

Seiji Fujimoto

Curriculum Vitae

Department of Astronomy
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Work Experience

- 2022–present **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 Recipients¹**
- 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 Thesis²**
- 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 Prizer in Physics 2015)

Research Grant & Funding

- 2024–present **NASA JWST Cycle2 PI Data Award**, USD 63,617
- 2023–2024 **NASA Hubble Fellowship Year 2**, USD 134,378
- 2022–2023 **NASA Hubble Fellowship Year 1**, USD 144,517
- 2022–present **NASA JWST Cycle1 PI Data Award**, USD 85,945, (US Admin E. Egami)
- 2022–2024 **NASA Keck PI Data Award**, USD 28,725
- 2021–2022 **INTERACTIONS Fellowship Grant**, USD 123,000
- 2016–2019 **JSPS Research Fellowship Grant**, No.16J02344, USD 92,000
- 2015–2019 **EA ALMA PI Grant for research mobility**, No. NAOJ-ALMA-145, 164, 179, 197, 231, USD 12,000
- 2015–2019 **Yukio Hayakawa Fund for research mobility** , No. 89, 95, 106, USD 92,000
- 2017 **Graduate Research Fund for research mobility awarded by University of Tokyo**, USD 5,000

Awarded Telescope Proposals

Principal Investigator **N = 40**
(incl. 6 DDT)

- 1 **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^* Galaxy at $z = 6.072$
- 2 **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
- 3 **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 $z \sim 17$?
- 4 **ALMA DDT**, *2021.A.00022.S*, 4.6 hrs
Establishing the Golden Reference of Early Galaxy Studies at $z \sim 8 - 9$ with [OIII] $\lambda 4363$ detection in JWST ERO
- 5 **ALMA DDT**, *2021.A.00006.S*, 2.8 hrs
Spectroscopic confirmation of a strongly lensed star at $z = 6$
- 6 **ALMA**, *2023.1.00149.S*, 16.7 hrs
IFU Trio of ALMA, MUSE, JWST: Revealing Dynamical Interplay of Inflow/Outflow at $z = 6$ with Strong Lensing Aid
- 7 **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
- 8 **ALMA**, *2022.1.00073.S*, 37 hrs
A joint ALMA and JWST public Legacy Field - Abell 2744
- 9 **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

- 10 **ALMA**, *2022.1.00433.S*, 25 hrs
Golden Reference for Metallicity Measurements at $z = 6 - 7$ by ALMA+JWST
- 11 **ALMA**, *2022.1.01567.S*, 20 hrs
Dust in galaxies at $z = 8 - 11$
- 12 **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 JVL
- 13 **ALMA**, *2021.1.00236.S*, 19 hrs
Golden Reference for Metallicity Measurements at $z = 6 - 7$ by ALMA+JWST
- 14 **ALMA**, *2019.2.00050.S*, 42 hrs
ALMA Exploration for a Remarkable Protocluster at $z = 5.69$
- 15 **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 $z = 6.039$
- 16 **ALMA**, *2019.1.00236.S*, 10 hrs
Strongly Lensed HST-dark Object Discovered by ALMA Lensing Cluster Survey
- 17 **ALMA**, *2017.1.00531.S*, 18 hrs
ALMA Exploration for $z = 5.69, 6.01, \text{ and } 6.57$ Protoclusters
- 18 **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
- 19 **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
- 20 **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 $\text{Ly}\alpha$ escaping?
- 22 **Subaru/SWIMS**, *S22A0094N*, 3 nights
Weighing the black hole in a young quasar at $z = 7.2$
- 23 **Subaru/SWIMS**, *S21B0108N*, 2 nights
Beasts in the Bubbles: Remarkably UV-bright Galaxies at $z = 9 - 10$
- 24 **Subaru/FOCAS IFU**, *S20A0045N*, 1.5 nights
Unveiling the Connection between 10-kpc $\text{Ly}\alpha$ and [CII] Halos at $z = 6.033$
- 25 **Subaru/FOCAS**, *S20B0150S*, 0.5 night
Most Massive Black Hole at $z > 6$ Mimicked by Strong Lensing?
- 26 **Subaru/MOIRCS**, *S16A0033N*, 1.5 nights
Uncovering the New Class of ALMA Sources Assisted by Gravitational Lensing
- 27 **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 $z \sim 17$?
- 28 **NOEMA DDT**, *E19AD*, 4.6 hrs
Gas and Dust Properties in a Red Quasar Firstly Discovered at $z > 7$

