



Women in Astronomy

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Today, we will explore...

Context for our conversation about women in astronomy

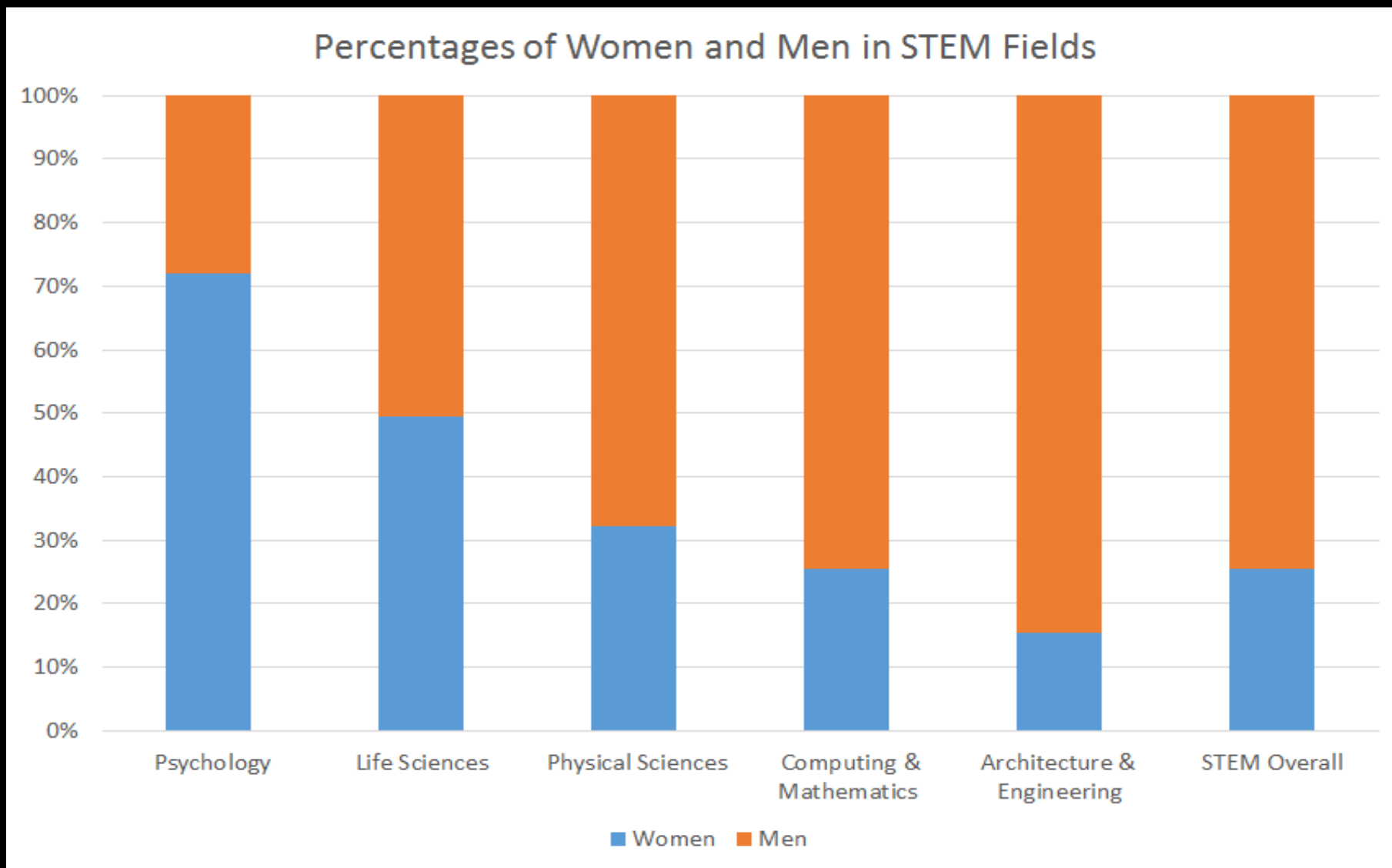
Stories and work of 5 women in astronomy

Ways to become better advocates for women in astronomy

How many **women** astronomers can you name?

