CV of Takahiro UEDA
last updated in August 2025

Curriculum Vitae of Takahiro UEDA

Research Experience

2024.02 – Present	JSPS Overseas Fellow	Center for Astrophysics | Harvard & Smithsonian
2022.04 – 2024.01	Postdoctoral Researcher	Max Planck Institute for Astronomy
2019.04 – 2022.03	JSPS Research Fellow (PD)	National Astronomical Observatory of Japan
2018.04 – 2019.03	JSPS Research Fellow (DC2)	Tokyo Institute of Technology

Education

2016.04 – 2019.03	Doctor of Science	Tokyo Institute of Technology
2018.05 – 2018.10	JSPS Overseas Challenge Program for Young Researchers	Max Planck Institute for Astronomy
2014.04 – 2016.03	Master of Science	Tokyo Institute of Technology
2009.04 – 2014.03	Bachelor of Science	Tokyo Institute of Technology

Teaching Experience

2019.10 – Present	Adjunct Lecturer	Earth and Space Sciences, Institute of Science Tokyo
2016	Teaching Assistant	Computational Planetary Science, Tokyo Institute of Technology
2015	Teaching Assistant	Physical Mathematics (EPS course), Tokyo Institute of Technology
2014	Teaching Assistant	Mechanics (EPS course), Tokyo Institute of Technology
2014	Teaching Assistant	Quantum Mechanics (EPS course), Tokyo Institute of Technology

Researcher IDs

ORC ID	0000-0003-4902-222X
Reserchmap ID	R000039720

Languages

Native	Japanese
Fluent	English
Basic	German

Awarded Grants

2024.02 – 2026.01	JSPS Overseas Research Fellowships	15,000,000 JPY
2021.09 – 2021.10	NAOJ Overseas Visit Program for Young Researchers	730,000 JPY
2019.04 – 2022.03	JSPS Research Grant	3,500,000 JPY
2018.05 – 2018.10	JSPS Overseas Challenge Program for Young Researchers	1,400,000 JPY
2018.04 – 2020.03	JSPS Research Grant	2,100,000 JPY

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Publications

Refereed papers: 13 lead-author (corresponding author) papers and 11 co-author papers

Astrophysics Data System (ADS), Google Scholar

International journals

[1] Multi dust species inner rim in magnetized protoplanetary disks
Mario Flock, Ondřej Chrenko, Takahiro Ueda, Myriam Benisty, Jozsef Varga, Roy van Boekel
Accepted for publication in Astronomy and Astrophysics

[2] Multi-Wavelength Dust Characterization of the HL Tau Disk and Implications for Planet Formation
Takahiro Ueda, Sean M. Andrews, Carlos Carrasco-Gonzalez, Osmar M. Guerra-Alvarado, Satoshi Okuzumi, Ryo Tazaki, Akimasa Kataoka
Accepted for publication in The Astrophysical Journal

[3] SMA and NOEMA Reveal Asymmetric Sub-structure in the Protoplanetary Disk of IRAS 23077+6707
Joshua B. Lovell, Leon Trapman, Kristina Monsch, Sean M. Andrews, Alice S. Booth, Garrett K. Keating, Takahiro Ueda, David J. Wilner
Accepted for publication in The Astrophysical Journal

[4] Thermally driven spontaneous dust accumulation in the inner regions of protoplanetary disks
Ryo Kato, Takahiro Ueda and Satoshi Okuzumi
Accepted for publication in Publications of the Astronomical Society of Japan

[5] Support for Fragile Porous Dust in Gravitationally Self-Regulated Disk around IM Lup
Takahiro Ueda, Ryo Tazaki, Satoshi Okuzumi, Mario Flock and Prakruti Sudarshan
Nature Astronomy, 2024, 8, 1148

[6] The inner disk rim of HD 163296: linking radiative hydrostatic models with infrared interferometry
Ondřej Chrenko, Mario Flock, Takahiro Ueda, Antoine Mérand, Myriam Benisty and Raúl O. Chametla
The Astronomical Journal, 2024, 167, 124

[7] Dust enrichment and grain growth in a smooth disk around the DG Tau protostar revealed by ALMA triple bands frequency observations
Satoshi Ohashi, Munetake Momose, Akimasa Kataoka, Aya E. Higuchi, Takashi Tsukagoshi, Takahiro Ueda, Claudio Codella, Linda Podio, Tomoyuki Hanawa, Nami Sakai, Hiroshi Kobayashi, Satoshi Okuzumi and Hidekazu Tanaka
The Astrophysical Journal, 2023, 954, 110

[8] Porous Dust Particles in Protoplanetary Disks: Application to the HL Tau Disk
Shangjia Zhang, Zhaohuan Zhu, Takahiro Ueda, Akimasa Kataoka, Anibal Sierra, Carlos Carrasco-Gonzalez and Enrique Macias
The Astrophysical Journal, 2023, 953, 96

[9] Probing the Temperature Structure of the Inner Region of a Protoplanetary Disk
Takahiro Ueda, Satoshi Okuzumi, Akimasa Kataoka and Mario Flock
Astronomy and Astrophysics, 2023, 675, A176

[10] Discovery of Line Pressure Broadening and Direct Constraint on Gas Surface Density in a Protoplanetary Disk
Tomohiro C. Yoshida, Hideko Nomura, Takashi Tsukagoshi, Kenji Furuya and Takahiro Ueda
The Astrophysical Journal Letters, 2022, 937, L14