- 29 **NOEMA**, *E20EO*, 5.0 hrs
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$
- 30 **NOEMA**, *E20EN*, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at $z=6.57$
- 31 **NOEMA**, *S21DM*, 34 hrs
Vigorously Turbulent Starburst Core in a Red Quasar Host at $z=7.2$
- 32 **NOEMA**, *W21EF*, 1.5 hrs
Confirming the Most Massive Submm Galaxy at the Node of Remarkable Galaxy Overdensity at $z=6.57$
- 33 **NOEMA**, *W21EH*, 27 hrs
A dive into the vigorously starburst core in a red quasar host at $z=7.2$
- 34 **NOEMA**, *W23DE*, 9.2 hrs
Deep [CII] 158 μ m Line Spectroscopy for a Strongly and Multiply Lensed Galaxy at $z_{\text{spec}} = 10.17$
- 35 **JVLA DDT**, *20A-520*, 13.2 hrs
First CO(1-0) Measurements of Strongly Lensed sub- L^* Galaxies at $z = 6$
- 36 **JVLA**, *21A-145*, 22 hrs
Total Gas Content in a Vigorous Star-forming Red Quasar Discovered at $z > 7$
- 37 **JVLA**, *21A-162*, 23.3 hrs
First CO(1-0) Measurements of Strongly&Multiply Lensed sub- L^* Galaxy at $z = 6.072$
- 38 **JCMT/SCUBA2**, *M17BP073*, 3 nights
Explore Submm Galaxy Nests in Protocluster at $z \sim 5 - 6$
- 39 **JCMT/SCUBA2**, *M18AP001*, 4 nights
Uncovering Obscured Star Formation in the Enormous Ly α Nebulae
- 40 **SMA**, *2020B-S051*, 3 nights
A Vigorously Star-forming Red Quasar Firstly Discovered at $z > 7$

Co-Investigator **(Highlights, in the last few years)**

- 1 **JWST**, *GO Cycle 2 4246*, PI: A. Abdurro'uf, 16.1 hrs
Physical Properties of a Possible Galaxy Merger at $z = 10.2$
- 2 **JWST**, *GO Cycle 2 4212*, PI: L. Bradley, 10.1 hrs
Unveiling the Most Distant Lensed Arc at $z \sim 10$
- 3 **JWST**, *GO Cycle 2 3859*, PI: M. Onoue, 10.9 hrs
Full Characterization of Starlight from a $z = 6.4$ Quasar Host Galaxy
- 4 **JWST**, *GO Cycle 2 3567*, PI: F. Valentino, 47.1 hrs
A deep dive into the physics of the first massive quiescent galaxies in the Universe
- 5 **JWST**, *GO Cycle 2 3045*, PI: A. Faisst, 59.6 hrs
Witnessing the Maturing of Teenage Galaxies at $z = 4-6$ with a Comprehensive UV - Optical - Sub-mm Benchmark Sample for the Community
- 6 **JWST**, *GO Cycle 2 2883*, PI: F. Sun, 38.7 hrs
MAGNIF: Medium-band Astrophysics with the Grism of NIRC*am* in Frontier Fields
- 7 **JWST**, *GO Cycle 1 2659*, PI: J. Weaver, 13.6 hrs
Beasts in the Bubbles: Characterizing ultra-luminous Galaxies at Cosmic Dawn

