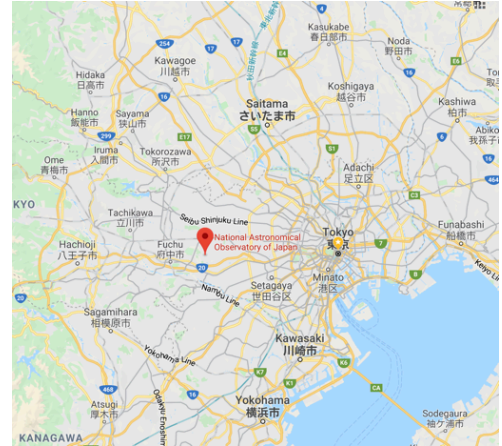




Meeting Overview

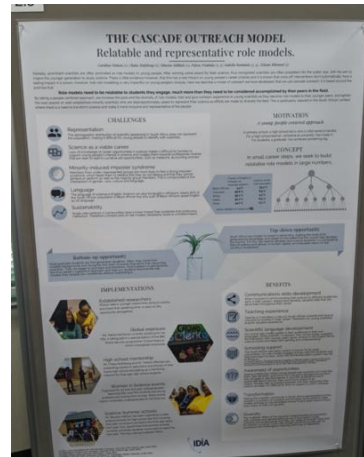
- 358th symposium meeting of the International Astronomical Union
 - First ever to not be purely science focussed
- ~120 attendees (had expected ~60, had ~160 registrants)
- Held 12th-15th November 2019 at the National Astronomical Observatory of Japan (NAOJ) headquarters in Mitaka, Japan





Meeting Overview

- Talks: covered an incredible range of topics including gender-diversity, neuro-diversity, LGBTIQ+, racism, accessibility for blind and vision impaired, using astronomy to bring positivity and various novel ways of communicating astronomy inclusively
- Discussions: actions for the IAU
- Posters: similarly broad scope including:





The Name Tag

Preferred pro-noun
(non-binary gender)

Braille Name



Communication
preference
(neuro diversity)

- Green – sociable
- Yellow – only with people known
- Red – prefer not to communicate

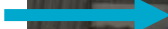
*Also 'eventee' app for real-time communications preferences



The Venue – NAOJ Mitaka



Real-time
captioning
(free)



Sign language translation
(expensive)

Accessible
pathways
(out of
picture)



*Also mentioned but not used – dual language slides





Female representation

@ International Astronomical Union, the IAU

Year	Percentage Female
1939	10.8
1948	10.3
1957	10.7
1969	8.8
1978	8.8
1987	9.6
1999	11.5
2008	12.9
2016	16.3
2018	18.0



Wilhelmina Iwanowska
1973-1979 Vice President



Ye Shuhua
1988-1994 Vice President



Catherine Cesarsky
2006-2009 President



Silvia Torres-Peimbert
2015-2018 President



Ewine van Dishoeck
2018-2021 President



Debra Elmegreen
2021-2024 President



Female representation

@ National Astronomical Observatory of Japan

20-30%
Students
Female

60% of admin
staff female
(steady with 10
yrs ago)

40% of tech
staff female
(25% 10 yrs
ago)

20% of
academic staff
female
(10% 10 yrs
ago)

2 female
astronomy
professors
(that weren't
targeted
appointments)

Introduced on-campus childcare, parental leave



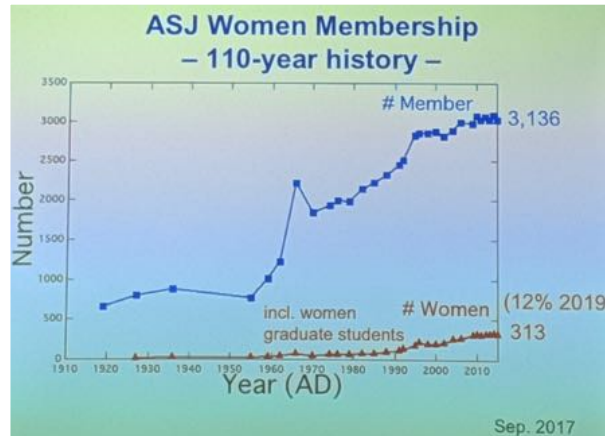
Female representation @ Astronomical Society of Japan

