

Seiji Fujimoto

Curriculum Vitae

Department of Astronomy & Astrophysics
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Work Experience

- 2025–present **Assistant Professor**, *University of Toronto, Canada*
- 2022–2025 **NASA Hubble Fellow**, *UT Austin, USA*
- 2021–2022 **Marie Skłodowska-Curie COFUND INTERCTIONS Fellow**, *Cosmic Dawn Center, Denmark*
- 2019–2022 **DAWN Fellow**, *Cosmic Dawn Center, Denmark*
- 2019–2019 **ALMA Project Researcher**, *NAOJ / University of Waseda, Japan*
- 2019–2019 **ICRR Project Researcher**, *University of Tokyo, Japan*

Education

- 2016–2019 **PhD in Astronomy**, *Graduate school of Science, Department of Astronomy, University of Tokyo*
Thesis: Demographics of the cold Universe with ALMA: From Interstellar and Circumgalactic Media to Cosmic Structures (advisor: Prof. M. Ouchi)
- 2014–2016 **Master of Astronomy**, *Graduate school of Science, Department of Astronomy, University of Tokyo*
Thesis: ALMA Faint-mm Sources Down to 0.02 mJy: Physical Origins and Contribution to the Extragalactic Background Light (advisor Prof. M. Ouchi)
- 2010–2014 **Bachelor of Astronomy**, *Department of Astronomy, University of Tokyo*
Thesis: Search for Dusty Starburst Galaxies at $z > 6$ (advisor: Prof. K. Kohno)

Awards & Prizes

- 2023 **The ASJ Young Astronomer Award Recipients**¹
- 2022 **NASA Hubble Fellowship**
- 2022 **Inoue Research Award for Young Scientists**
- 2021 **Marie Skłodowska-Curie Actions (MSCA) Seal of Excellence**
- 2019 **University of Tokyo School of Science Research Award for PhD Thesis**
- 2019 **Springer Thesis Prize**
- 2016 **University of Tokyo School of Science Research Award for Master Thesis**
- 2016 **Institute for Cosmic Ray Research President's Award for Master Thesis**²
- 2015 **University of Tokyo President's Award**

1. Annual award to the best Japanese astronomer under the age of 35.

2. Annual award to the best Master Thesis from Prof. T. Kajita (Nobel Prize in Physics 2015)

Research Grant & Funding

2025–2027	NASA JWST Cycle4 PI Award , \$1,287,810, (Admin D. Coe, J. Chisholm)
2025–2027	NASA JWST Cycle3 PI Award , \$218,086
2024–2026	NASA JWST Cycle2 PI Award , \$63,617
2024–2025	NASA Hubble Fellowship Year 3 , \$138,320
2023–2024	NASA Hubble Fellowship Year 2 , \$134,378
2022–2023	NASA Hubble Fellowship Year 1 , \$144,517
2022–2024	NASA JWST Cycle1 PI Award , \$85,945, (Admin E. Egami)
2022–2024	NASA Keck PI Awards , \$28,725
2021–2022	INTERACTIONS Fellowship Grant , \$123,000
2016–2019	JSPS Research Fellowship Grant , No.16J02344, \$92,000
2015–2019	EA ALMA PI Grant for research mobility , No. NAOJ-ALMA-145, 164, 179, 197, 231, \$12,000
2015–2019	Yukio Hayakawa Fund for research mobility , No. 89, 95, 106, \$92,000
2017	Graduate Research Fund for research mobility awarded by University of Tokyo , \$5,000

Awarded Telescope Proposals

Principal	N = 50
Investigator	(incl. 7 DDT)
1	JWST , <i>GO Cycle 1 1567</i> , 12.3 hrs Early Galaxy Assembly Uncovered with ALMA and JWST: A Remarkably UV and [CII] Bright, Strongly Lensed Sub- L^* Galaxy at $z = 6.072$
2	JWST , <i>GO Cycle 2 4573</i> , 4.5 hrs IFU Trio of ALMA, MUSE, JWST: Revealing Dynamical Interplay of Inflow/Outflow at $z = 6$ with Strong Lensing Aid
3	JWST , <i>GO Cycle 3 4762</i> , 15.3 hrs Panchromatic characterizations of the super-Eddington accretion black hole, host, and environment: Epicenter of red dots, mergers, and dusty starbursts at $z = 7.2$
4	JWST DDT , <i>GO Cycle 3 9223</i> , 38.7 hrs Let there be Light: Directly Witnessing the Birth of Metal-Free, Pop III Stars in an Ultra-Faint Galaxy at $z = 6.5$
5	JWST , <i>GO Cycle 4 6796</i> , 60.9 hrs Resolving Multi-phase Outflow/Inflow via Gas Dynamics and Chemical Abundance Distribution in a Sub- L^* Dwarf Galaxy at $z = 6.1$
6	JWST , <i>GO Cycle 4 6882</i> , 246.2 hrs Vast Exploration for Nascent, Unexplored Sources (VENUS)
7	ALMA DDT , <i>2021.A.00031.S</i> , 1.0 hrs The puzzling JWST object timely disentangled by ALMA: Dusty starburst at $z \sim 5$ or Ultra high- z galaxy at $z \sim 17$?
8	ALMA DDT , <i>2021.A.00022.S</i> , 4.6 hrs Establishing the Golden Reference of Early Galaxy Studies at $z \sim 8 - 9$ with [OIII] $\lambda 4363$ detection in JWST ERO

