

Women in Astronomy

Joseph Wright

Caroline Lucretia Herschel

Caroline Lucretia Herschel (16 March 1750 – 9 January 1848) was a German astronomer, whose most significant contributions to astronomy were the discoveries of several comets, including the periodic comet 35P/Herschel-Rigollet, which bears her name. She was the sister of astronomer William Herschel, with whom she worked throughout her career.

She was the first woman to be awarded a Gold Medal of the Royal Astronomical Society (1828), and to be named an Honorary Member of the Royal Astronomical Society (1835, with Mary Somerville). She was also named an honorary member of the Royal Irish Academy (1838). The King of Prussia presented her with a Gold Medal for Science on the occasion of her 96th birthday (1846).

Information from Wikipedia



Hernietta Swan Leavitt

(July 4, 1868 – December 12, 1921) was an American astronomer who discovered the relation between the luminosity and the period of Cepheid variable stars. A graduate of Radcliffe College, Leavitt started working at the Harvard College Observatory as a "computer" in 1893, examining photographic plates in order to measure and catalog the brightness of the stars. Though she received little recognition in her lifetime, it was her discovery that first allowed astronomers to measure the distance between the Earth and faraway galaxies. She explained her discovery: "A straight line can readily be drawn among each of the two series of points corresponding to maxima and minima, thus showing that there is a simple relation between the brightness of the variables and their periods." After Leavitt's death, Edwin Hubble used the luminosity–period relation for Cepheids together with spectral shifts first measured by fellow astronomer Vesto Slipher at Lowell Observatory to determine that the universe is expanding (see Hubble's law)



Her discovery, which she produced from studying some 1,777 variable stars recorded on Harvard's photographic plates, is known as the "period–luminosity relationship" or "Leavitt's law": The logarithm of the period is linearly and directly related to the logarithm of the star's average intrinsic optical luminosity (which is the amount of power radiated by the star in the visible spectrum). In Leavitt's words, "A straight line can be readily drawn among each of the two series of points corresponding to maxima and minima, thus showing that there is a simple relation between the brightness of the Cepheid variables and their periods.

Information from Wikipedia

Amy Mainzer

(born January 2, 1974) is an American astronomer, specializing in astrophysical instrumentation and infrared astronomy. She is the Deputy Project Scientist for the Wide-field Infrared Survey Explorer and the Principal Investigator for the NEOWISE project to study minor planets and the proposed Near Earth Object Camera space telescope mission.



Mainzer received a B.Sc. in Physics from Stanford University with honors (1996) and holds an M.Sc. in Astronomy from California Institute of Technology (2000) and a Ph.D. in Astronomy from the University of California, Los Angeles (2003).

Her research interests include asteroids, brown dwarfs, planetary atmospheres, debris disks, star formation, and the design and construction of new ground- and space-based instrumentation. Asteroid (234750) Amymainzer was named after her.

She has appeared a number of times in the History Channel series *The Universe*. She also appears in the documentary featurette "Stellar Cartography: On Earth" included on the *Star Trek Generations* home video release (March 2010). Amy makes an appearance in the 2016 Documentary about the life of Leonard Nimoy and the effect of Spock on popular culture called "For the Love of Spock", directed by Leonard's son Adam Nimoy. She also serves as the science consultant and host for the live-action interstitials on the PBS Kids series *Ready Jet Go!* as of Winter 2016.

Information from Wikipedia

Jill Tartar

(born January 16, 1944) is an American astronomer and the former director of the Center for SETI Research, holding the Bernard M. Oliver Chair for SETI at the SETI Institute



Tarter received her undergraduate education at Cornell University, where she earned a Bachelor of Engineering Physics Degree, and a Master's degree and PhD in astronomy from the University of California at Berkeley.

Tarter has worked on a number of major scientific projects, most relating to the search for extraterrestrial life. As a graduate student, she worked on the radio-search project SERENDIP, and created the corresponding backronym, "Search for Extraterrestrial Radio Emissions from Nearby Developed Intelligent Populations". She was project scientist for NASA's High Resolution Microwave Survey (HRMS) in 1992 and 1993 and subsequently director of Project Phoenix (HRMS reconfigured) under the auspices of the SETI Institute. She was co-creator with Margaret Turnbull of the HabCat in 2002, a principal component of Project Phoenix. Tarter has published dozens of technical papers and lectures extensively both on the search for extraterrestrial intelligence and the need for proper science education. She is credited with coining the term "brown dwarf" for the classification of stars with insufficient mass to sustain hydrogen fusion. She has spent 35 years in the quest for extraterrestrial life and announced her retirement in 2012.

