunters/>

“Searching for Other Earths” 2013 public lecture at Yale: <https://www.youtube.com/watch?v=fomk3IakRQ0>

Freedman, Wendy (1957 -)

- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Freedman.
- Ferguson, Kitty *Measuring the Universe*. 1999, Walker. Chronicle of how distances were found in the universe, with good discussions of contributions by individual astronomers.
- Mozel, Philip “A Moment with Wendy Freedman” 2004, *Journal of the Royal Astronomical Society of Canada*, vol. 98, # 3, p. 135. On the web at:
<http://articles.adsabs.harvard.edu/full/2004JRASC..98..135M>
- Sokol, Joshua “A recharged debate over the speed of the expansion of the universe could lead to new physics” on *Science* magazine’s web pages (Mar. 2017):
<http://www.sciencemag.org/news/2017/03/recharged-debate-over-speed-expansion-universe-could-lead-new-physics>
- Stephens, Sally “Hubble Warrior” in *Astronomy*, March 2000, p. 52. Profile of her work trying to find the Hubble constant and other cosmological parameters.

Web Sites:

- Her faculty page at the U. of Chicago: <https://astro.uchicago.edu/people/wendy-l-freedman.php#research-person>
- 2014 News Release when she joined the U. of Chicago: <https://news.uchicago.edu/article/2014/08/07/wendy-freedman-world-leading-astronomer-joins-uchicago-faculty>
- TED Talks Page: https://www.ted.com/speakers/wendy_freedman
- Interview from April 2004, at the National Academy of Sciences (about her life and work):
<http://www.nasonline.org/news-and-multimedia/podcasts/interviews/wendy-l-freedman.html>
- Cosmologist Michael Turner interviews her for a TEDX Evening in 2016:
<https://www.youtube.com/watch?v=LHsL-M6Tz9g>
- 2011 Interview with Michael Shara at the American Museum of Natural History:
<https://www.youtube.com/watch?v=90IYIU1Stlo>
- Brief Profile for the 2009 Gruber Prize: <http://gruber.yale.edu/cosmology/2009/wendy-l-freedman>
- Her page and contributions at *Huffington Post*: <https://www.huffpost.com/author/wendy-l-freedman>

Geller, Margaret (1947 -)

- Ames, Joan. *Mastery: Interviews with 30 Remarkable People*. 1997, Rudra Press.
- Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Geller.
- Chaikin, Andrew “Surveyor of the Universe” in *Air & Space*, Aug/Sept. 1991; vol. 6, p. 84.
- Geller, Margaret. “The Big Picture” in *Natural History*, Feb. 2000, vol. 109, p. 74.
- Geller, Margaret “The Black Ribbon” (essay on science and society) in *Science*, 28 Aug 1998: Vol. 281, Issue 5381, pp. 1278-1279. On the web at:
<http://www.scienceonline.org/cgi/content/full/281/5381/1278>
- Goldsmith, Donald *The Astronomers*. 1991, St. Martin's Press. The chapter entitled "Mapping the Universe" profiles Geller's life and work.
- Greenstein, George *Portraits of Discovery*. 1998, John Wiley. Chapter 8 of this collection of biographical articles is about Margaret Geller and John Huchra.
- Lawler, Andrew “Margaret Geller: Battling Discrimination or Bureaucracy?” in *Science*, 12 November 1999; vol. 286, no. 5443, p. 1277. On the web at:
<http://www.sciencemag.org/careers/1999/11/margaret-geller-battling-discrimination-or-bureaucracy>
- Lemonick, Michael *The Light at the Edge of the Universe*. 1993, Villard/Random House. See especially Chapter 3.
- Lightman, Alan & Brawer, Roberta "Interview with Margaret Geller" in *Origins*. 1990, Harvard U. Press.
- Overbye, Dennis *Lonely Hearts of the Cosmos*. 1992, HarperCollins. See Chapter 19.

Taubes, Gary “Beyond the Soapsuds Universe” in *Discover*, Aug. 1997. On the web at:
<http://discovermagazine.com/1997/aug/beyondthesoapsud1197>
Wiley, John “Margaret Geller: Star Mapper” in *Astronomy*, Nov. 2000; vol. 28. p. 104.

