

# Seiji Fujimoto

## Curriculum Vitae

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

## Awarded Telescope Proposals

Principal	<b>N = 50</b>
Investigator	<b>(incl. 7 DDT)</b>
1	<b>JWST</b> , <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	<b>JWST</b> , <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	<b>JWST</b> , <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	<b>JWST DDT</b> , <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	<b>JWST</b> , <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	<b>JWST</b> , <i>GO Cycle 4 6882</i> , 246.2 hrs Vast Exploration for Nascent, Unexplored Sources (VENUS)
5	<b>ALMA DDT</b> , <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 $z \sim 17$ ?
6	<b>ALMA DDT</b> , <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

- 7 **ALMA DDT**, 2021.A.00006.S, 2.8 hrs  
Spectroscopic confirmation of a strongly lensed star at  $z = 6$
- 8 **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
- 9 **ALMA**, 2024.1.1197.S, 9.7 hrs  
First Dynamical and FIR Characterizations of an X-ray luminous AGN host galaxy at  $z > 10$
- 10 **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
- 11 **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
- 12 **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
- 13 **ALMA**, 2022.1.00073.S, 37 hrs  
A joint ALMA and JWST public Legacy Field - Abell 2744
- 14 **ALMA**, 2022.1.00195.S, 27 hrs  
Where does [CII] $\lambda 158\mu\text{m}$  originate? A panchromatic  $\sim 20$ -pc scale view of ISM in a sub- $L^*$  galaxy at  $z = 6$  by ALMA and JWST
- 15 **ALMA**, 2022.1.00433.S, 25 hrs  
Golden Reference for Metallicity Measurements at  $z = 6 - 7$  by ALMA+JWST
- 16 **ALMA**, 2022.1.01567.S, 20 hrs  
Dust in galaxies at  $z = 8 - 11$
- 17 **ALMA**, 2021.1.00055.S, 17 hrs  
Comprehensive ISM view down to a  $\sim 100$  pc scale for a sub- $L^*$  galaxy at  $z = 6$  by ALMA, JWST, and JVLA
- 18 **ALMA**, 2021.1.00236.S, 19 hrs  
Golden Reference for Metallicity Measurements at  $z = 6 - 7$  by ALMA+JWST
- 19 **ALMA**, 2019.2.00050.S, 42 hrs  
ALMA Exploration for a Remarkable Protocluster at  $z = 5.69$
- 20 **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  $z = 6.039$
- 21 **ALMA**, 2019.1.00236.S, 10 hrs  
Strongly Lensed HST-dark Object Discovered by ALMA Lensing Cluster Survey
- 22 **ALMA**, 2017.1.00531.S, 18 hrs  
ALMA Exploration for  $z = 5.69, 6.01$ , and  $6.57$  Protoclusters
- 23 **NASA Keck**, 2022B\_N077, 1 night  
Physical Origin of the High [OIII] $\lambda 88\mu\text{m}$ /[CII] $\lambda 158\mu\text{m}$  Ratios in High- $z$  Star-forming Galaxies Uncovered with JWST+ALMA+Keck
- 24 **NASA Keck**, 2024A\_N025, 1 night  
Physical Origin of the High [OIII] $\lambda 88\mu\text{m}$ /[CII] $\lambda 158\mu\text{m}$  Ratios in High- $z$  Star-forming Galaxies Uncovered with JWST+ALMA+Keck