- 8 **JWST**, *GO Cycle 1 1967*, PI: M. Onoue, 52 hrs
A Complete Census of Supermassive Black Holes and Host Galaxies at $z = 6$
- 9 **Keck/MOSFIRE**, *NASA S21B #20*, PI: C. Casey, 2 nights
Beasts in the Bubbles: Remarkably UV-bright Galaxies at $z = 9 - 10$
- 10 **Keck/MOSFIRE**, *UC S22A #U190*, PI: B. Mobascher, 2 nights
Remarkably UV-bright Galaxies at $z = 9 - 10$
- 11 **Keck/DEIMOS, MOSFIRE, UH S22A #H250**, PI: D. Sanders, 3 nights
Remarkable galaxy overdensity at $z = 6$ and $z = 8$
- 12 **Keck/MOSFIRE**, *NASA S22A #48*, PI: C. Casey, 2 nights
A young transitionary $z = 7.2$ quasar formed < 1 Gyr after the Big Bang
- 13 **HST**, *17281*, PI: G. Leung, 5 orbits
Revealing the Nature of Five Potential Bright Galaxies at $z > 10$
- 14 **ALMA**, *2021.1.00225.S*, PI: C. Casey, 36.2 hrs
Mapping Obscuration to Reionization: A blank field 2mm survey in COSMOS
- 15 **ALMA**, *2021.1.00018.S*, PI: R. Ivison, 30.6 hrs
Exploiting a snapshot survey of the 3,083 reddest Herschel sources to reveal distant protoclusters
- 16 **ALMA**, *2021.1.00181.S*, PI: F. Valentino, 19.4 hrs
Molecular gas and obscured SFR in a typical sub- L^* galaxy at $z=6$
- 17 **ALMA**, *2021.1.00211.S*, PI: R. Maiolino, 20.2 hrs
The ultimate test for quasar feedback in the early Universe: ultra-deep observations of the most luminous quasar at $z > 6$
- 18 **ALMA**, *2021.1.00443.S*, PI: J. Spilker, 21.2 hrs
Surveying cold quasar outflows at the highest redshifts
- 19 **ALMA**, *2021.1.00389.S*, PI: T. Hashimoto, 17.8 hrs
Deep [OIII] 88 μ m and dust continuum observations of two remarkably luminous galaxies at $z \sim 10$
- 20 **ALMA**, *2021.1.01320.S*, PI: J. Silverman, 26.2 hrs
Opening an Era of CGM-scale Study of the Most Massive Halos at $z > 6$ with ALMA
- 21 **ALMA**, *2021.1.00075.S*, PI: Y. Ono, 8.8 hrs
CO spectroscopy for an L^* Lyman break galaxy at $z=8.3118$
- 22 **ALMA**, *2021.1.00668.S*, PI: T. Bakx, 38.3 hrs
Answers at $z > 6$: OIII-to-CII ratio census in SFR-selected sample
- 23 **ALMA**, *2021.1.01262.S*, PI: T. Izumi, 18.3 hrs
High-resolution characterization of early bulge structure and feedback in a $z=7.07$ low-luminosity quasar
- 24 **ALMA**, *2021.1.01246.S*, PI: K. Kohno, 14.1 hrs
Spectroscopic identification of candidate overdensity regions of H-dropout ALMA galaxies behind two lensing clusters
- 25 **ALMA**, *2021.1.00407.S*, PI: F. Bauer, 8.6 hrs
Lifting the shroud on two IRAC-dark dusty star-forming galaxies
- 26 **ALMA**, *2021.1.00668.S*, PI: T. Bakx, 15.3 hrs
Molecular gas and outflows: OH119 μ m absorption line at $z=7.13$