Web Sites:

Her web page at Smithsonian: <http://cfa-www.harvard.edu/~mjg/>
Her MacArthur Foundation “Genius Award” Page: <https://www.macfound.org/fellows/394/>
Text of her 1995 Phi Beta Kappa Address at Harvard “Sense of Wonder”: <http://gos.sbc.edu/g/geller.html>
(Listed by NPR as one of the best commencement speeches ever:
<https://apps.npr.org/commencement/speech/margaret-j-geller-harvard-university-1995/>)
Her 2010 Chautauqua Lecture on astronomical photography “Click! The Universe”:
<https://www.youtube.com/watch?v=kTKGQzWa6yM>
2013 interview when she won the APS Lillienfeld Prize (6 min):
<http://www.youtube.com/watch?v=8c3IM8v68Hw>
Mapping the Universe audio at *Story Collider*: <https://www.storycollider.org/stories/2016/1/4/margaret-geller-mapping-the-universe>

Ghez, Andrea (1965 -)

Finkbeiner, Ann “Astronomy: Star Tracker” in *Nature*, vol. 495, pp. 296–298 (21 March 2013). On the web at: <https://www.nature.com/news/astronomy-star-tracker-1.12622>
Freedman, David “The Mysterious Middle of the Milky Way” in *Discover Magazine*, Nov. 1998.
Features her work.
Ghez, Andrea & Cohen, Judith *You Can Be a Woman Astronomer*. 2006, Cascade Press. A picture book for children from grades 3 - 5, includes a discussion of her own beginnings.
Sokol, Joshua “The Black Hole Hunter Peering into the Heart of Our Galaxy” (2017, *Atlantic Magazine*). On the web at: <https://www.theatlantic.com/science/archive/2017/07/andrea-ghez-black-hole-hunter/535296/>
Yasuda, Anita *Astronomy: Cool Women in Space*. 2015, Nomad Press. She is featured in this book for kids ages 9-12.

Web Sites:

Her web page at UCLA: <http://www.astro.ucla.edu/~ghez/>
“The Monster Black Hole at the Center of the Milky Way,” her 2017 talk in the Silicon Valley Astronomy Lectures: <https://www.youtube.com/watch?v=dvIigzE-aX4&t=359s>
2017 UCLA Student Video where she is asked 37 questions in 6 minutes:
<https://www.youtube.com/watch?v=o-Tnc3CUsEM>
Her 2009 Lecture at TED: <https://www.youtube.com/watch?v=c8re1U9rCo4> OR
http://www.ted.com/talks/andrea_ghez_the_hunt_for_a_supermassive_black_hole.html
Sky & Telescope website pieces about her work: <http://www.skyandtelescope.com/astronomy-news/star-zips-around-black-hole/> AND <http://www.skyandtelescope.com/astronomy-news/milky-ways-central-monster-measured/>
“Andrea Ghez: Puzzle Solver” at *StarDate*’s black hole encyclopedia (interview):
<http://blackholes.stardate.org/research/ghez-interview.php.html>
Brief story about her on “My Hero” web page:
http://www.myhero.com/myhero/hero.asp?hero=A_M_Ghez_06
Her MacArthur Foundation “Genius Prize” page: <https://www.macfound.org/fellows/798/>
Interview with her for the PBS TV Show NOVA in 2006:
<http://www.pbs.org/wgbh/nova/blackhole/explorer.html>

Hammel, Heidi (1960 -)

Bortz, Fred: *Beyond Jupiter: The Story of Planetary Astronomer Heidi Hammel* (2005, Franklin Watts/Scholastic & Joseph Henry Press). A colorful profile of Hammel as a person and scientist, written for teenagers (but enjoyable reading for everyone.)

Flanagan, R. "Observer of the Gas Giants" in *Astronomy*, July 1997, p. 50.

