

IAU GA XXXI Focus Meeting 7 Post Meeting Report

Anthony Brown: chair of the scientific organizing committee

Scientific Organizing Committee

Chairs

Anthony Brown, Leiden, Netherlands
Aletha de Witt, Hartebeesthoek, South Africa
Christopher Jacobs, JPL, USA
David Hobbs, Lund, Sweden

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Maria Rioja, Perth, Australia/Spain
Federica Spoto, Harvard, USA
Yoshiyuki Yamada, Kyoto, Japan
Kathy Vieira, Copiapó, Chile
Tony Sohn, STScI, USA

Meeting website

<https://www.busan2021fm7.org/soc/>

Archived presentations

<https://zenodo.org/communities/iau-ga-2022-fm7/>

Final scientific programme

The tables below contain the programme and indicate whether the talk was invited [I] or contributed [C], and whether the speaker was male [M] or female [F].

FM7-1 Astrometry science highlights

Speaker	Title	I/C	M/F
Lennart Lindegren	21st Century Astrometry and its Science Applications	I	M
Rachael Beaton	The 21st Century Challenge of Distances: More Robust, Faster, and Farther	I	F
Alex Golovin	The Fifth Catalogue of Nearby Stars (CNS5): catalogue construction, completeness, and luminosity functions	C	M
Gordian Edenhofer	The Galactic 3D large-scale Distribution of Dust from Astrometric Data	C	M
Minia Manteiga (talk presented by Arturo Manchado)	Galactic Planetary Nebulae central stars properties and binarity from Gaia EDR3 astrometry and photometry	C	F

FM7-2 Astrometry science highlights

Speaker	Title	I/C	M/F
Sergei Koposov	The stellar streams revolution with Gaia	I	M
Paolo Tanga	The Gaia mission and the Solar System: new perspectives	I	M
Daniel Mikkola	The velocity distribution of white dwarfs in Gaia EDR3	C	M
Shuangjing Xu	The Astrometric Animation of Water Masers towards the Mira Variable BX Cam	C	?
Tony Sohn	Proper Motions in the Outer Halo and beyond the Milky Way	C	M

FM7-3 Astrometric techniques

Speaker	Title	I/C	M/F
Mark Reid	Advances in VLBI Astrometry	I	M
Sylvestre Lacour	Astrometry of exoplanets with optical interferometry	I	M
Laurent Loinard	VLBI astrometry in the epoch of Gaia	C	M
Megan Johnson	Five Years of USNO 50% VLBA Time	C	F
Lucas Hunt	Comparing Images of ICRF Sources at S, X, K and Q-band	C	M
Phil Cigan	Three years of ICRF3 source positions	C	M

FM7-4 Dense and accurate reference frames to optimize the science return from extremely large telescopes and large sky surveys

Speaker	Title	I/C	M/F
Francois Mignard	Status of the Multi-Wavelength Reference Frames	I	M
Davide Massari	Astrometry with the ELT	I	M
Christopher Jacobs	The X/Ka 2022b VLBI Celestial Reference Frame	C	M
David Gordon	Current Celestial Reference Frame Status at X/S and K Bands	C	M
Aletha de Witt	Imaging and Structure Analysis of ICRF sources at X and K-band	C	F
Oleg Titov	New explanation of the observed large positional offsets between radio and optical coordinates of the extragalactic objects	C	M

FM7-5 Future astrometric surveys

Speaker	Title	I/C	M/F
Richard Dodson	Ultra-precise Astrometry with the SKA	I	M
David Hobbs	The Hidden Regions – Future space astrometry in the Near InfraRed	I	M
Yoo Jung Kim	Spectroastrometry with Photonic Lanterns	C	F

FM7-6 Synergy between astrometric, photometric, and spectroscopic surveys

Speaker	Title	I/C	M/F
Anna Queiroz	StarHorse parameters for spectroscopic surveys with Gaia EDR3: ages for sub-giants and chemical substructures in the solar vicinity	I	F
Chao Liu	When Gaia meets LAMOST	I	M
Yuan-Sen Ting	Precision Galactic Archaeology: Revealing the Milky Way's Engines through the Statistical Alignment of Stars	C	M
Areg Mickaelian	Luminosity function of white dwarfs and discovery of new white dwarfs by means of Gaia EDR3 data	C	M

Scientific highlights

- Lindegren presented an overview of modern astrometric techniques emphasising the enormous advances made with the Gaia mission and how this provides a unifying framework for the various ground and space based astrometric facilities.
- Invited talks highlighted the advances in the accurate calibration of the distance scale (Beaton), the revolution in the studies of stellar streams (Koposov) and the solar system (Tanga) thanks to Gaia. The invited contribution by Queiroz provided an excellent example of synergies between Gaia and ground based photometric and spectroscopic surveys, leading to accurate catalogues of astrophysical properties of stars, including precise distances.

- Astrometry with interferometric techniques in the radio and optical were discussed by Reid and Lacour, while Massari and Mignard discussed the importance of accurate astrometric reference frames in the upcoming era of extremely large telescopes.
- Future prospects for precise astrometry in the radio and optical/IR domains were discussed by Dodson (SKA prospects) and Hobbs (GaiaNIR mission).
- The contributed talks highlighted the broad impact of astrometry on astronomy and astrophysics.

List of participants

As the meeting was held at the IAU GA XXXI there is no detailed record of the participants. Keeping track of the number of participants was in addition rather difficult for this hybrid meeting.

Executive summary

See above for the SOC members and meeting programme. For this meeting some 45 abstracts were submitted of which a number as e-poster or e-talk. Unfortunately this meant that the talk slots available could not all be filled.

- The headline review was presented by one of the 2022 Shaw Prize winners, Lennart Lindegren (30 minute talk, including questions).
- Each invited speaker had 20 minutes (including questions).
- Each speaker for a contributed talk had 12 minutes (including questions)
- 3 e-Talks were presented by: Mashoor Alwardat, Naoteru Gouda, and Vincent Robert.
- 10 e-Posters were presented by: Valeri Makarov, Masato Tsuboi, Emil Puha, Alisher S. Hojaev, Rainer Koehler, Sergei Kalabanov, Taihei Yano, James (Gerbs) Bauer, Zinovy Malkin, and Antonia Wilmot
- Number of invited speakers: 8 male, 4 female
- Number of invited speakers accepted: 10 male, 2 female
- Number contributed talks: 14 male, 4 female
- The sessions were chaired by Anthony Brown, David Hobbs, Christopher Jacobs, and Daniel Hestroffer.

List of represented countries

These are only the countries of the SOC members and speakers/poster presenters.

Netherlands, Sweden, South Africa, USA, Germany, France, China, Uruguay, Australia, Spain, Japan, Chile, Korea, Uzbekistan, United Kingdom, Armenia, Italy, Slovakia, Mexico, United Arab Emirates, Russian Federation.