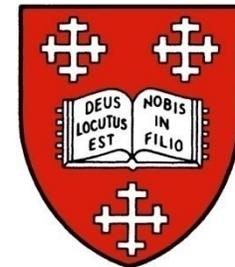


The position of women in astronomy (internationally)

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&
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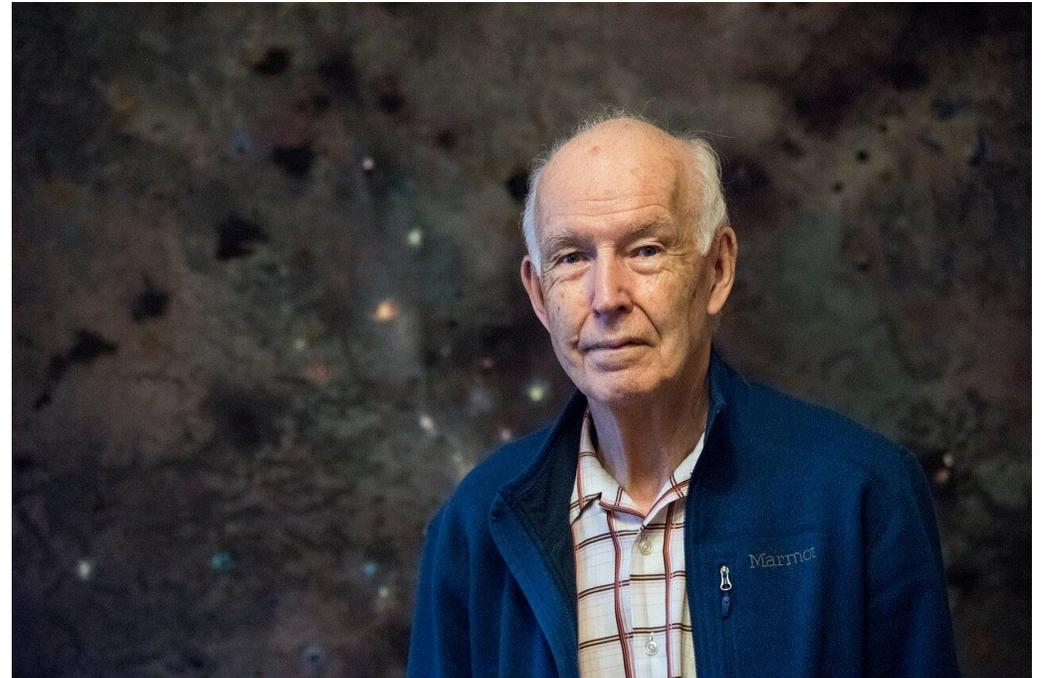
Abstract

- Using International Astronomical Union data, I study how the number of women in astrophysics world-wide is changing.
- The UK's initiative, the Athena SWAN scheme is introduced and it's spread to other countries is explained



Women and the IAU - 1990

- The IAU sees the status of women (in astronomy) as essentially a social issue.
- 1990 'The IAU regards itself as a body devoted to the promotion of astronomical science and to this extent has tried not to cross the line into matters of social concern.'



Derek McNally
Gen Sec IAU 1988-91

Johannes Andersen 1943 - 2020



- General Secretary IAU,
1997 - 2000

Johannes Andersen 1943 - 2020



- General Secretary IAU
1997 - 2000



Birgitta Nordström; was she
suffering prejudice in Denmark?

Johannes started recording IAU
membership data segregated
by gender!

Women in astronomy today worldwide

Overview of IAU membership data

- IAU now has 14000 members – individual & junior.
- Data recorded by country where you work, by gender and age. (Individual and junior categories merged)
- (Only 4 people out of 14000 refused to specify whether female or male!)