Web Site:

Brief 2010 interview on the *Women in Planetary Science* site:

<https://womeninplanetaryscience.wordpress.com/2010/09/30/heidi-hammel-ask-for-help-when-you-need-it/>

2008 interview in *The New York Times*: <http://www.nytimes.com/2008/09/02/science/02conv.html>

Her Planetary Society page with posts and radio show appearance: <http://www.planetary.org/about/board-of-directors/heidi-hammel.html>

Her answers to frequently asked questions at the site for the kids' book about her:

<http://www.fredbortz.com/HammelBio/AstroFAQ.htm>

2016 podcast with the editor of *Astronomy* magazine: <http://www.astronomy.com/magazine/superstars-of-astronomy-podcast/2016/04/heidi-hammel>

An hour interview of Minnesota Public Radio about the successor telescope to the Hubble and her work:

<http://minnesota.publicradio.org/display/web/2008/03/05/midmorning2/>

Some brief reminiscences by her brother: http://everything2.com/index.pl?node_id=1373765

Interview in Newsweek, Nov. 26, 2007: <http://www.newsweek.com/id/70975>

2016 Profile at AAAS website: <https://www.aaas.org/blog/member-spotlight/astronomer-pushes-science-forward-planetary-exploration>

Her page at the James Webb Space Telescope website: <https://jwst.nasa.gov/meet-hammel.html>

Luu, Jane (1963 -)

Bartusiak, Marcia "The Remarkable Odyssey of Jane Luu" in *Astronomy*, Feb. 1996, p. 46.

Davies, John *Beyond Pluto: Exploring the Outer Limits of the Solar System*. Chapter 4 features Luu's life and work.

Flamsteed, Sam "'Where Comets Come from - Hubble Space Telescope Provides Evidence for Kuiper Belt" in *Discover*, Nov. 1995. On-line:

<http://discovermagazine.com/1995/nov/wherecometscomef583> (Includes some about her life and early work.)

Web Site:

Interview from 2003 (with a lot of biographical information) at Imagiverse Site:

http://www.imagiverse.org/interviews/janeluu/jane_luu_21_03_03.htm

Brief autobiography at the Shaw Prize site:

<http://shawprize.org/en/shaw.php?tmp=3&twoid=92&threeid=208&fourid=348&fiveid=170>

Career profile at the *Science* magazine site: <http://www.sciencemag.org/careers/2012/10/no-starry-eyed-astronomer>

Transcript of her Kavli Prize talk: http://www.kavliprize.org/sites/default/files/Jane_Luu_manuscript.pdf

Brief 2012 video of her and David Jewitt's Shaw Prize lecture:

<https://www.youtube.com/watch?v=ypKWDKWRzyY>

2012 Talk to the Rosalind Franklin Society on the Kuiper Belt (with some personal memories):

<https://www.youtube.com/watch?v=I5pnR002y6k>

Max, Claire (1946 -)

Her page at the University of California Observatories: <http://www.ucolick.org/~max/>

Article on her receiving the 2004 E.O. Lawrence Award: http://currents.ucsc.edu/04-05/09-27/max_award.asp

3-minute video with Freeman Dyson describing her role in the rise of adaptive optics:

<https://www.youtube.com/watch?v=4ntfOaqKHFU>

Finkbeiner, Ann “Astronomy: Laser Focus” in *Nature*, 21 Jan 2015. (Claire Max has transformed the capabilities of telescopes.) On the web at: <https://www.nature.com/news/astronomy-laser-focus-1.16741>

2015 News Release on being appointed Director of the U. of California Observatories:

<https://news.ucsc.edu/2015/08/ucsc-director.html>

A Basic Tutorial on Adaptive Optics (2012): https://www.youtube.com/watch?v=4VWFcy6_Ij8

Max, Claire: “A Sharper Image” talk in the Silicon Valley Astronomy Lectures:

<https://www.youtube.com/watch?v=stAGLke6XDU&t=84s>

Porco, Carolyn (1953 -)

Dowrett, A. “Science and Spirituality: An Interview with Carolyn Porco” in *The Humanist*, Jan/Feb. 2008.

Overbye, Dennis “An Odyssey from the Bronx to Saturn’s Rings” (a Sep. 21, 2009 *New York Times* profile): <http://www.nytimes.com/2009/09/22/science/space/22prof.html>

Porco, Carolyn “Cassini at Saturn” in *Scientific American*, Oct. 2017. On the web at:

<https://www.scientificamerican.com/article/cassini-at-saturn-a-retrospective/>

Porco, Carolyn “A Week in the Life of CP” in *The Wall Street Journal*, Feb. 10, 2016. On the web at:

<http://carolynporco.com/in-the-news/popular-writings/week-in-the-life-of-carolyn-porco-wsj.html>

Web Sites:

Her biography at her own website: <http://carolynporco.com/about/biography/>

Her biography on the Edge website: http://www.edge.org/3rd_culture/bios/porco.html