Female % below
that of IAU
(12% vs 18%)

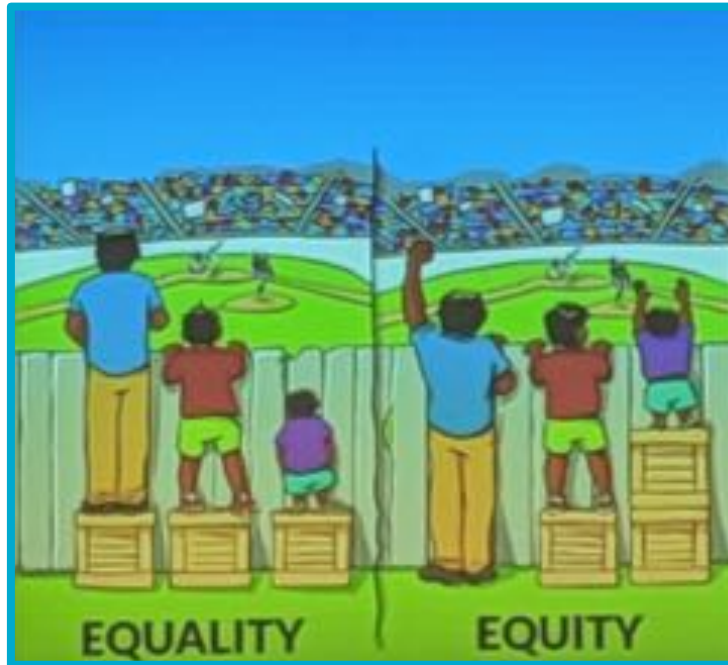
Only 80% of
females maintain
membership

First astronomy
meeting
childcare system
in 1999 was first
of any academic
meeting in Japan
at time

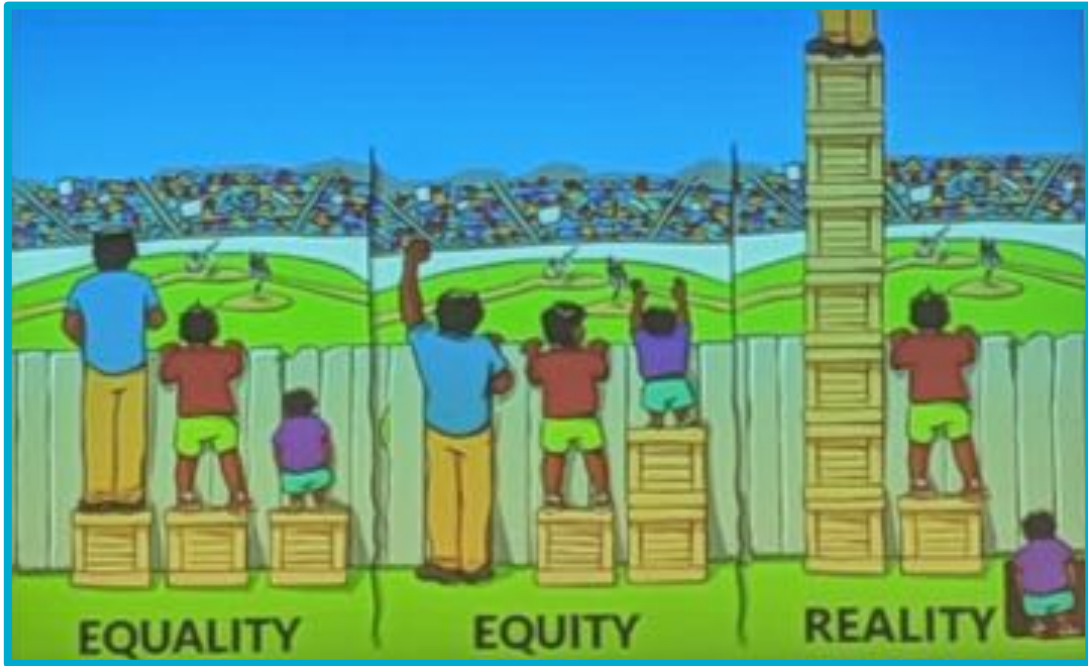
40% female
members
reported
harassment
2009, 44% in
2019