A word cloud featuring the names of various women, with sizes and colors varying. The names are arranged in a roughly rectangular shape, with some names being significantly larger than others. The colors range from light blue and cyan to dark purple and red. The names include:

Elena V. Pitjeva
Deborah Jackson
Henrietta Leavitt
Natalie Batalha
Nicole-reine Lepaute
Merieme Chadid
Jill Tarter
Courtney Dressing
Mazlan Othman
Chanda Prescod-weinsten
Priyamvada Natarjan
Vera Rubin
Sophia Brahe
Mary Sommerville
Paris Piñmi
Aglanice
Aomawa L. Shields
Dara Norman
Nancy Roman
Athena Coustenis
Al-'ijliya, Al-usturlabi
Beth Brown
Reva K. Williams
Feryal Ozel
Carolyn Porco
Annie Maunder
Cecilia Payne-gaposchkin
Anja Cetti Andersen
Hypatia
Phoebe Waterman Haas
Tamara Smirnova
Sandra Faber
Elisa Quintana
Maria Cunitz
Neta Bahcall
Jane Luu
Debra Fischer
Margaret Geller
Janet Mattei
Jocelyn Bell Burnell
Jarita C. Holbrook
Sarah J Hill
Heidi Hammel
Caroline Herschel
Carolyn Shoemaker
Barbara A. Williams
E. Dorrit Hoffleit
Mercedes T. Richards
Liisi Oterma
France Anne-dominic Cordova



Source: U.S. Department of Labor, Bureau of Labor Statistics, 2015, Women in the labor force: A databook (Report 1059) (Washington, DC), Table 11

Problems faced by women in STEM:

Gender Stereotyping and Biases

Inflexible Education Settings

Fixed Mindsets

Erasure

These are systemic problems

Al'Ijliya

Wang Zhenyi

Cecilia Payne-Gaposchkin

Merieme Chadid

Chanda **Prescod-Weinstein**

9TH-10TH century
Astrolabes



9TH-10TH century

Al'Ijliya

Aleppo

Al-'Ijli al-Usturlabi ghulâm Bitolus; Al-'Ijliya ibnatuhu ma'a Sayf al-Dawla tilmidhat Bitolus