1999 Profile in the *New York Times*: <http://www.nytimes.com/library/national/science/081799sci-nasa-cassini-2.html>

2005 Profile by Bjorn Carey: <http://www.cnn.com/2005/TECH/space/02/15/saturn.astronomer/index.html>

Her talk on Cassini at the Silicon Valley Astronomy Lectures (2015):

<https://www.youtube.com/watch?v=Vx135n8VFXy>

Her entry at the Encyclopedia of World Biography:

<https://www.notablebiographies.com/newsmakers2/2005-La-Pr/Porco-Carolyn.html>

Her talk to Pop!Tech in 2005 (podcast): <http://itc.conversationsnetwork.org/shows/detail767.html#>

Her talk to the TED Conference (Mar. 2007):

http://www.ted.com/index.php/talks/carolyn_porco_flies_us_to_saturn.html

2014 Appearance on StarTalk with Neil Tyson: <https://www.startalkradio.net/show/madame-saturn-a-conversation-with-carolyn-porco-part-1/>

2017 Article about Her and Space Images at Time.com: <http://time.com/4894102/voyager-anniversary-photos/>

Sargent, Anneila (1942 -)

Gallagher, Paul “Anneila Sargent: The Woman from Fife who Advises the White House” in *The Independent*, Apr. 13, 2013: <http://www.independent.co.uk/news/people/profiles/anneila-sargent-the-woman-from-fife-who-advises-the-white-house-8572137.html>

Goldsmith, Donald *The Astronomers*. 1991, St. Martin’s Press. See Chapter 12 of this book, which focuses on the work of a few astronomers at the frontiers of science.

Sommerville, Iain “From Burtisland to the Outer Limits: The Journey of Anneila Cassells [Sargent]” (mostly about her early life): <http://www.burtisland.net/sargent.htm>

Web sites:

Her page at Caltech: http://www.astro.caltech.edu/people/faculty/Anneila_Sargent.html

Her 2015 talk in Edinburgh on “Make it Happen: Women into Science” (with a bit about her own career): <https://www.youtube.com/watch?v=TnA-L1FVYz8>

2017 Profile in the *Courier* (a UK Newspaper):

<https://www.thecourier.co.uk/fp/news/local/fife/176569/fife-born-professor-anneila-sargent-superstar-american-astronomy/>

Seager, Sara (1971 -)

Jones, Chris “The Woman Who Might Find Us Another Earth” in *New York Times Magazine*, Dec. 7, 2016. On the web at: <https://www.nytimes.com/2016/12/07/magazine/the-world-sees-me-as-the-one-who-will-find-another-earth.html>

Powell, Corey “Sara Seager’s Tenacious Drive to Discover Another Earth” in *Smithsonian*, May 2014. On the web at: <https://www.smithsonianmag.com/science-nature/driven-make-most-her-time-planet-mit-astronomer-has-set-audacious-goal-180951174/>

Seager, Sara “So Many Exoplanets, So Few Women Astronomers” (an article in the Huffington Post Jan. 2013 about the hardship that constant travel imposes on women scientists with small children): http://www.huffingtonpost.com/sara-seager/women-in-science_b_2471980.html

Seager, Sara *Is There Life Out There: The Search for Habitable Exoplanets* (her 48-page, 2009, self-published popular-level intro, as a free PDF): <https://www.saraseager.com/wp-content/uploads/2016/08/book-is-there-life-out-there.pdf>

Web Sites:

Her website: <https://www.saraseager.com/>

Short Profile at AAAS website: <http://membercentral.aaas.org/blogs/member-spotlight/sara-seagers-search-earth-planets>

Brief 2017 Interview on *Women in Astronomy* site:

<http://womeninastronomy.blogspot.com/2017/01/meet-your-cswa-sara-seager.html>

2017 Talk at Google “Mapping Nearby Stars for Habitable Exoplanets”:

<https://www.youtube.com/watch?v=jyfCukKVjC0>

Her page at the MacArthur Foundation: <https://www.macfound.org/fellows/903/>

Interview at Space.com 2013 on the Drake Equation: <https://www.space.com/22648-drake-equation-alien-life-seager.html?cid=51463011558824>

Interview at the *Physics Today* site Feb. 2019:

<https://physicstoday.scitation.org/doi/10.1063/PT.6.4.20190227a/full/>

2015 TED Talk on the Search for Life on Other Earths:

<https://www.youtube.com/watch?v=qAYqK9lAxic>

2013 TED Talk on the Search for Real Alien Life: <https://www.youtube.com/watch?v=NnM4SaGc8R0>

2015 Interview at MIT’s Infinite History Project (with reminiscences about her own life):

<https://www.youtube.com/watch?v=3O9nvqn1iLs>

2016 Nature Video “Back to the Thesis” (asks her to review what events led to her thesis):

<https://www.youtube.com/watch?v=fk9VdAXeZiY>

10 Tips for Undergraduate Women Science Students (from Astronomer Sara Seager):

<http://www.usnews.com/education/blogs/professors-guide/2010/08/11/10-tips-for-women-students-in-science-fields>

Shoemaker, Carolyn (1929 -)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Shoemaker.

Levy, David "Star Trails: Carolyn Shoemaker" in *Sky & Telescope*, June 1991, p. 658.

Levy, David *Shoemaker by Levy: The Man who Made an Impact*. 2000, Princeton U. Press. Biography of Eugene Shoemaker, but with much information about Carolyn's work.

Preston, Richard *First Light*. 1987, Atlantic Monthly Press. Section 2 is a profile of the Shoemakers.

Reeves, R. "Interview with Gene and Carolyn Shoemaker: Meteor Crater to Palomar" in *Astronomy*, June 1993, p. 13.

Shoemaker, Carolyn “Ups and Downs in Planetary Astronomy” in *Annual Reviews of Earth and Planetary Science*, vol. 27, p. 1 (1999). Reminiscences about her career.

Web Sites:

Biography at USGS Page: <https://astrogeology.usgs.gov/people/carolyn-shoemaker>

1994 Article from *New Scientist*, with history and reactions to the discover of Comet Shoemaker-Levy 9:

http://www.bibliotecapleyades.net/esp_shoemaker_a.htm

Brief Biography at the Harcourt School Site:

http://www.harcourtschool.com/activity/biographies_science/shoemaker/

Her 1998 Essay from *Science Magazine* on Space Exploration (with some thoughts about her own life and work): <http://www.sciencemag.org/cgi/content/full/282/5394/1637>

2-min video with advice for young women going into astronomy:

<https://www.youtube.com/watch?v=AADENDV2Z8>

Page about here and her story about her husband at Story Corps: <https://storycorps.org/stories/carolyn-shoemaker-and-phred-salazar-160708/>

Stofan, Ellen (1961 -)

Stofan, E. “Venus: The Way We Might Have Been” in Stern, S.A., ed. *Our Worlds: The Magnetism and Thrill of Planetary Exploration*. 1999, Cambridge U. Press; pp. 31-45. Combines a discussion of the exploration of Venus with autobiographical information on her development as a scientist.

Web Sites:

Her page when she was Chief Scientist at NASA: https://www.nasa.gov/offices/ocs/stofan_bio.html

Jan. 2017 *Christian Science Monitor* story about her resignation as Chief Scientist:

<https://www.csmonitor.com/Science/Spacebound/2017/0104/Why-is-chief-NASA-scientist-Ellen-Stofan-stepping-down> (Also a story in *Wired*: <https://www.wired.com/2017/01/dont-turn-earth-venus-warns-nasa-ex-chief-scientist-ellen-stofan/>)

Apr. 2017 story about her at *Motherboard*: https://motherboard.vice.com/en_us/article/538xwa/ellen-stofan-former-nasa-chief-scientist

Her 2013 Interview at *SpaceNews*: <http://spacenews.com/37599profile-ellen-stofan-nasa-chief-scientist/>

Her talk on Mars Exploration at the Royal Institution: <https://www.youtube.com/watch?v=20ufMGhA2e0>

Announcement of her becoming Director of the Air and Space Museum, 2018:
<https://www.space.com/40257-ellen-stofan-national-air-space-museum.html>
“Lecture on Exploring Titan by Boat” (at the Denver Museum of Natural History 2012, 1 hr, 18 min):
<http://vimeo.com/44046816>
JPL Podcast with Slides on YouTube (about lakes on Titan):
<http://www.youtube.com/watch?v=0PP5hSbwHXQ> (Transcript at:
<http://www.nasa.gov/multimedia/podcasting/jpl-cassini-20070103.html>)
News announcement being named NASA Chief Scientist, July 2013:
<http://www.nasa.gov/press/2013/july/nasa-welcomes-new-chief-scientist/#.UfbSwo3CZ8E>
Video where she explains a proposed mission to study the lakes of Titan; a bit technical (2011, 9 min):
<http://www.youtube.com/watch?v=xkYIdhvdYWU>