In 2011, Tarter delivered a talk, "Intelligent Life in the Universe: Is Anybody Out There?" , at the first Starmus Festival in the Canary Islands. The Festival, founded by astronomer Garik Israelin, is a blend of astronomy, allied sciences, music, and art, and Tarter subsequently joined the Starmus Board of Directors, along with Israelian, astrophysicist and Queen founding guitarist Brian May, theoretical physicist Stephen Hawking, evolutionary biologist Richard Dawkins, and others. Her 2011 talk was published in the book *Starmus: 50 Years of Man in Space*. Jill Tarter is a member of the Curiosity Stream Advisory Board.

Information from Wikipedia

Carolyn Porco

(born March 6, 1953) is an American planetary scientist known for her work in the exploration of the outer solar system, beginning with her imaging work on the Voyager missions to Jupiter, Saturn, Uranus and Neptune in the 1980s. She leads the imaging science team on the Cassini mission currently in orbit around Saturn. She is an expert on planetary rings and the Saturnian moon, Enceladus.

She has co-authored more than 110 scientific papers on subjects ranging from the spectroscopy of Uranus and Neptune, the interstellar medium, the photometry of planetary rings, satellite/ring interactions, computer simulations of planetary rings, the thermal balance of Triton's polar caps, heat flow in the interior of Jupiter, and a suite of results on the atmosphere, satellites, and rings of Saturn from the Cassini imaging experiment. In 2013, Cassini data confirmed a 1993 prediction by Porco and Mark Marley that acoustic oscillations within the body of Saturn are responsible for creating particular features in the rings of Saturn.



Porco was founder of The Day the Earth Smiled. She was also responsible for the epitaph and proposal to honor the late renowned planetary geologist Eugene Shoemaker by sending his remains to the Moon aboard the Lunar Prospector spacecraft in 1998.

A frequent public speaker, Porco has given two popular lectures at TED as well as the opening speech for Pangea Day, a May 2008 global broadcast coordinated from six cities around the world, in which she described the cosmic context for human existence. Porco has also won a number of awards and honors for her contributions to science and the public sphere; for instance, in 2009, New Statesman named her as one of 'The 50 People Who Matter Today.' In 2010 she was awarded the Carl Sagan Medal, presented by the American Astronomical Society for Excellence in the Communication of Science to the Public. And in 2012, she was named one of the 25 most influential people in space by Time magazine.

Porco was born in New York City. She graduated in 1970 from Cardinal Spellman High School in the Bronx, in New York City. She earned a BS degree from the State University of New York at Stony Brook in 1974. She received her Ph.D. in 1983 from the California Institute of Technology in the Division of Geological and Planetary Sciences. Supervised by dynamicist Peter Goldreich, she wrote her doctoral dissertation focused on Voyager discoveries in the rings of Saturn.

Information from Wikipedia

Edna DeVore

Edna was Director of Education and Outreach and CEO of the SETI Institute upon retiring in April, 16th 2018. She is also co-investigator for E/PO on NASA's Kepler Mission and SETI Institute's astrobiology research. Edna was a science teacher and planetarium director in several parts of northern California before directing the FOSTER program that put teachers on board the Kuiper Airborne Observatory, the predecessor to SOFIA's Airborne Astronomy Ambassadors program. She co-managed the SOFIA E/PO program until Dana Backman became the Director of SOFIA's Office of Outreach. She continues to be involved with SOFIA on a part-time basis.



Raymond College at University of the Pacific, BS
San Jose State, Instructional Technology, MA
University of Arizona, Astronomy, MS

Planetarium Director, Sierra Community College District
Associate Director of Astronomy & Physics Education at Lawrence Hall of Science

SETI Institute: Principle Investigator, Co-Director or Co-Investigator, 1992-2018

- Proposed, launched and managed: Flight Opportunities for Science Teach EnRichment (FOSTER) program on the Kuiper Airborne Observatory (KAO)
- SOFIA Airborne Astronomy Ambassador program
- Kepler space telescope EPO (Education & Public Outreach) including educational kits
- Co-Investigator for Voyages Through Time (VTT) interdisciplinary curriculum
- Conceived and lead Reaching for The Stars: NASA Science for Girl Scouts
- PI for the Girls Go to Mars Program to teach Girl Scouts about Mars and the MAVEN Mission

NASA Advisory Council Astrophysics Subcommittee

Board of Directors for the Astronomical Society of the Pacific

Director of Education and Outreach, SETI Institute

Deputy CEO, SETI Institute

HONORS:

- American Association for the Advancement of Science 2018 Fellow
- SETI Institute Fellow 2017
- Aerospace Awareness Award, Women in Aerospace 2005
- SOFIA Outreach 2012
- Outstanding Student Researcher, School of Education, San Jose State University 1989
- U.S. Department of Education, Christa McAuliffe Teaching Fellow for California 1987-88
- Fellow, International Planetarium Society, 1986

Information from Pamela Harman article: "Edna DeVore, a leader in astronomy and astrobiology education, retires"