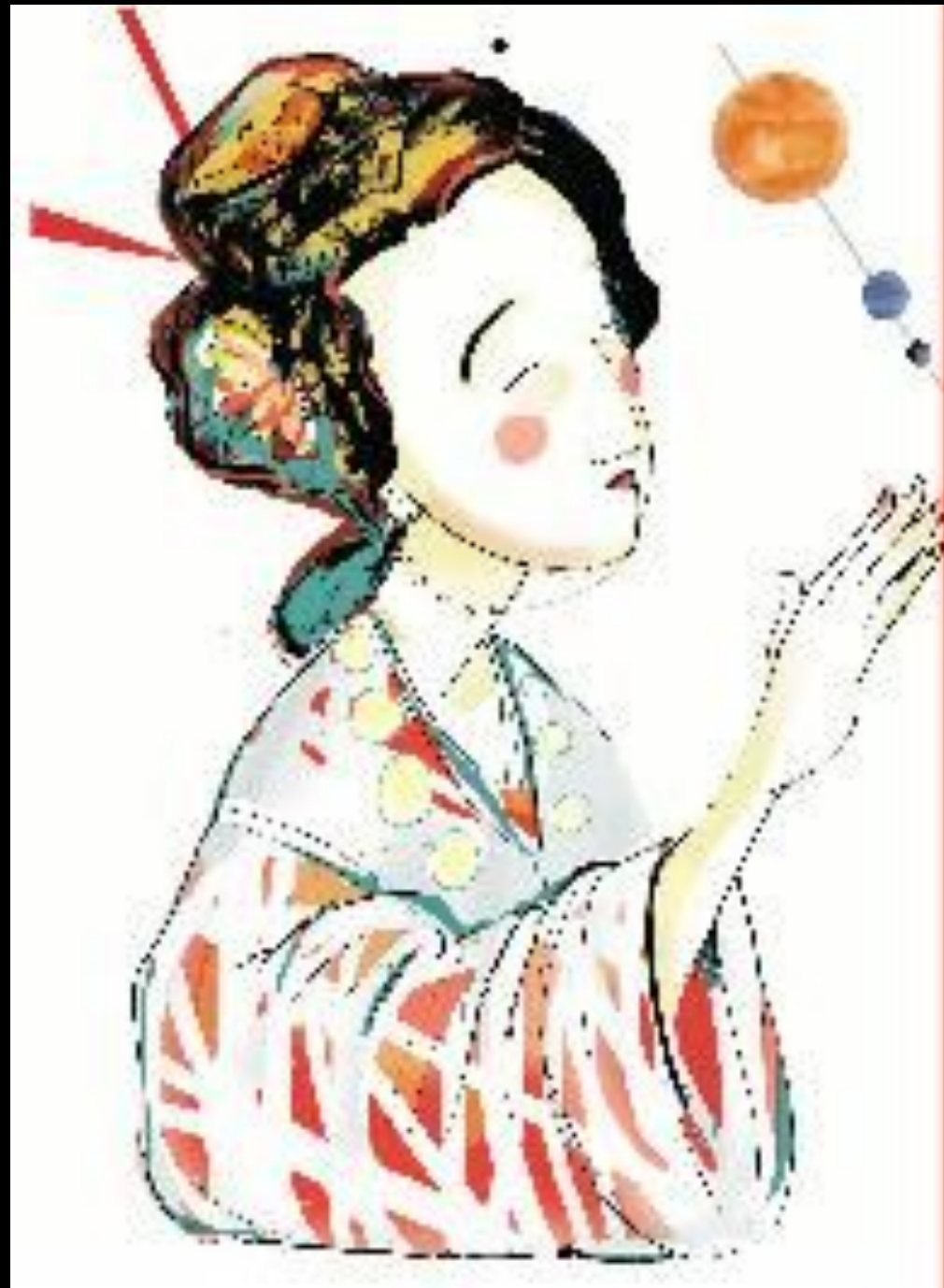


1768-1797

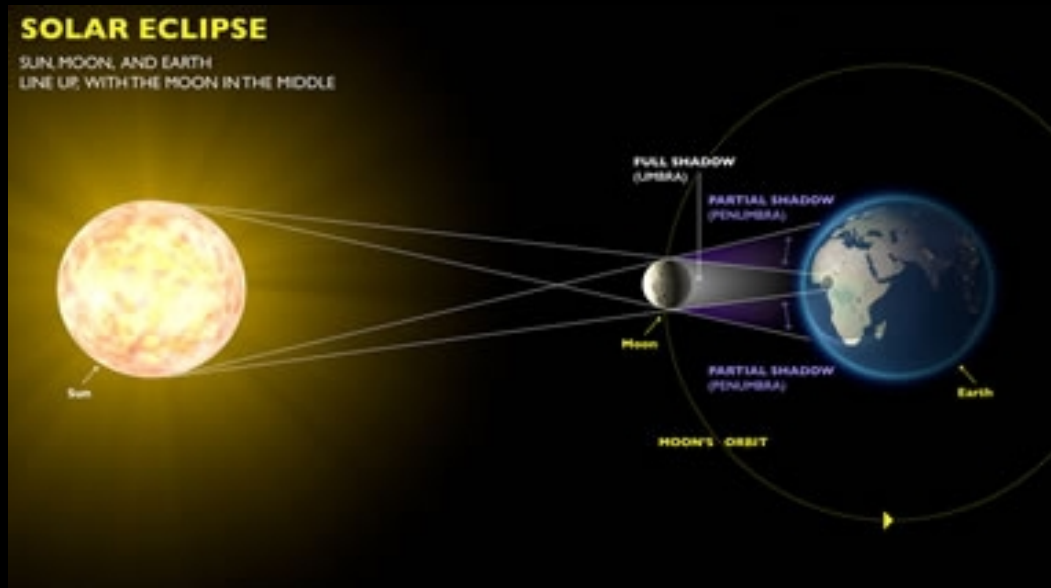
Wang Zhenyi

Qing Period

China



Mid 18th century Astronomical models



*It's made to believe,
Women are the same as Men;
Are you not convinced,
Daughters can also be heroic?*

