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 / Universtiy 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] 1. Annual award to the best Japanese astronomer under the age of 35.
[2] 2. Annual award to the best Master Thesis from Prof. T. Kajita (Nobel Prizer in Physics 2015)

Research Grant & Funding (PI)

2026–2030 **NSERC Discovery Grant**, C$207,000

2026–2028 **NASA JWST Cycle5 PI Award**, $333,792, (Admin D. Coe)

2026–2028 **CSA JWST Cycle4 PI Award**, C$433,920

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 (PI)

Principal Investigator **N = 50 (incl. 7 DDT)**

50 **JWST**, *GO Cycle 4 6882*, 246.2 hrs (+49 hrs in Cycle 5)
Vast Exploration for Nascent, Unexplored Sources (VENUS)

49 **JWST**, *GO Cycle 4 6796*, 60.9 hrs
Resolving Multi-phase Outflow/Inflow via Gas Dynamics and Chemical Abundance Distribution in a Sub-L* Dwarf Galaxy at $z = 6.1$

48 **JWST DDT**, *GO Cycle 3 9223*, 38.7 hrs
Let there be Light: Directly Witnessing the Birth of Metal-Free, Pop III Stars in an Ultra-Faint Galaxy at $z = 6.5$

47 **JWST**, *GO Cycle 3 4762*, 15.3 hrs
Panchromatic characterizations of the super-Eddington accretion black hole, host, and environment: Epicenter of red dots, mergers, and dusty starbursts at $z = 7.2$

46 **JWST**, *GO Cycle 2 4573*, 4.5 hrs
IFU Trio of ALMA, MUSE, JWST: Revealing Dynamical Interplay of Inflow/Outflow at $z = 6$ with Strong Lensing Aid

45 **JWST**, *GO Cycle 1 1567*, 12.3 hrs
Early Galaxy Assembly Uncovered with ALMA and JWST: A Remarkably UV and [CII] Bright, Strongly Lensed Sub-$L^\star$ Galaxy at $z = 6.072$

44 **ALMA DDT**, *2021.A.00031.S*, 1.0 hrs
The puzzling JWST object timely disentangled by ALMA: Dusty starburst at $z \sim 5$ or Ultra high-z galaxy at $z \sim 17$?

43 **ALMA DDT**, *2021.A.00022.S*, 4.6 hrs
Establishing the Golden Reference of Early Galaxy Studies at $z \sim 8-9$ with [OIII]4363 detection in JWST ERO

42 **ALMA DDT**, *2021.A.00006.S*, 2.8 hrs
Spectroscopic confirmation of a strongly lensed star at $z = 6$

41 **ALMA**, *2025.1.01249.S*, 11.8 hrs
Dynamical and FIR Characterizations of Extremely Over-massive Dusty AGN System Discovered at z=9.3

40 **ALMA**, *2025.1.00363.S*, 21.3 hrs
Direct mapping of young stars, HII regions, and surrounding PDRs at z=6

39 **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

38 **ALMA**, *2024.1.1197.S*, 9.7 hrs
First Dynamical and FIR Characterizations of an X-ray luminous AGN host galaxy at $z > 10$

37 **ALMA**, *2024.1.01483.S*, 10.1 hrs
Unlocking the Door to Gas Dynamics of ~1–10 pc scale Star Clusters at Cosmic Dawn

36 **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

35 **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

34 **ALMA**, *2022.1.00073.S*, 37 hrs
A joint ALMA and JWST public Legacy Field - Abell 2744

33 **ALMA**, *2022.1.00195.S*, 27 hrs
Where does [CII]158um originate? A panchromatic ~20-pc scale view of ISM in a sub-L* galaxy at $z = 6$ by ALMA and JWST

32 **ALMA**, *2022.1.00433.S*, 25 hrs
Golden Reference for Metallicity Measurements at $z = 6-7$ by ALMA+JWST

31 **ALMA**, *2022.1.01567.S*, 20 hrs
Dust in galaxies at $z = 8-11$

30 **ALMA**, *2021.1.00055.S*, 17 hrs
Comprehensive ISM view down to a ~100 pc scale for a sub-$L^\star$ galaxy at $z = 6$ by ALMA, JWST, and JVLA

29 **ALMA**, *2021.1.00236.S*, 19 hrs
Golden Reference for Metallicity Measurements at $z = 6-7$ by ALMA+JWST

28 **ALMA**, *2019.2.00050.S*, 42 hrs
ALMA Exploration for a Remarkable Protocluster at $z = 5.69$

27 **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 $z = 6.039$

26 **ALMA**, *2019.1.00236.S*, 10 hrs
Strongly Lensed HST-dark Object Discovered by ALMA Lensing Cluster Survey

25 **ALMA**, *2017.1.00531.S*, 18 hrs
ALMA Exploration for $z = 5.69$, 6.01, and 6.57 Protoclusters

24 **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

23 **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

22 **VLT**/**Xshooter**, *108.22MK*, 26 hrs
Beasts in the Bubbles: Remarkably UV-bright Galaxies at z=9-10

21 **VLT**/**MUSE**, *109.22VV*, 8.9 hrs
IFU Trio of JWST, ALMA, and MUSE: Where is Lyα escaping?