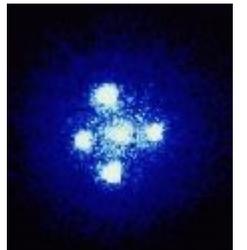
International Astronomical Union Data

% of astronomers who are female: countries with >200 astronomers					
Country		% female		Country	% female
Italy		28%		USA	17%
France		26%		Canada	16%
Brazil		23%		India	14%
Spain		22%		China Nanjing	13%
Russian Fed		21%		Germany	13%
Netherlands		19%		UK	13%
Australia		18%		Japan	7%
WORLD AVERAGE		19%			

As of 1 June 2020

Notes

- You have to be nominated by your country's professional body – filter!
- Data from:
www.iau.org/administration/membership/individual/distribution/



So.....

- S. Europe & Latin America have higher % of female astronomers
- N Europe and the English-speaking countries have lower %
- Limiting factor is culture, not women's brains
- There is believed to be a similar distribution for physics & maths



Possible cultural factors

Men are in other subjects, which are seen as more prestigious.

Parents live nearby (child-minding)

Lots of poor people – poor women willing to be your housekeeper, childminder, maid,.....



Changes since 2016

(IAU member countries with > 100 members)

- Female world average has risen from 17% to 19%
- (NB Junior membership introduced in 2018; this led to a jump in female membership)
- **HIGH RISERS in last 4 years:**
- **Netherlands 10% to 19% F *******
- **Chile 15% to 21% F**
- **India 9% to 14%F**
- Belgium, Germany, Italy, Mexico, S. Korea, USA have all risen by 3%.

Age distribution of members

Age	no F	no M	no M/no F
25 - 35	202	332	1.6
35 - 45	677	1500	2.2
45 - 55	564	2093	3.7
55 - 65	429	2039	4.8
65 - 75	290	1744	6
75 - 85	143	1132	7.9
85 - 95	20	220	11

This looks like two very different populations!

Which group is most affected by Corona Virus lockdown?

HOW WILL THIS PLAY OUT?

The road to equality in UK universities



Statistics (UK)

- Data are collected – how many women/men are there at each level
- Shows women are in a minority; the minority gets smaller the higher the level.
- Shows women progress more slowly than their male counterparts – do they brag less? – unconscious bias?
- Shows women put in fewer grant applications, are less willing to apply for jobs...funding system favours the brave?



Fix the women!

- Make women braver, more willing to put in grant applications, to apply for promotion, to apply for jobs.
- Special training courses for women to address these deficiencies.
- **NB Assumes the problem is with the women; no problem with the way science/society is run!**



Special funding for women

- Returner Fellowships (for coming back after a career break).
Other things open to women only?
- Risk that people say *'You only got that position because you were a woman; you are not up to the standard of the rest of us.'*
- Increasingly these types of funding are open to both M & F.



Supporting individual women not working

- Funding agencies begin to realise that giving funding to individual women helps those women but doesn't change anything in the long run.
- Begin to look for '**institutional change**' making a place fairer for all (not just women).



Institutional change – some examples

- Individuals not discriminating but structures may be
- Institutional sexism – possible biases in recruitment or retention
- unawareness of different management styles
- unconscious bias

- E.g. M F other prefer not to say



Creation of Athena SWAN Award

Recognising women-friendliness



UK (£££), also
humanities,
Ireland
Australia,
Canada; USA

Is the change superficial?

- Thinking of women in astrophysics.....
- We are enabling more women to climb the ranks (like the ivy climbs a wall).....
- But is the structure underneath changed?



Changing perceptions

- 1930: Earl of Birkenhead '*The World in 2030*' (UK)

“In 2030 women will still, by their wit and charm, inspire the most able men towards heights that they could never themselves achieve.”

1946: USA. 65% people think men are smarter than women.

2018: USA. 86% think men and women are equally smart.



Institutional change – some examples

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The IAU at age 100 years - President and General Secretary



Jan 2021 IAU launches 'Springboard to Action'

Thank you for your attention!