- 9 **ALMA DDT**, 2021.A.00006.S, 2.8 hrs
Spectroscopic confirmation of a strongly lensed star at $z = 6$
- 10 **ALMA**, 2025.1.01249.S, 11.8 hrs
Dynamical and FIR Characterizations of Extremely Over-massive Dusty AGN System Discovered at $z=9.3$
- 11 **ALMA**, 2025.1.00363.S, 21.3 hrs
Direct mapping of young stars, HII regions, and surrounding PDRs at $z=6$
- 12 **ALMA**, 2024.1.00551.S, 44.8 hrs
Probing the Host Galaxies of 45 Broad-line Little Red Dots at $z = 4.13 - 8.50$ with ALMA
- 13 **ALMA**, 2024.1.1197.S, 9.7 hrs
First Dynamical and FIR Characterizations of an X-ray luminous AGN host galaxy at $z > 10$
- 14 **ALMA**, 2024.1.01483.S, 10.1 hrs
Unlocking the Door to Gas Dynamics of $\sim 1-10$ pc scale Star Clusters at Cosmic Dawn
- 15 **ALMA**, 2024.1.00149.S, 16.7 hrs
IFU Trio of ALMA, MUSE, JWST: Revealing Dynamical Interplay of Inflow/Outflow at $z = 6$ with Strong Lensing Aid
- 16 **ALMA**, 2023.1.00802.S, 20.4 hrs
Deep Dive into the ISM at $z=6$ with ALMA + JWST: From the Individual Lensed Star to 1-20pc Star-Forming Clumps
- 17 **ALMA**, 2022.1.00073.S, 37 hrs
A joint ALMA and JWST public Legacy Field - Abell 2744
- 18 **ALMA**, 2022.1.00195.S, 27 hrs
Where does [CII] $\lambda 158\mu\text{m}$ originate? A panchromatic ~ 20 -pc scale view of ISM in a sub- L^* galaxy at $z = 6$ by ALMA and JWST
- 19 **ALMA**, 2022.1.00433.S, 25 hrs
Golden Reference for Metallicity Measurements at $z = 6 - 7$ by ALMA+JWST
- 20 **ALMA**, 2022.1.01567.S, 20 hrs
Dust in galaxies at $z = 8 - 11$
- 21 **ALMA**, 2021.1.00055.S, 17 hrs
Comprehensive ISM view down to a ~ 100 pc scale for a sub- L^* galaxy at $z = 6$ by ALMA, JWST, and JVLA
- 22 **ALMA**, 2021.1.00236.S, 19 hrs
Golden Reference for Metallicity Measurements at $z = 6 - 7$ by ALMA+JWST
- 23 **ALMA**, 2019.2.00050.S, 42 hrs
ALMA Exploration for a Remarkable Protocluster at $z = 5.69$
- 24 **ALMA**, 2019.1.00672.S, 12 hrs
First 3D-Illustration of the Ionized+Neutral Gas Down to 300-pc Scale Surrounding a Super Massive Black Hole at $z = 6.039$
- 25 **ALMA**, 2019.1.00236.S, 10 hrs
Strongly Lensed HST-dark Object Discovered by ALMA Lensing Cluster Survey
- 26 **ALMA**, 2017.1.00531.S, 18 hrs
ALMA Exploration for $z = 5.69, 6.01, \text{ and } 6.57$ Protoclusters

