

# MWGaiaDN

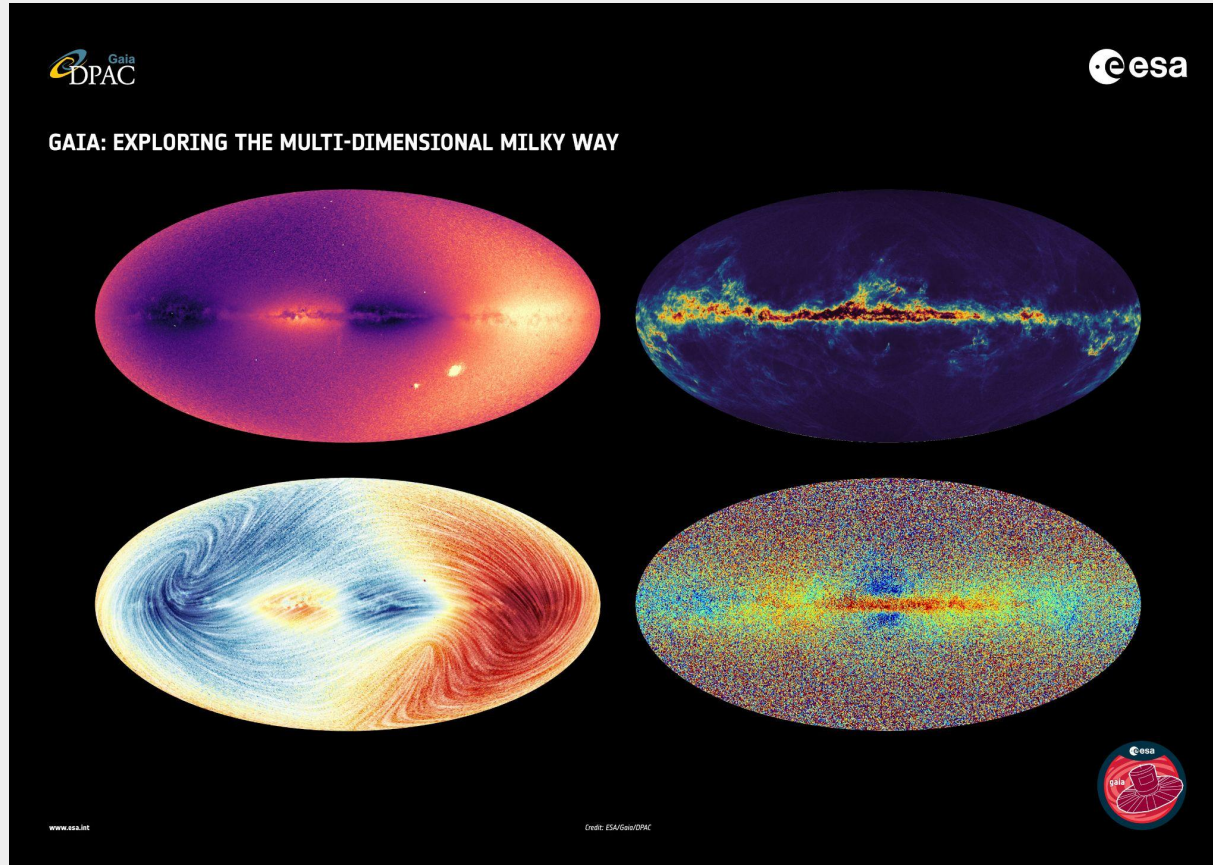
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**MWGaiaDN**

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# Science with Gaia data for the future of astrometry



# Science with Gaia for the future of astrometry

- PhD projects focused on the science that can be extracted from Gaia DR3 and Gaia DR4
- PhD projects that look forward towards the potential follow-up to the Gaia mission, GaiaNIR
- Investigate the technical challenges that will have to be overcome
- Gaia celestial reference frame will be investigated in detail
- Challenges of sub-microarcsecond astrometry will be researched aiming at relativistic astrometric models at the 10 nanoarcsec level.