- 25 **VLT/Xshooter**, *108.22MK*, 26 hrs  
Beasts in the Bubbles: Remarkably UV-bright Galaxies at  $z=9-10$
- 26 **VLT/MUSE**, *109.22VV*, 8.9 hrs  
IFU Trio of JWST, ALMA, and MUSE: Where is  $\text{Ly}\alpha$  escaping?
- 27 **Subaru/SWIMS**, *S22A0094N*, 3 nights  
Weighing the black hole in a young quasar at  $z = 7.2$
- 28 **Subaru/SWIMS**, *S21B0108N*, 2 nights  
Beasts in the Bubbles: Remarkably UV-bright Galaxies at  $z = 9 - 10$
- 29 **Subaru/FOCAS IFU**, *S20A0045N*, 1.5 nights  
Unveiling the Connection between 10-kpc  $\text{Ly}\alpha$  and [CII] Halos at  $z = 6.033$
- 30 **Subaru/FOCAS**, *S20B0150S*, 0.5 night  
Most Massive Black Hole at  $z > 6$  Mimicked by Strong Lensing?
- 31 **Subaru/MOIRCS**, *S16A0033N*, 1.5 nights  
Uncovering the New Class of ALMA Sources Assisted by Gravitational Lensing
- 32 **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  $z \sim 17$ ?
- 33 **NOEMA DDT**, *E19AD*, 4.6 hrs  
Gas and Dust Properties in a Red Quasar Firstly Discovered at  $z > 7$
- 34 **NOEMA**, *E20EO*, 5.0 hrs  
A Vigorously Star-forming Red Quasar Firstly Discovered at  $z > 7$
- 35 **NOEMA**, *E20EN*, 1.5 hrs  
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at  $z=6.57$
- 36 **NOEMA**, *S21DM*, 34 hrs  
Vigorously Turbulent Starburst Core in a Red Quasar Host at  $z=7.2$
- 37 **NOEMA**, *W21EF*, 1.5 hrs  
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at  $z=6.57$
- 38 **NOEMA**, *W21EH*, 27 hrs  
A dive into the vigorously starburst core in a red quasar host at  $z=7.2$
- 39 **NOEMA**, *W23DE*, 9.2 hrs  
Deep [CII] 158um Line Spectroscopy for a Strongly and Multiply Lensed Galaxy at  $z_{\text{spec}} = 10.17$
- 40 **NOEMA**, *W24EU*, 18 hrs  
Unambiguous confirmation of the most distant [CII]158um line emission at  $z_{\text{spec}}=10.17$
- 41 **JVLA DDT**, *20A-520*, 13.2 hrs  
First CO(1-0) Measurements of Strongly Lensed sub- $L^*$  Galaxies at  $z = 6$
- 42 **JVLA**, *21A-145*, 22 hrs  
Total Gas Content in a Vigorous Star-forming Red Quasar Discovered at  $z > 7$
- 43 **JVLA**, *21A-162*, 23.3 hrs  
First CO(1-0) Measurements of Strongly&Multiply Lensed sub- $L^*$  Galaxy at  $z = 6.072$

- 44 **JCMT/SCUBA2, M17BP073**, 3 nights  
Explore Submm Galaxy Nests in Protocluster at  $z \sim 5 - 6$
- 45 **JCMT/SCUBA2, M18AP001**, 4 nights  
Uncovering Obscured Star Formation in the Enormous Ly $\alpha$  Nebulae
- 46 **SMA, 2020B-S051**, 3 nights  
A Vigorously Star-forming Red Quasar Firstly Discovered at  $z > 7$

## Large Projects Involved

- 1 **JWST Large Project, GO Cycle 3 6368**, PI: M. Dickinson, 194 hrs  
The CANDELS-Area Prism Epoch of Reionization Survey (CAPERS)
- 2 **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
- 3 **JWST Large Project, GO Cycle 3 5398**, Pls: J. Kartaltepe & M. Rafelski, 400 hrs  
POPPIES: The Public Observation Pure Parallel Infrared Emission-Line Survey
- 4 **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)
- 5 **JWST Treasury Project, GO Cycle 1 2561**, Pls I. Labbe & R. Bezanson, 83.3 hrs  
Ultra-deep NIRCcam and NIRSpec 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)
- 7 **JWST Treasury Project, GO Cycle 1 1727**, Pls: J. Kartaltepe & C. Casey, 218 hrs  
The JWST Cosmic Origins Survey (COSMOS-Web)
- 8 **JWST ERS Project, Cycle 1 1354**, PI: S. Finkelstein, 65 hrs  
The Cosmic Evolution Early Release Science Survey (CEERS)
- 9 **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
- 10 **ALMA Large Project, 2018.1.00035.L**, PI: K. Kohno, 98 hrs  
ALMA Lensing Cluster Survey (ALCS)
- 11 **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**



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## 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*

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## 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