Importance of Equity vs Equality



Importance of Equity vs Equality



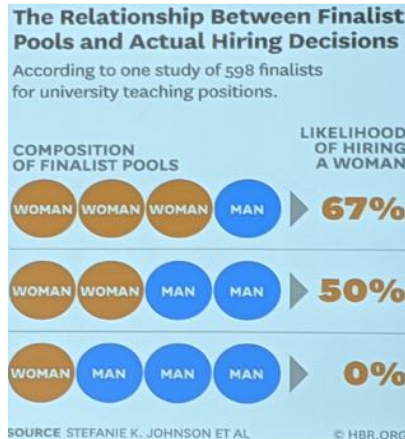


Recruitment

Mandatory bias training for all recruiters (NRAO does this)

"The best candidate is the one who has the required qualifications and experience as well as the qualities required to make the team more diverse and successful"

Being conscious of stereotype triggers and their affect on candidates



Affirmative action resulting in more productive staff (Kyushu study, cf male and non-affirmative recruitment) – also shown to be affective for afro-Brazilian student recruitment

Shortlisting percentages (see insert)



Including empowering team members to make decisions, to speak up & to be accountable for that which they control

Collaboration

Commitment

Including humility to admit mistakes & courage to embrace D&I wholeheartedly

Courage

Including active interest in learning, confidence to lead cross-cultural teams, changing behaviours for cultural environments

Cultural Intelligence

Traits of an Inclusive Leader

Including transparent decision making, 'fair play'

Cognisance

Curiosity

Including openness to uncertainty and inevitable ambiguity



Workplace culture

LGBTIQ+ initiatives (e.g. NRAO gender transition plan, t-shirts and office signage)

Adapting workplace for physical and cultural impairments (former e.g. universal building design, latter e.g. removal of gendered, colonial imagery)

Dedicated diversity officers (e.g. ESA, NRAO, CSIRO, SKA)

Athena-Swan (UK) / SAGE (Aus) / Dimensions (Canada) schemes



Innovative astronomy communication methods

Sports: Run for science 'run a black hole' (4km!) 'run a neutron star' (10km)

Food: Edible solar systems, baby universe cocktails, textured universe pralines

Song: Adrienne Provenzano, NASA solar system ambassador, composes (& sings!) songs of her messages