- 27 **NASA Keck, 2022B_N077**, 1 night
Physical Origin of the High [OIII]88um/[CII]158um Ratios in High-z Star-forming Galaxies Uncovered with JWST+ALMA+Keck
- 28 **NASA Keck, 2024A_N025**, 1 night
Physical Origin of the High [OIII]88um/[CII]158um Ratios in High-z Star-forming Galaxies Uncovered with JWST+ALMA+Keck
- 29 **VLT/Xshooter, 108.22MK**, 26 hrs
Beasts in the Bubbles: Remarkably UV-bright Galaxies at $z=9-10$
- 30 **VLT/MUSE, 109.22VV**, 8.9 hrs
IFU Trio of JWST, ALMA, and MUSE: Where is $\text{Ly}\alpha$ escaping?
- 31 **Subaru/SWIMS, S22A0094N**, 3 nights
Weighing the black hole in a young quasar at $z = 7.2$
- 32 **Subaru/SWIMS, S21B0108N**, 2 nights
Beasts in the Bubbles: Remarkably UV-bright Galaxies at $z = 9 - 10$
- 33 **Subaru/FOCAS IFU, S20A0045N**, 1.5 nights
Unveiling the Connection between 10-kpc $\text{Ly}\alpha$ and [CII] Halos at $z = 6.033$
- 34 **Subaru/FOCAS, S20B0150S**, 0.5 night
Most Massive Black Hole at $z > 6$ Mimicked by Strong Lensing?
- 35 **Subaru/MOIRCS, S16A0033N**, 1.5 nights
Uncovering the New Class of ALMA Sources Assisted by Gravitational Lensing
- 36 **NOEMA DDT, D22AC**, 10 hrs
The puzzling JWST object timely disentangled by ALMA: Dusty starburst at $z \sim 5$ or Ultra high- z galaxy at $z \sim 17$?
- 37 **NOEMA DDT, E19AD**, 4.6 hrs
Gas and Dust Properties in a Red Quasar Firstly Discovered at $z > 7$
- 38 **NOEMA, E20EO**, 5.0 hrs
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$
- 39 **NOEMA, E20EN**, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at $z=6.57$
- 40 **NOEMA, S21DM**, 34 hrs
Vigorously Turbulent Starburst Core in a Red Quasar Host at $z=7.2$
- 41 **NOEMA, W21EF**, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at $z=6.57$
- 42 **NOEMA, W21EH**, 27 hrs
A dive into the vigorously starburst core in a red quasar host at $z=7.2$
- 43 **NOEMA, W23DE**, 9.2 hrs
Deep [CII] 158um Line Spectroscopy for a Strongly and Multiply Lensed Galaxy at $z_{\text{spec}} = 10.17$
- 44 **NOEMA, W24EU**, 18 hrs
Unambiguous confirmation of the most distant [CII]158um line emission at $z_{\text{spec}}=10.17$
- 45 **JVLA DDT, 20A-520**, 13.2 hrs
First CO(1-0) Measurements of Strongly Lensed sub- L^* Galaxies at $z = 6$

- 46 **JVLA, 21A-145**, 22 hrs
Total Gas Content in a Vigorous Star-forming Red Quasar Discovered at $z > 7$
- 47 **JVLA, 21A-162**, 23.3 hrs
First CO(1-0) Measurements of Strongly&Multiply Lensed sub- L^* Galaxy at $z = 6.072$
- 48 **JCMT/SCUBA2, M17BP073**, 3 nights
Explore Submm Galaxy Nests in Protocluster at $z \sim 5 - 6$
- 49 **JCMT/SCUBA2, M18AP001**, 4 nights
Uncovering Obscured Star Formation in the Enormous Ly α Nebulae
- 50 **SMA, 2020B-S051**, 3 nights
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$

