Rongjun Huang (黄镕钧)

Email: **Rongjun.Huang@icrar.org**,
Rongjun.Huang@research.uwa.edu.au, Astro@Rongjun-Huang.com;
Web: **www.Rongjun-Huang.com**

EDUCATION

The University of Western Australia, The International Centre for Radio Astronomy Research, Crawley, WA, Australia

PhD student - **The Doctor of Philosophy**, 2025-2029.

Thesis: Environmental effects on Spatially-resolved Star Formation and Interstellar Medium Properties in the Virgo Cluster.
Supervisor: Prof. Luca Cortese

The Australian National University, Research School of Astronomy & Astrophysics, Weston Creek, ACT, Australia

M.Sc - **Master of Science (Advanced) - Astronomy and Astrophysics**, GPA - 7/7 With **Commendation,** June 2024.

Thesis: Negative Metallicity Gradient in Galactic Outflows Based on QED Simulations.
Supervisor: Prof. Mark Krumholz

The Australian National University, Research School of Astronomy & Astrophysics, Weston Creek, ACT, Australia

H.Sc - **Bachelor of Science (Honours) - Astronomy and Astrophysics**, **First Class Honours** (H1, 82/100), December 2022.

Thesis: Exploring the Intrinsic Scatter of the Star-Forming Galaxy Main Sequence at Redshift 0.5 to 3.0.
Supervisor: Dr. Andrew Battisti

The Australian National University, Research School of Astronomy & Astrophysics, Acton, ACT, Australia

B.Sc - **Bachelor of Science - Astronomy and Astrophysics**, GPA - 5.6/7, June 2021.

Thesis: Using `MAGPHYS+photo-z` to Characterise the Properties of Star-Forming Galaxies.
Supervisor: Dr. Andrew Battisti

FIRST-AUTHOR PUBLICATIONS

1. ***MAUVE–MUSE: The Origin of Spatially-resolved Mass–Metallicity Relation's Secondary Dependence on Star Formation Rate Surface Density***

   Rongjun Huang, Luca Cortese, MAUVE–Collaboration. **2026**.
   (In prep).

2. **Quokka-*based understanding of outflows (QED) - IV. Limitations of Hα as an outflow diagnostic***

   Rongjun Huang, Aditi Vijayan, Mark R. Krumholz. **2026**.
   MNRAS (Submitted). **DOI: 10.48550/arXiv.2511.05056**.

3. **Quokka-*based understanding of outflows (QED) - II. X-ray metallicity gradients as a signature of galactic wind metal loading***

   Rongjun Huang, Aditi Vijayan, Mark R. Krumholz. **2025**.
   MNRAS (Published, Volume 539, Issue 2, May 2025, Pages 1723–1737). **DOI: 10.1093/mnras/staf593**. Citations: 1 (per NASA/ADS)

4. ***Exploring the Intrinsic Scatter of the Star-Forming Galaxy Main Sequence at Redshift 0.5 to 3.0***

Rongjun Huang, Andrew J. Battisti, Kathryn Grasha, Elisabete da Cunha, Claudia del P Lagos, Sarah K. Leslie & Emily Wisnioski. **2023**.
MNRAS (Published, Volume 520, Issue 1, March 2023, Pages 446–460). **DOI: 10.1093/mnras/stad108**. Citations: 11 (per NASA/ADS)

GRANTED OBSERVATION

Anatomy of a fall: Dissecting the environment-driven transformation of late-type Virgo cluster galaxies with HST UV-optical imaging of star clusters, associations, and HII regions
Co-PI – Hubble Space Telescope (HST) – 145 orbits (∼108.8 hr).

OBSERVATION EXPERIENCE

Extremely Metal Poor Stars in Milky Way
ANU 2.3m Telescope, Siding Spring Observatory (SSO), NSW, Australia
September 2019; 3 nights

The GALactic Archaeology with HERMES (GALAH) survey in 2024A
Anglo-Australian Telescope (AAT), Siding Spring Observatory (SSO), NSW, Australia
July 2024 [remote observing through Mount Stromlo Observatory (MSO) observation room]

HPC EXPERIENCE

NCI / Gadi
Project jh2: Star Formation and Feedback in a Turbulent Interstellar Medium. 2023-present.

Pawsey / Setonix
Pawsey0807. 2023-present.

Swinburne / OzSTAR
IFS Data Analysis (oz084). 2025-present.

CADC / CANFAR
Multiphase Astrophysics to Unveil the Virgo Environment (MAUVE). 2025-present.

SOFTWARE DEVELOPMENT

The nGIST Pipeline: A galaxy IFS analysis pipeline for modern IFS data
https://github.com/geckos-survey/ngist

Post-processing pipeline for Quokka simulation code as part of the `yt` frontend
https://github.com/chongchonghe/yt/tree/Rongjun-ANUquokka-frontend

INTERNSHIP

The Stability of the WiFeS Instrument on the ANU 2.3-Metre Robotic Telescope
Supervisor: A/Prof. Chris Lidman

ANU 2.3m Telescope, Siding Spring Observatory (SSO), NSW, Australia
01/29/2024–02/16/2024

PROFESSIONAL AFFILIATIONS

Member (Student) – ARC Centre of Excellence for All Sky Astrophysics in 3 Dimensions (ASTRO 3D), Australia 2020-2024

CONFERENCE TALKS

Exploring the Intrinsic Scatter of the Star-Forming Galaxy Main Sequence at Redshift 0.5 to 3.0
R. Huang. 2022 ASTRO 3D Science Meeting, Burnley, VIC, Australia (Talk; June 2022).

Sparkler Talk (1-min): Intrinsic Scatter of the Star-Forming Galaxy Main Sequence
R. Huang. 2023 ASTRO 3D Science Meeting, Freemantle, WA, Australia (Talk; June 2023).

GRANTS AND AWARDS

UWA Data Institute Awards 2025 Travel Grants: 2000 AUD	Decemember 2025
ASTRO 3D travel funds: 100 AUD	June 2022
ASTRO 3D travel funds: 1500 AUD	June 2023

LANGUAGE SKILLS

Pearson Test of English (PTE) Academic
Overall score 81: Listening 83, Reading 74, Speaking 90, Writing 80. Australia, 03 Jul 2024

PROFESSIONAL SKILLS

- Advanced experience with large astrophysical datasets (integral-field spectroscopy, simulations) and statistical modelling.
- Daily user of Python (NumPy, SciPy, Astropy, Matplotlib, Jupyter), plus experience with HPC environments and automated analysis pipelines.
- Comfortable with Mathematica, MATLAB, IDL, and common scientific tools (Emacs, DS9, ImageJ, LaTeX/BibTeX, Markdown, office suites).