Tarter, Jill (1944 -)

Armstrong, Mabel *Women Astronomers: Reaching for the Stars*. 2008, Stone Pine Press. This book for teens has a chapter on Tarter.
Drake, Frank & Sobel, Dava *Is Anyone Out There?* 1992, Delacorte/Bantam. Page 152 ff. Has a number of discussions of Tarter’s life and work, especially in Chapters 7 & 10.
Ferron, Karri “Brief Interview with Jill Tarter” in *Astronomy*, Dec. 2009, p. 10.
Hayes, Jacqui “Silent Witness (profile of Jill Tarter)” in *Cosmos* magazine, Apr. 2010. On web at:
<https://web.archive.org/web/20100801135435/http://www.cosmosmagazine.com/features/print/3593/silent-witness>
Jackson, Ellen *Looking for Life in the Universe: The Search for Extraterrestrial Intelligence*. 2005, Houghton Mifflin. A profile of Tarter and her work for young people in grades 4-8.
Lubick, N. “An Ear to the Stars” in *Scientific American*, Nov. 2002, p. 42. A brief profile of Tarter and her SETI work.
Scoles, Sarah *Making Contact: Jill Tarter and the Search for Extraterrestrial Intelligence*. 2017, Pegasus. A popular-level book with the story of her life and work.
Swift, David “Interview with Jill Tarter” in *SETI Pioneers*. 1990, U. of Arizona Press.

Web Sites:

Brief 2004 Profile on CNN Site: <http://www.cnn.com/2004/WORLD/americas/04/15/tarter/index.html>
2017 Interview on the KQED *Forum* program about her work:
<https://ww2.kqed.org/forum/2017/07/18/pioneering-astronomer-jill-tarter-on-making-contact-with-alien-life/>
“Will the 21st Century be the Time we Discover Life Beyond Earth?” Her 2017 talk in the Silicon Valley Astronomy Lectures: <https://www.youtube.com/watch?v=wYcM0BOYHyw>
Interview at the U. of Washington in 2015 (37 min): <https://www.washington.edu/alumni/at-length-with-jill-cornell-tarter/>
Her TED Prize lecture (2009): <https://www.youtube.com/watch?v=EszGlvRdgTE>
Nov. 2007 Interview for the KQED TV show *Quest*:
<https://www.youtube.com/watch?v=QwEm3WHvNHI>
The Search for Cosmic Company (her 2011 TEDX Talk at USC):
<https://www.youtube.com/watch?v=6DmpJoEmyZs>
2012 Talk on “The World We Dream”: <https://www.youtube.com/watch?v=4EABW8WVTV0>
2012 Interview at *Space.com*: <https://www.space.com/15803-jill-tarter-seti-search-retirement-qanda.html>
2017 Interview on NPR’s *Science Friday*: <https://www.sciencefriday.com/segments/still-searching-for-a-sign-of-life/>

Trimble, Virginia (1943 -)

- Feder, Toni “Q&A: Virginia Trimble on Fifty Plus Years in Astronomy” for *Physics Today*, 2018: <https://physicstoday.scitation.org/action/showDoPubSecure?doi=10.1063/PT.6.4.20180313a&format=full>
- Scoles, Sara “The Woman Who Knows Everything about the Universe” in *Wired* magazine, 2018: <https://www.wired.com/story/the-woman-who-knows-everything-about-the-universe/>
- Trimble, Virginia *Visit to a Small Universe*. 1992, American Institute of Physics Press. A collection of her articles, including several that bear on her own life and work.
- Trimble, V. “Affirmative Action and Women in Science” in *The Scientist*, Sep. 1996: <https://www.the-scientist.com/?articles.view/articleNo/18033/title/Affirmative-Action-And-Women-In-Science--Post-Hoc--Ergo-Propter-Hoc-/>
- Trimble, V. “Anybody But Hubble” (After-dinner talk on who discovered the expansion of the universe): <https://arxiv.org/ftp/arxiv/papers/1307/1307.2289.pdf>