Large Projects Involved

- 13 **JWST Large Project, GO Cycle 4 6882**, Pls: S. Fujimoto & D. Coe, 296 hrs
Vast Exploration for Nascent, Unexplored Sources (VENUS)
- 12 **JWST Large Project, GO Cycle 4 7814**, Pls: A. Muzzin, D. Marchesini, and K. Suess, 259.8 hrs
MINERVA: Unlocking the Hidden Gems of the Distant Universe and Completing HST and JWST's Imaging Legacy with Medium Bands
- 11 **JWST Large Project, GO Cycle 3 6368**, PI: M. Dickinson, 194 hrs
The CANDELS-Area Prism Epoch of Reionization Survey (CAPERS)
- 10 **JWST Large Project, GO Cycle 3 5893**, Pls: K. Kakiichi, X. Fan, F. Wang, E. Egami, J. Lyu, J. Yang, 263.2 hrs
COSMOS-3D: A Legacy Spectroscopic/Imaging Survey of the Early Universe
- 9 **JWST Large Project, GO Cycle 3 5398**, Pls: J. Kartaltepe & M. Rafelski, 400 hrs
POPPIES: The Public Observation Pure Parallel Infrared Emission-Line Survey
- 8 **JWST Large Project, GO Cycle 2 3293**, Pls H. Atek & J. Chisholm, 147.8 hrs
JWST's GLIMPSE: Gravitational lensing & NIRCcam imaging to probe early galaxy formation and sources of reionization (GLIMPSE)
- 7 **JWST Treasury Project, GO Cycle 1 2561**, Pls I. Labbe & R. Bezanson, 83.3 hrs
Ultra-deep NIRCcam and NIRSspec Observations Before the Epoch of Reionization (UNCOVER)
- 6 **JWST Treasury Project, GO Cycle 1 2079**, PI: S. Finkelstein, 122 hrs
The Webb Deep Extragalactic Exploratory Public Survey: Feedback in Low-Mass Galaxies from Cosmic Dawn to Dusk (NGDEEP)
- 5 **JWST Treasury Project, GO Cycle 1 1727**, Pls: J. Kartaltepe & C. Casey, 218 hrs
The JWST Cosmic Origins Survey (COSMOS-Web)
- 4 **JWST ERS Project, Cycle 1 1354**, PI: S. Finkelstein, 65 hrs
The Cosmic Evolution Early Release Science Survey (CEERS)

- 3 **ALMA Large Project**, 2023.1.00180.L, PI: A. Faisst, 148 hrs
The COSMOS High-z ALMA-MIRI Population Survey (CHAMPS): A Wide-Area Comprehensive Survey of the Dusty Universe
- 2 **ALMA Large Project**, 2018.1.00035.L, PI: K. Kohno, 98 hrs
ALMA Lensing Cluster Survey (ALCS)
- 1 **ALMA Large Project**, 2017.1.00428.L, PI: O. Le Fèvre, 69 hrs
The ALMA Large Program to Investigate CII at Early times (ALPINE)

Supervising & Teaching

- 2024–2025 **Co-supervisor of Akiyoshi Tsujita (PhD student at University of Tokyo)**, *a paper submitted*
- 2023–2024 **Co-supervisor of Clara Giménez-Arteaga (PhD student at DAWN)**, *a paper published in A&A*
- 2021–2022 **Primary supervisor of Hollis Akins (Bachelor student at Grinnell College)**, *a paper published in ApJ*
- 2021–2022 **Co-supervisor of Vasily Kokorev (PhD student at DAWN)**, *a paper published in ApJ*
- 2021–2022 **Co-supervisor of Meghana Killi (PhD student at DAWN)**, *a paper published in MNRAS*
- 2016–2018 **Lecture talk in “Science Lab”**, Hikawa High School, Japan
- 2016–2017 **Teaching assistance for 5–6 bachelor students**, *for a week-long intensive course to make them obtain practical research experience*

Professional Service

- 2024 **JWST Cycle 3 TAC Panel Member**
- 2023 **ALMA Science Assessors (Proposal review for large programs)**
- 2020 **Committee member of DAWN PhD student selection**
- 2020 **Committee member of DAWN-IRES Scholars program Selection**
- 2019–present **Referee for telescope proposal of JWST, HST, Subaru, JCMT, ALMA, Gemini, VLT**
- 2017–present **Referee for journal papers of ApJ, ApJL, MNRAS, A&A**

Outreach Experience

- 2025 **Press Release**, “ALMA and James Webb Space Telescope Shed Light on “Cosmic Grapes””, ALMA, U.Tokyo, Dunlap observatory
- 2023 **Press Release**, “Set of Extremely Distant Galaxies (NIRSpec MSA Emission Spectra)”, NASA, ESA, CSA
- 2022 **Press Release**, “Hubble Sheds Light on Origins of Supermassive Black Holes”, ESA/Hubble, NASA, INAF, DAWN, NAOJ
- 2021 **Press Release**, “ALMA Discovers Rotating Infant Galaxy with Help of Natural Cosmic Telescope”, NAOJ, U. Tokyo, ICRR, DAWN

- 2019 **Press Release**, “Carbon Cocoon Surrounded Growing Galaxies – ALMA Spots Earliest Environment Pollution in the Universe –”, NAOJ, U. Tokyo, ICRR, U. Osaka, SNS, DAWN, NBI
- 2016 **Press Release**, “ALMA Resolves the Cosmic Infrared Background Light”, NAOJ, U. Tokyo, ICRR
- 2023 **Public talk** in Board of Visitors Meeting, “Exploring visible and obscured sides of the early Universe”, UT Austin, USA
- 2019 **Public talk**: “The Sense of Wonder”, All Nippon Airways, Japan
- 2017 **Web Article** “Beyond Connecting Dots”, School of Science News in U. Tokyo
- 2012–2014 **Monthly star gazing event management staff**, NAOJ