Travel: 'Astro-stays' Himalayan astro-tourism





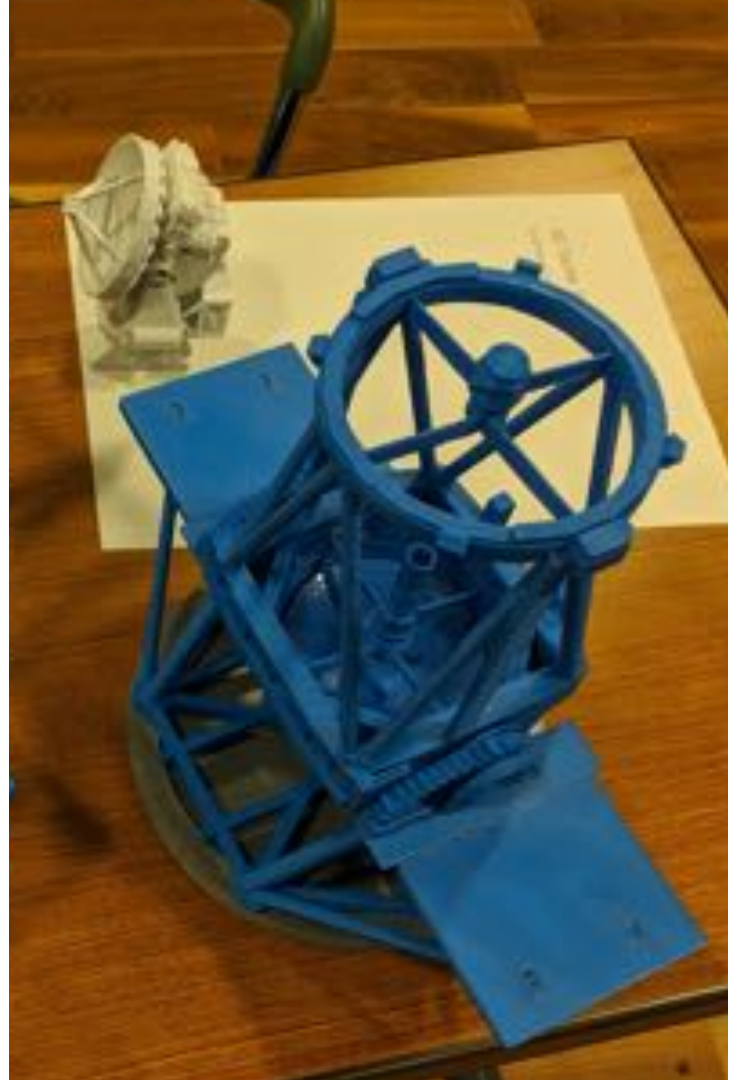
Data Sonification

- ‘visualizing’ data for vision impaired
- Examples:
 - M33 rotation curve, predicted vs observed
 - Transiting exoplanet
 - Stellar evolution (through to supernova)
 - Gamma ray burst ‘bing’
 - Flare star. Tone rising and falling
 - Fast Radio Bursts
- Talked to how many different aspects of sound you can utilise
- Need deeper musical education to appreciate more aspects of sonification
- To translate ‘beauty’ of an image is difficult because of subjectivity and cultural differences





3-D Models





Humbling Presentations



Astronomy at Nagashima Aiseien Sanatorium, outlet for creative thinking and research – became official meteorological monitor



Mobile planetariums taken to hospitals for terminally ill children



'Astronomers without Borders', using astronomy to inspire those caught in war and civil unrest



Using astronomy to address racism and discrimination in Brazil



Selection of Meeting Take-Aways



Diversity and inclusion increases productivity and innovation



Adopt neutrality in assigning task and roles to benefit all



Actively debunk stereotypical ideas
& be conscious of workplace triggers



“2 heads are only better than 1 if **they differ**”
Santiago Vargas-Dominguez



“Don’t do things for them, but with them”
Tom Shakespeare (Social model of disability)



Provide relatable role models
(with mind to workload on those representing minorities)



Inclusive leadership fundamental



Links

<https://iau-oao.nao.ac.jp/iaus358/>
<https://www.tactileuniverse.org>
<https://Astronomerswithoutborders.org>
<https://Inclusive-astronomy.org/running-an-event>
<https://ras.ac.uk/education-and-careers/exploring-workplace-lgbt-physical-scientists>
<https://www2.deloitte.com/content/dam/Deloitte/au/Documents/human-capital/deloitte-au-hc-six-signature-traits-inclusive-leadership-020516.pdf>
<https://www.nature.com/articles/s41550-019-0736-9>

arXiv 1907.04943 Aarnio et al. 2019
arXiv 1907.04893 Rasmussen et al. 2019

Co-learnium on "IAU Symposium 358:
Astronomy for Equity, Diversity and Inclusion"
Jimi Green | 9th January 2020

Australia's National Science Agency