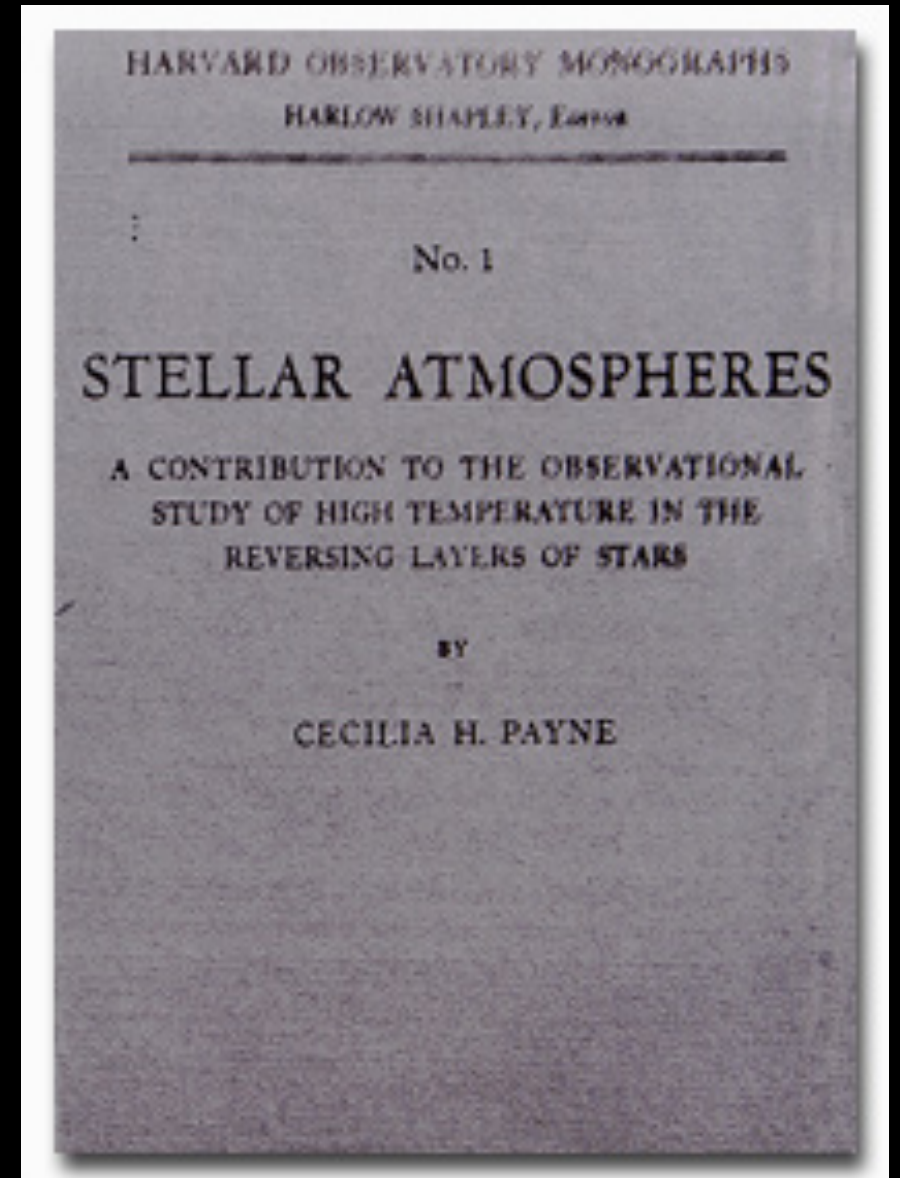
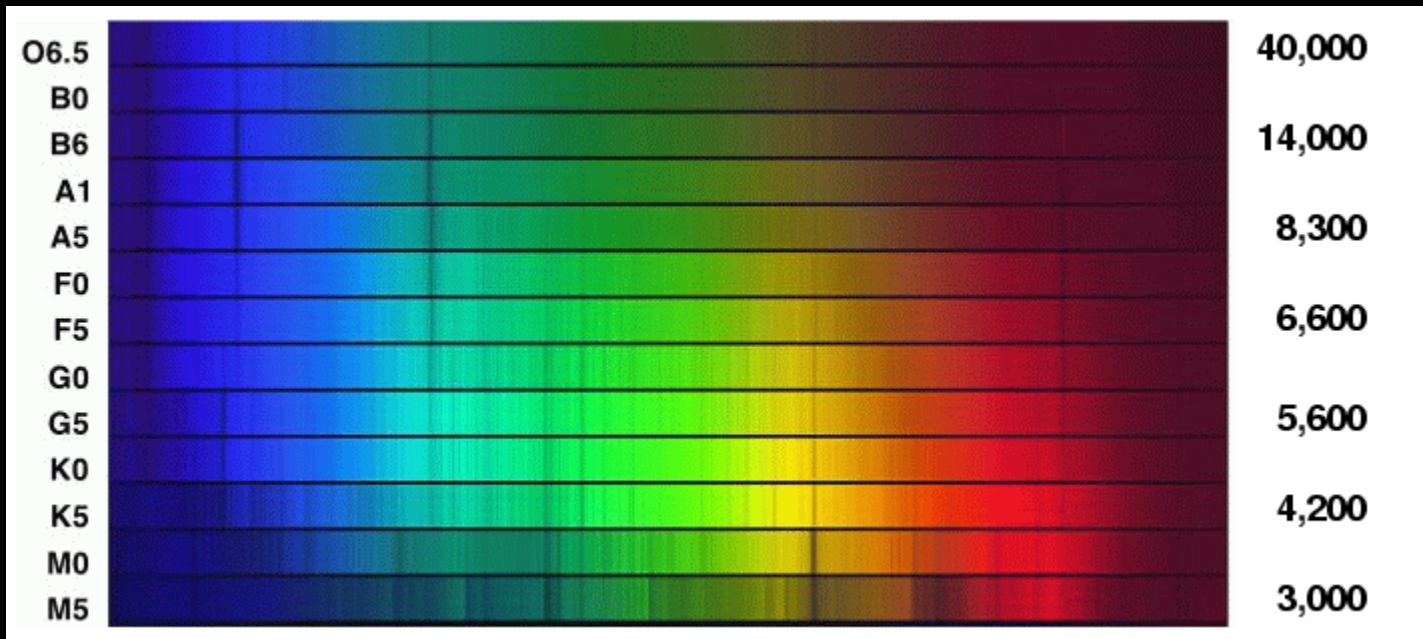
*I have traveled ten thousand li and read ten thousand
volumes. Bold is my attempt to surpass men.*