# Beneficiaries and academic partners

- Universiteit Leiden
- INAF-Padova
- Lunds Universitet
- Universitat de Barcelona
- Universidade de Coimbra
- Technische Universität Dresden
- Université Grenoble Alpes
- National and Kapodistrian University of Athens

10 PhD positions (2 for each of UB and Dresden) + 2 PhD positions at Cambridge and UCL

- University of Cambridge
- University College London

<https://www.mwgaiadn.eu>

# Associated partners

- Airbus Defence and Space
- DAPCOM Data Services
- Leonardo
- Intersystems Iberia
- Spin.Works
- SUIL Interactive
- Thales Alenia Space UK
- CNRS-Meudon
- DIRAC Institute
- National Astronomical Observatory of Japan
- South African Astronomical Observatory and IAU Office for Development
- Padova University

# Work packages

1. Network Management (Leiden, Brown)
2. Network Training (Barcelona, Romero-Gómez)
3. Gaia Frontiers: the Milky Way as a Galaxy (Grenoble, Babusiaux)
  - ▶ PhDs at Leiden, Barcelona, Grenoble, UCL
4. Gaia Frontiers: Stars and Planets (INAF, Vallenari)
  - ▶ PhDs at Barcelona, Padova, Athens, Cambridge
5. Gaia Fundamentals: Space and Time (Lund, Hobbs)
  - ▶ PhDs at Lund, Coimbra, Dresden (2x)
6. Impact, Inclusiveness, and Public Engagement (Cambridge/Athens, Walton/Hadzidimitriou)

# Network events

What	Where	Lead	Dates
Kick-off meeting	Leiden	Leiden	Mar 22/23 2023
Training programme: Kick-Off Workshop	Barcelona	Barcelona	Sep 7/8 2023
ESR Induction school + Diversity, public engagement and communication	Leiden	Leiden	Jan 29-Feb 2 2024
Mid-term review	Online	Leiden	April 16 2024
The Art of Astrometry and computation	Lund	Lund	Jun 24-28 2024
ESR school: Introduction to Astro-statistics and data visualisation	Coimbra	Coimbra	Sep 9-13 2024
Outreach Event: MWGaiaDN @ IAU GA or EAS (posters/talks)	Capetown/Padova	SAAO/Athens	Jul/Aug 2024
Frontiers of stellar physics	Padova	INAF	Oct 15-17 2024
Galaxy modelling + galactic centre workshop	London	UCL	Dec 9-13 2024
ESR School on transferable skills: managing, entrepreneurial and IPR	Barcelona	UB/DAPC	June 2-6 2025
Roadmap: Technical Challenges workshop	Cambridge	Lund	Jul 15-16 2025
Gravitation and Astrometry	Dresden	Dresden	Week of Sep 8 2025
ESR School: Astro Big Data	Lyon	DIRAC	Early 2026
Outreach for schools: GaiaMap	Locations in Europe/Africa	Cambridge/Athens	TBD 2026
Final network meeting and closing conference	Athens	Athens	Jan 11-15 2027
Final review	TBD	Leiden	Mar-May 2027

- All events open to early stage researchers from outside MWGaiaDN
- Events highlighted in red mandatory for all PhD students in MWGaiaDN







# This workshop and MWGaiaDN

- Roadmap for future astrometry to be delivered as part of WP5 activities
- Research of ESRs feeds into roadmap
  - ▶ Science drivers and technical requirements
- Roadmap elements:
  - ▶ Existing White Paper(s)
  - ▶ New science elements identified since, in particular those related to low resolution spectrophotometry and RVS-like spectroscopy
  - ▶ Translate to top-level science requirements on GaiaNIR

# Planned secondments

- Secondment = hosting of ESR at partner institution for extended research stay
- Potential secondments have been identified for all ESRs
  - ▶ Distribution over academic and associate partners discussed during kick-off meeting and training workshop
- Dates are still to be decided in most cases, pending a clearer view on ESR research directions and what secondments would best fit