- 27 **ALMA**, *2022.1.01139.S*, PI: E. Egami, 21.5 hrs
[C II] Scan Survey of the Most UV-Luminous Galaxies at $z \sim 7$
- 28 **ALMA**, *2022.1.01356.S*, PI: E. Egami, 35.1 hrs
A Quest toward the Faint End of the Infrared Luminosity Function at $z > 4$
- 29 **ALMA**, *2022.1.00230.S*, PI: Y. Fudamoto, 13.2 hrs
How hot are high-redshift galaxies?: constraining dust temperature at $z \sim 5$
- 30 **ALMA**, *2022.1.00055.S*, PI: Y. Harikane, 47.2 hrs
SERENADE: Systematic Exploration at Reionization Epoch Nebula And Dust Emission
- 31 **ALMA**, *2022.1.00257.S*, PI: T. Hashimoto, 16.9 hrs
Deep [O III] 88 μm and dust continuum observations of two remarkably luminous galaxies at $z \sim 10$
- 32 **NOEMA**, *W20EQ*, PI: F. Valentino, 25 hrs
The redshift confirmation of a bright $z=9.8$ galaxy
- 33 **NOEMA**, *S21DN*, PI: F. Valentino, 27 hrs
The redshift confirmation of a bright $z=9.8$ galaxy

Large Projects Involved

- 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)
- 2 **ALMA Large Project**, *2018.1.00035.L*, PI: K. Kohno, 98 hrs
ALMA Lensing Cluster Survey (ALCS)
- 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
- 4 **JWST ERS Project**, *Cycle 1 1354*, PI: S. Finkelstein, 65 hrs
The Cosmic Evolution Early Release Science Survey (CEERS)
- 5 **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)
- 6 **JWST Treasury Project**, *GO Cycle 1 1727*, PIs: J. Kartaltepe & C. Casey, 218 hrs
The JWST Cosmic Origins Survey (COSMOS-Web)
- 7 **JWST Treasury Project**, *GO Cycle 1 2561*, PIs I. Labbe & R. Bezanson, 83.3 hrs
Ultra-deep NIRCcam and NIRSpec Observations Before the Epoch of Reionization (UNCOVER)
- 8 **JWST Large Project**, *GO Cycle 2 3293*, PIs H. Atek & J. Chisholm, 147.8 hrs
JWST's GLIMPSE: Gravitational lensing & NIRCcam imaging to probe early galaxy formation and sources of reionization (GLIMPSE)

Supervising & Teaching

2023–present **Co-supervisor of Clara Giménez-Arteaga (PhD student at DAWN), [a paper submitted](#)**

- 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

- 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 (Highlights)

- Summary **Invited (13), Peer-reviewed oral talks (>20), other oral talks (>30)**
- 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*
- 2018 (invite) **Chili-Japan Academic Forum**, *Nikko, Japan*
- 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*
- 2017 **Twenty years of Submillimeter Galaxies**, *Durham, England*
- 2016 **The 6th Subaru International Conference**, *Hiroshima, Japan*

Colloquia & Seminar talks (Highlights)

- 2023 **IPMU Lunch Seminar**, *Chiba, Japan*
- 2023 **NAOJ Colloquium**, *Tokyo, Japan*
- 2023 **University of Tokyo, Colloquium**, *Tokyo, Japan*
- 2022 **INAF Bologna lunch seminar**, *Bologna, Italy*
- 2022 **FORTH/IA Seminar**, *Crete, Greece*
- 2021 **Galaxy Evolution Seminar**, *Cambridge, UK*
- 2021 **Exgal-Cosmology series**, *UT Austin, United States*
- 2021 **Special Seminar**, *UCLA, United States*
- 2020 **Lunch Seminar**, *ESO, Germany*
- 2019 **Special Visitor Seminar**, *MPIA, Germany*

- 2019 **Wednesday Colloquium**, *Caltech*, United States
- 2018 **Galaxy Seminar**, *STScI*, United States
- 2018 **Special Visitor Seminar**, *SNS*, Italy
- 2018 **Special Visitor Seminar**, *LAM*, France
- 2017 **Lunch Seminar**, *EAO*, United States
- 2016 **Special Visitor Seminar**, *University of Stockholm*, Sweden
- 2016 **Lunch Seminar**, *Geneva Observatory*, Switzerland