1900-1979

Cecilia Payne-Gaposchkin
Harvard University

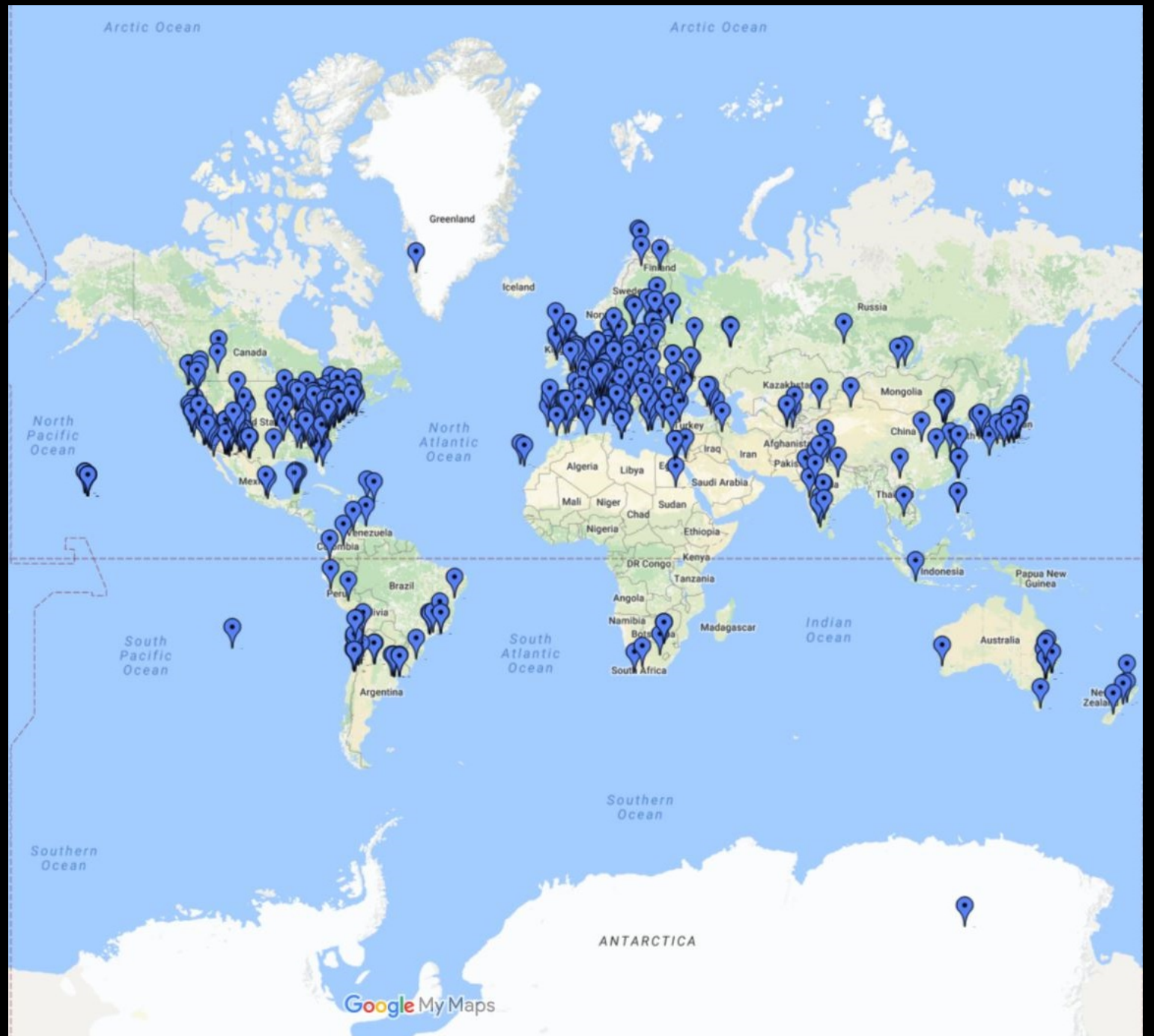


Early 20th century Solar spectroscopy



It should be remembered that the interpretation of stellar spectra from the standpoint of thermal ionization is new and the methods employed are as yet relatively primitive. We are only at the beginning of the astronomical application of the methods arising from the newer analyses of atoms. Hence we must expect (and endeavor to provide) that a study such as is presented here will promptly need revision and extension in many places. Nevertheless, as it stands, it shows the current state of the general problem, and will also serve, we hope, as a summary of past investigations and an indication of the direction to go in the immediate future.