Web Sites:

- Her page at U. of California, Irvine: https://www.faculty.uci.edu/profile.cfm?faculty_id=3060
- Interview on the “Science and Society” podcast: <http://www.scienceandsociety.net/audio/trimble.mp3>
- Transcript of a brief interview about telescopes (with a bit about her life) on ABC: <http://www.abc.net.au/rn/scienceshow/stories/2000/148938.htm>
- Her “Top 10” lists for the astronomy of the past and future: <http://www.aps.org/publications/apsnews/200010/astronomy.cfm>
- Honors from the AAS and the IAU: <https://aas.org/posts/news/2018/02/virginia-trimble-honored-aas-and-iau>

Wolff, Sidney (1941 -)

- Waldrop, Mitchell “New Director Named for Kitt Peak” in *Science*, vol. 224, p. 265 (Apr. 20, 1984).
- Wolff, Sidney “A Search for Aperture: A Selective History of Telescopes” in *Mercury* (the magazine of the Astronomical Society of the Pacific), Sep/Oct. 1985, p. 139.
- Wolff, Sidney *The Boundless Universe: Astronomy in the New Age of Discovery*. 2016, Rio Nuevo. An illustrated, popular-level introduction to observatories, telescopes, and their discoveries.
- Wolff, Sidney, et al. *Astronomy*. 2016, OpenStax. A free open-source introductory astronomy textbook on which she is one of the three lead authors. <http://openstax.org/details/astronomy>

Web Sites:

- Wolff, Sidney “Cautions for Astronomy’s Golden Age” (partly autobiographical reflections, 1987): <http://www.the-scientist.com/?articles.view/articleNo/9063/title/Cautions-for-Astronomy-s-Golden-Age/>
- Announcement of her AAS Education Prize: <http://www.noao.edu/outreach/press/pr06/pr0605.html>
- Her speech for the 100th anniversary of the American Astronomical Society (pdf file): <https://aas.org/archives/BAAS/v32n2/wolff.pdf>
- Oral History Interview at the American Institute of Physics: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/23363-1>
- Announcement of a vista point at the Cerro Tololo Interamerican Observatory being named for her: <https://www.noao.edu/news/2010/pr1001.php>
- Her 2013 talk at York High School, where she was once a student: <https://www.youtube.com/watch?v=QftuoG4x4qY>

7. Sampling of Articles/Books/Webpages about Other Individual Women Astronomers

A special issue of the on-line magazine *Sky's Up* in Jan. 2018 was devoted to women in astronomy:
<https://view.joomag.com/skys-up-january-february-2018/0999470001513909897>

Bagenal, Fran: Interview at NASA Science: <https://solarsystem.nasa.gov/people/1480/fran-bagenal/>

Bagenal, Fran: Women in Planetary Science (interview):

<https://womeninplanetaryscience.wordpress.com/2010/07/16/women-in-planetary-science-meet-fran-bagenal/>

Baliunas, Sallie: *see* Flamsteed, Sam "Star Spots: The Work of Sallie Baliunas" in *Discover*, Dec. 1991, p. 29.

Boesgaard, Ann "One Woman's Journey" in *Mercury (the magazine of the Astronomical Society of the Pacific)*, Jan/Feb. 1992, p. 19.

Dupree, Andrea: Brief Interview in *Astronomy*, Sep. 2009, p. 10.

Conklin, Nan Dieter: *Two Paths to Heaven's Gate*. 2006, NRAO Archives, 520 Edgemont Rd.,

Charlottesville, VA 22903. A memoir by a pioneering radio astronomer. See also:

DeVorkin, David "Interview with Nan Dieter-Conklin" 1977, for the Center for the History of Physics:

<http://www.aip.org/history/ohilist/4573.html>

Cordova, France: My Hero Project: (includes biographical information and interview):

http://www.myhero.com/go/hero.asp?hero=dr_france_cordova

Donahue, Megan "Clusters of Galaxies and the Fate of the Universe (or How to be a Cosmologist without Really Trying" in Stern, S. Alan, ed. *Our Universe: The Thrill of Extragalactic Exploration as Told by Leading Experts*. 2001, Cambridge U. Press; pp. 107-126. Combines a discussion of her work and her development as a scientist.