20 **Subaru**/**SWIMS**, *S22A0094N*, 3 nights
Weighing the black hole in a young quasar at $z = 7.2$

19 **Subaru**/**SWIMS**, *S21B0108N*, 2 nights
Beasts in the Bubbles: Remarkably UV-bright Galaxies at $z = 9 - 10$

18 **Subaru**/**FOCAS IFU**, *S20A0045N*, 1.5 nights
Unveiling the Connection between 10-kpc Lyα and [CII] Halos at $z = 6.033$

17 **Subaru**/**FOCAS**, *S20B0150S*, 0.5 night
Most Massive Black Hole at $z > 6$ Mimicked by Strong Lensing?

16 **Subaru**/**MOIRCS**, *S16A0033N*, 1.5 nights
Uncovering the New Class of ALMA Sources Assisted by Gravitational Lensing

15 **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 $z \sim 17$?

14 **NOEMA** **DDT**, *E19AD*, 4.6 hrs
Gas and Dust Properties in a Red Quasar Firstly Discovered at $z > 7$

13 **NOEMA**, *E20EO*, 5.0 hrs
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$

12 **NOEMA**, *E20EN*, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdenstiy at z=6.57

11 **NOEMA**, *S21DM*, 34 hrs
Vigorously Turbulent Starburst Core in a Red Quasar Host at z=7.2

10 **NOEMA**, *W21EF*, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdenstiy at z=6.57

9 **NOEMA**, *W21EH*, 27 hrs
A dive into the vigorously starburst core in a red quasar host at z=7.2

8 **NOEMA**, *W23DE*, 9.2 hrs
Deep [CII] 158um Line Spectroscopy for a Strongly and Multiply Lensed Galaxy at zspec = 10.17

7 **NOEMA**, *W24EU*, 18 hrs
Unambiguous confirmation of the most distant [CII]158um line emission at zspec=10.17

6 **JVLA DDT**, *20A-520*, 13.2 hrs
First CO(1-0) Measurements of Strongly Lensed sub-$L^\star$ Galaxies at $z = 6$

5 **JVLA**, *21A-145*, 22 hrs
Total Gas Content in a Vigorous Star-forming Red Quasar Discovered at $z > 7$

4 **JVLA**, *21A-162*, 23.3 hrs
First CO(1-0) Measurements of Strongly&Multiply Lensed sub-$L^\star$ Galaxy at $z = 6.072$

3 **JCMT/SCUBA2**, *M17BP073*, 3 nights
Explore Submm Galaxy Nests in Protocluster at $z \sim 5 - 6$

2 **JCMT/SCUBA2**, *M18AP001*, 4 nights
Uncovering Obscured Star Formation in the Enormous Lyα Nebulae

1 **SMA**, *2020B-S051*, 3 nights
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$

Large Projects (PI & co-I)

13 **JWST Large Project**, *GO Cycle 4 6882*, PIs: S. Fujimoto & D. Coe, 296 hrs
Vast Exploration for Nascent, Unexplored Sources (VENUS)

12 **JWST Large Project**, *GO Cycle 4 7814*, PIs: 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*, PIs: 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*, PIs: J. Kartaltepe & M. Rafelski, 400 hrs
POPPIES: The Public Observation Pure Parallel Infrared Emission-Line Survey

8 **JWST Large Project**, *GO Cycle 2 3293*, PIs H. Atek & J. Chisholm, 147.8 hrs
JWST's GLIMPSE: Gravitational lensing & NIRCam imaging to probe early galaxy formation and sources of reionization (GLIMPSE)

7 **JWST Treasury Project**, *GO Cycle 1 2561*, PIs I. Labbe & R. Bezanson, 83.3 hrs
Ultra-deep NIRCam 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)

5 **JWST Treasury Project**, *GO Cycle 1 1727*, PIs: 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

2025–present **Primary supervisor of Dr. Qinyue Fei (Postdoctoral Fellow at University of Toronto, PhD from Peking University)**

2025–present **Primary supervisor of Dr. Yoshihisa Asada (Dunlap Fellow at University of Toronto, PhD from Kyoto University)**

2026–present **Primary supervisor of Ariel Broderick (Graduate student at University of Toronto)**

2025–present **Primary supervisor of Gavin Farley (Undergraduate student at University of Toronto)**

2024–2025 **Co-supervisor of Akiyoshi Tsujita (PhD student at University of Tokyo)**, *a paper published in ApJ*

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, OJA**

Outreach Experience

2026 **Press Release, "Young Galaxies Grow Up Fast"**, *NRAO, Caltech, ALPINE-CRISTAL-JWST*

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 Earlies 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 (18), Peer-reviewed oral talks (>20), other oral talks (>30)**

2026 (invite) **Early Galaxies and Infant Black Holes Formation and Growth at Cosmic Dawn**, *Roma*, Italy

2026 (invite) **Towards the Full Bloom of First Star, Galaxy, and Black Hole Formation Exploration**, *Tokyo*, Japan

2025 (invite) **Maximizing Science Impact of the European Extremely Large Telescope**, *Ringberg*, Germany

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 Stars 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)

2026 **NRAO**, *Colloquium*, United States

2025 **U. Michigan**, *Colloquium*, United States

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