International Conferences (Recent Highlights)

- Summary **Invited (15), Peer-reviewed oral talks (>20), other oral talks (>30)**
- 2025 (invite) **The growth of galaxies in the Early Universe - X**, Sesto, Italy
- 2024 (invite) **Synergistic ALMA+JWST view of the early universe**, Leiden, Netherlands
- 2024 (invite, review) **Beyond the Edge of the Universe**, Sintra, Portugal
- 2024 (invite) **Cosmic Origins: the first billion years**, Santa Barbara, USA
- 2024 (invite) **Gas, Dust, and Star-Formation in Galaxies from the Local to Far Universe**, Crete, Greece
- 2024 (invite) **The chronology of the very early Universe according to JWST: the first billion years**, Bern, Switzerland
- 2024 (invite) **The growth of galaxies in the Early Universe - IX**, Sesto, Italy
- 2024 (invite) **I2I: Back Again to Linking Galaxy Physics From ISM to IGM Scales**, Sesto, Italy
- 2023 (invite) **Star formation within evolving galaxies: The revolution of upcoming space missions**, Bern, Switzerland
- 2022 (invite) **In Situ View of Galaxy Formation 2**, Ringberg, Germany
- 2022 (invite) **I2I: Linking galaxy physics from ISM to IGM scales**, Sesto, Italy
- 2022 (invite) **The growth of galaxies in the Early Universe - VII**, Sesto, Italy
- 2019 (invite) **Ringberg Workshop**, Ringberg, Germany
- 2019 (invite) **Revolutionary Spectroscopy of Today as Springboard to Webb**, Leiden, Netherlands
- 2019 (invite) **DAWN Summit**, Copenhagen, Denmark
- 2025 **Galaxy origins in the JWST era**, Toledo, Spain
- 2024 **First Starts VII**, New York, USA
- 2023 **Resolving the Extragalactic Universe with ALMA & JWST**, Tokyo, Japan
- 2023 **JWST First Light Conference**, Boston, USA

- 2022 **COSPAR 2022 – Super Massive Black Holes at High Redshift**, *Athens, Greece*
- 2022 **COSMOS Meeting 2022**, *Paris, France*
- 2019 **ALMA 2019: Science Results and Cross-Facility Synergies**, *Cagliari, Italy*
- 2019 **Views on the ISM in galaxies in the ALMA era**, *Bologna, Italy*
- 2019 **Extremely Big Eyes on the Early Universe**, *Roma, Italy*

Colloquia & Seminar talks (Highlights)

- 2025 **U. Illinois Urbana-Champaign**, *Colloquium*, United States
- 2024 **U. Tohoku**, *Colloquium*, Japan
- 2024 **NAOJ**, *Colloquium*, Japan
- 2024 **University College London**, *Colloquium*, United Kingdom
- 2024 **U. Texas A&M**, *Colloquium*, United States
- 2024 **U. Toronto**, *Colloquium*, Canada
- 2024 **U. Cornell**, *Colloquium*, United States
- 2023 **U. Groningen**, *Colloquium*, Netherlands
- 2023 **IPMU**, *Lunch Seminar*, Japan
- 2023 **NAOJ**, *Colloquium*, Japan
- 2023 **U. Tokyo**, *Colloquium*, Japan
- 2023 **U. Hawaii**, *Colloquium & Lunch seminar*, United States
- 2022 **INAF Bologna**, *Lunch seminar*, Italy
- 2022 **FORTH/IA**, *Colloquium*, Greece
- 2022 **UC Barkley**, *Colloquium & Lunch seminar*, United States
- 2021 **U. Cambridge**, *Seminar*, UK
- 2021 **UT Austin**, *Seminar*, United States
- 2021 **UCLA**, *Seminar*, United States
- 2020 **ESO**, *Seminar*, Germany
- 2019 **MPIA**, *Seminar*, Germany
- 2019 **Caltech**, *Seminar*, United States
- 2018 **STScI**, *Seminar*, United States
- 2018 **SNS**, *Seminar*, Italy
- 2018 **LAM**, *Seminar*, France
- 2017 **EAO**, *Seminar*, United States
- 2016 **U. Stockholm**, *Seminar*, Sweden
- 2016 **Geneva Observatory**, *Seminar*, Switzerland