Holbrook, Jarita: Sasso, Anne "Jarita Holbrook, Guiding Star" at the *Science* magazine website:

<https://www.sciencemag.org/careers/2007/06/jarita-holbrook-guiding-star>

Hu, Esther "Looking Back in Time: Searching for the Most Distant Galaxies" in Stern, S. Alan, ed. *Our Universe: The Thrill of Extragalactic Exploration as Told by Leading Experts*. 2001, Cambridge U. Press; pp. 23-36. Combines a discussion of her work and her development as a scientist.

Kaspi, Victoria: Short profile and interview in the McGill Reporter, 2001:

<http://www.mcgill.ca/reporter/33/09/additions/kaspi/>

Kaspi, Victoria: Article in the Canadian Encyclopedia:

<https://www.thecanadianencyclopedia.ca/en/article/victoria-kaspi>

Kinney, Anne: *see* Schomaker, W. "NASA's Visionary" in *Astronomy*, Jan. 2005, p. 48. Interview and profile.

Lopes, Rosaly (a brief biography and interview in *Volcano World*):

<http://volcanoworld.wordpress.com/2011/12/19/rosaly-lobes/>

Lopes, Rosaly: discusses her work on "Through the Eyes of Scientists" (3 min, 2011):

<http://www.youtube.com/watch?v=ntCPur1SQ4Y>

Ma, Chung-Pei: talk on her work on monster black holes in the Silicon Valley Astronomy Lectures:

<https://www.youtube.com/watch?v=LN9oYjNKBm8&t=2s>

Ma, Chung-Pei: an *Introductions Necessary*:

<https://introductionsnecessary.com/2016/08/24/chung-pei-ma/>

Mainzer, Amy: her work with PBS to get young girls into science:

<https://www.fastcompany.com/3056446/how-pbs-and-nasas-amy-mainzer-are-getting-more-girls-into-science>

Mayall, Margaret: Gingerich, Owen: Transcript of a 1986 Interview for the Center for the History of Physics:

<https://www.aip.org/history-programs/niels-bohr-library/oral-histories/28323-1>

McFadden, Lucy: My Hero Project (short discussion of her work and how she got into astronomy): http://www.myhero.com/go/hero.asp?hero=Lucy_Mcfadden_06

Meadows, Victoria: Wolchover, Natalie “Victoria Meadows’ Earthly Vision for Alien Life” in Quanta Magazine: <https://www.quantamagazine.org/victoria-meadows-earthly-visions-of-alien-life-20180605/>

Meadows, Victoria: receives the Drake Award from the SETI Institute: <https://www.geekwire.com/2018/seti-institutes-drake-award-goes-univ-washington-astrobiologist-victoria-meadows/>

Meech, Karen: TED Talk on Oumuamua: https://www.ted.com/talks/karen_j_meech_the_story_of_oumuamua_the_first_visitor_from_another_star_system

O’Halloran, Rose: Web article by Richard Taibi: <http://www.usskyhistory.blogspot.com> (scroll down to the July 18, 2012 entry in this blog; O’Halloran was an astronomer and educator in San Francisco in the late 19th and early 20th century and the first woman board member of the Astronomical Society of the Pacific).

Payne-Scott, Ruby: Goss, Miller *Making Waves: The Story of Ruby Payne-Scott: Australian Pioneer Radio Astronomer*. 2013, Springer.

Richards, Mercedes: Eshleman, Adams “Mercedes Richards: Stellar Detective” (Penn State University news story 2009): <http://news.psu.edu/story/141653/2009/08/05/research/stellar-detective-profile-professor-mercedes-richards>

Speck, Angela: “You Can’t Take the Sky Away from Me” (profile article): <https://unearthedmag.wordpress.com/2017/05/01/you-cant-take-the-sky-away-from-me-mu-astronomy-professor-angela-speck-says/>

Urry, Meg: Essay at CNN site on her career and how bias holds women back: <https://www.cnn.com/2012/10/01/opinion/urry-women-science/index.html>

Weaver, Kimberly: Alumni Spotlight: https://web.archive.org/web/20070430214148/http://alumni.wvu.edu/spotlight/view/kim_weaver/



Debra Fisher



Jocelyn Bell Burnell



Jane Luu



Jill Tarter