21st century Observatories



21st century

Dome C

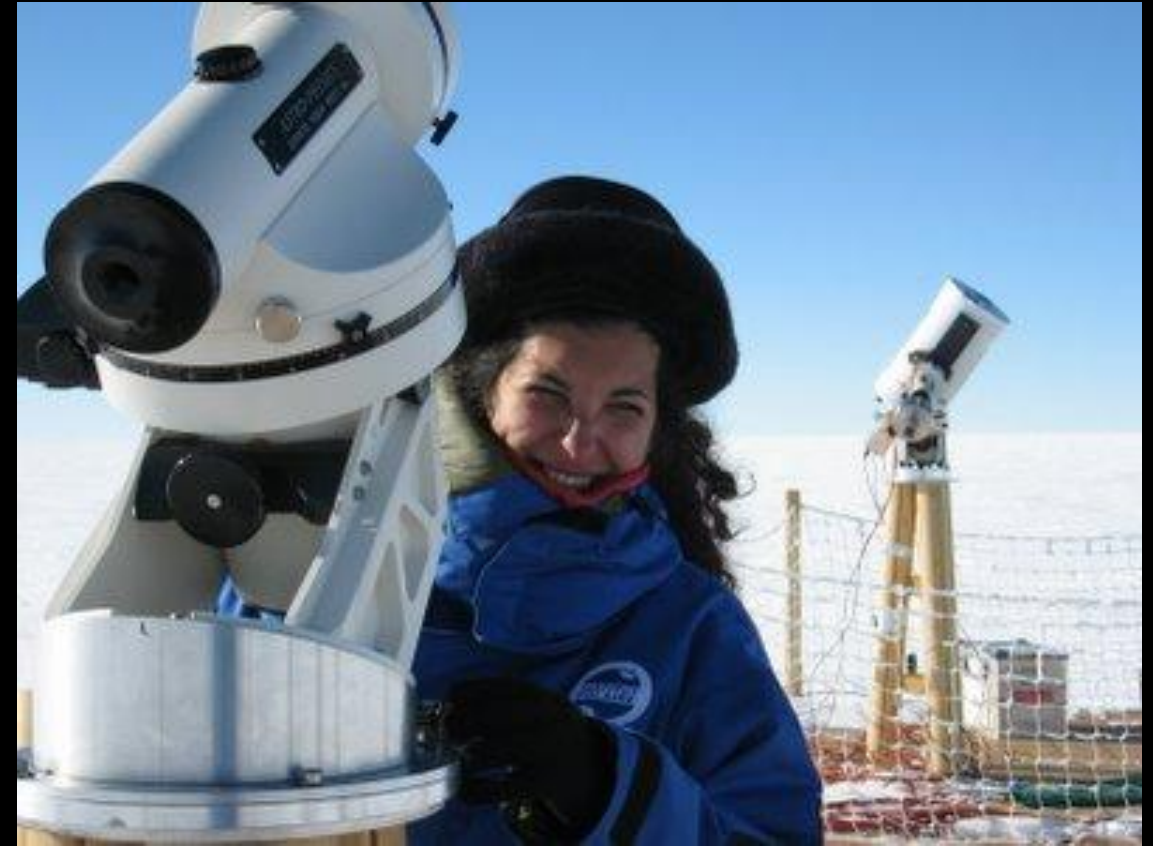


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1969-present

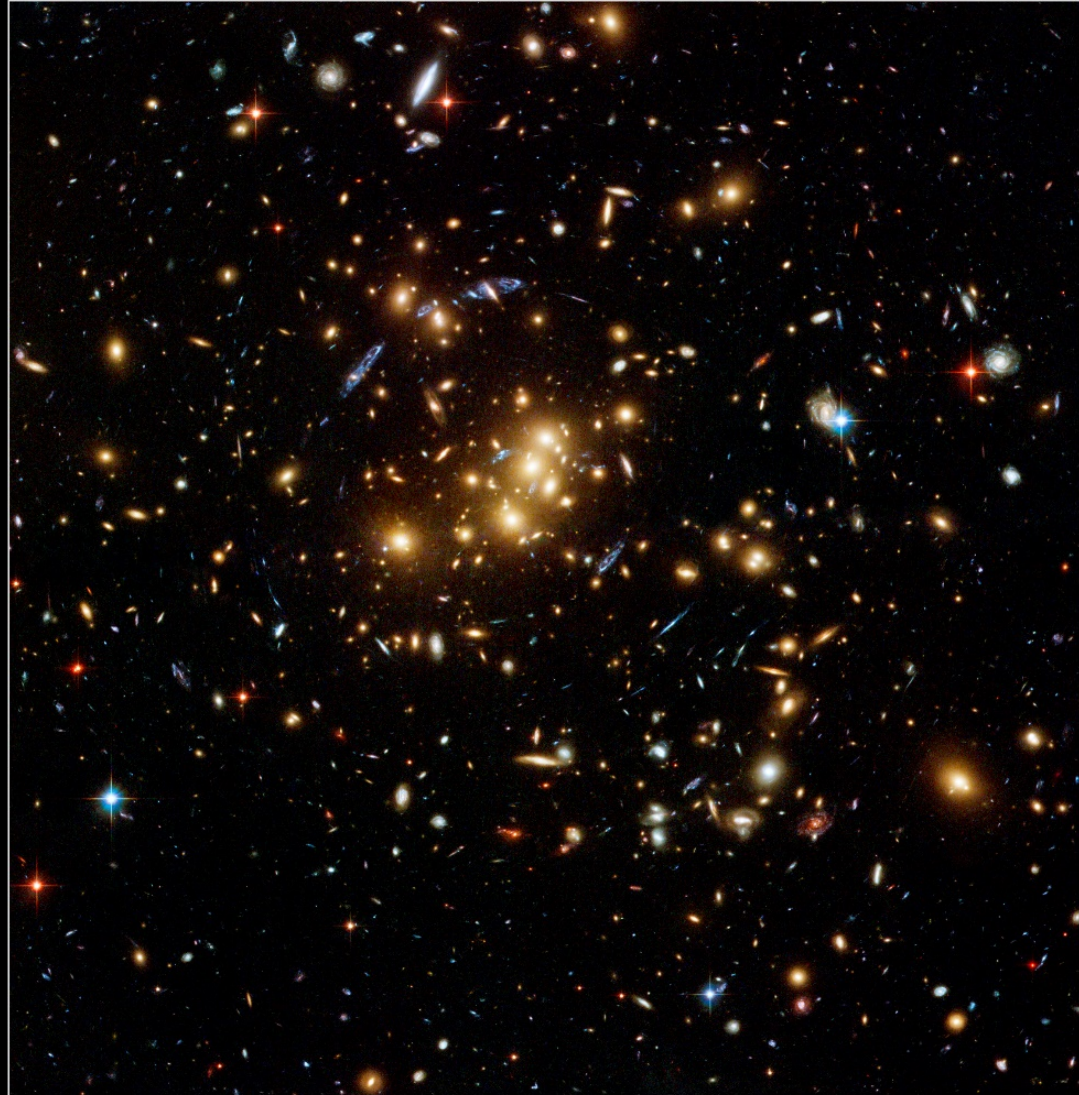
Merieme Chadid

University of Nice



Right Now

Dark Matter



Galaxy Cluster Cl 0024+17 (ZwCl 0024+1652)

Hubble Space Telescope • ACS/WFC

1983-present

Chanda Prescod-Weinstein

University of Washington



How do we become better advocates?

- **Gender Stereotyping and Biases**

- Avoid bringing up negative stereotypes about women and STEM.
- Make sure everyone is included in the experience.

- **Inflexible Education Settings**

- Create a collaborative environment (invite participation and teamwork).
- Avoid no's and point them in the right direction (no teasing, ask questions such as why and how).

- **Fixed Mindsets**

- Praise them for their effort: discuss how intellectual skills can be developed with time and effort
- Highlight the struggle of scientists: it doesn't come easy to them either!

- **Erasure**

- Repeat back a girl's wording when responding to their answer or question.
- Highlight the stories of successful scientists that you know, especially women.

Questions?