[11] The Molecular Composition of Shadowed Protoplanetary Disk Midplanes beyond the Water Snowline
Shota Notsu, Kazumasa Ohno, Takahiro Ueda, Catherine Walsh, Christian Eistrup and Hideko Nomura
The Astrophysical Journal, 2022, 936, 188

[12] A global two-layer radiative transfer model for axisymmetric shadowed protoplanetary disks
Satoshi Okuzumi, Takahiro Ueda and Neal J. Turner
Publications of the Astronomical Society of Japan, 2022, 74, 828

[13] Massive compact dust disk with a gap around CW Tau revealed by ALMA multiband observations
Takahiro Ueda, Akimasa Kataoka and Takashi Tsukagoshi

The Astrophysical Journal, 2022, 930, 56

[14] Probing Inner-Edge of Dead Zones in Protoplanetary Disks with ALMA and Next Generation Very Large Array
Takahiro Ueda, Luca Ricci, Mario Flock and Zachary Castro
The Astrophysical Journal, 2022, 928, 110

[15] Early Initiation of Inner Solar System Formation at Dead-Zone Inner Edge
Takahiro Ueda, Masahiro Ogihara, Eiichiro Kokubo and Satoshi Okuzumi
The Astrophysical Journal Letters, 2021, 921, L5

[16] Jupiter's "Cold" Formation in the Protosolar Disk Shadow: An Explanation for the Planet's Uniformly Enriched Atmosphere
Kazumasa Ohno and Takahiro Ueda
The Astronomy and Astrophysics Letters, 2021, 651, L2

[17] Thermal Wave Instability as an Origin of Gap and Ring Structures in Protoplanetary Disks
Takahiro Ueda, Mario Flock and Tilman Birnstiel
The Astrophysical Journal Letters, 2021, 914, L38

[18] Impact of Differential Dust Settling on the SED and Polarization: Application to the Inner Region of the HL Tau Disk
Takahiro Ueda, Akimasa Kataoka, Shangjia Zhang, Zhaohuan Zhu, Carlos Carrasco-Gonzalez and Anibal Sierra
The Astrophysical Journal, 2021, 913, 117

[19] Scattering-induced intensity reduction: large mass content with small grains in the inner region of the TW Hya disk
Takahiro Ueda, Akimasa Kataoka and Takashi Tsukagoshi
The Astrophysical Journal, 2020, 893, 125

[20] Dust-Pileup at the Dead-Zone Inner Edge and Implications for the Disk Shadow
Takahiro Ueda, Mario Flock, and Satoshi Okuzumi
The Astrophysical Journal, 2019, 871, 10

[21] Effect of Dust Radial Drift on Viscous Evolution of Gaseous Disk
Kazuhiro D. Kanagawa, Takahiro Ueda, Takayuki Muto, and Satoshi Okuzumi
The Astrophysical Journal, 2017, 844, 142

[22] Analytic Expressions for the Inner-Rim Structure of Passively Heated Protoplanetary Disks
Takahiro Ueda, Satoshi Okuzumi, and Mario Flock
The Astrophysical Journal, 2017, 843, 49

[23] Size Dependence of Dust Distribution around the Earth Orbit
Takahiro Ueda, Hiroshi Kobayashi, Taku Takeuchi, Daisuke Ishihara, Toru Kondo, and Hidehiro Kaneda
The Astronomical Journal, 2017, 153, 232

Japanese journals

[1] 円盤ミリ波観測から制約する惑星形成論 (Planet formation theories constrained from millimeter disk observations)
植田 高啓 (Takahiro Ueda)
招待総説，日本惑星科学会「遊・星・人」，第 31 巻，第 1 号
Invited review article for publication in Planetary People published by the Japanese Society for Planetary Sciences

Non-refereed papers

[1] A Collection of German Science Interests in the Next Generation Very Large Array
Matthias Kadler et al including Takahiro Ueda 2023
Corresponding author in Chapter 2.40-2.42 and co-author in Chapter 2.5 and 2.17

[2] Grain Growth Probed by ngVLA Polarimetric Observations
Takahiro Ueda, Satoshi Ohashi and Akimasa Kataoka 2021
ngVLA-J memo series, Chapter: Unveiling the Formation of Solar System Analogues on Terrestrial Scales, Article ID: 5

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Accepted observing proposals

[1] Unveiling temperature: a comprehensive 2D view on the HD 163296 disk thermal structure
Anna Fehr et al. including Takahiro Ueda, ALMA Cycle 12, Grade C, 23.5 hrs

[2] Resolving Sharp CO Snowline Transitions in T Tauri Disks: A Case Study with TW Hya
Chunhua Qi et al. including Takahiro Ueda, ALMA Cycle 12, Grade C, 13.7 hrs

[3] ALMA Microwave Spectrum Survey of Taurus Disks
Sean Andrews et al. including Takahiro Ueda, ALMA Cycle 12, Grade A, 20.2 hrs

[4] The First High-Resolution High-Frequency Survey to Reveal Dust Properties of Protoplanetary Disks
Kiyoaki Doi et al. including Takahiro Ueda, ALMA Cycle 12, Grade C, 16.3 hrs

[5] Time evolution of dust disks probed by centimeter wavelengths
Takahiro Ueda et al. VLA, 2025A, Priority B, 61.9 hrs

[6] A Centimeter-band Continuum Survey of Taurus Protoplanetary Disks
Sean Andrews et al. including Takahiro Ueda, VLA, 2025A, Priority B, 180 hrs

[7] Deep into the gravitationally unstable disks
Takahiro Ueda, Sean Andrews and Kiyoaki Doi, ALMA Cycle 11, Grade C, 11.6 hrs

[8] Testing the vortex hypothesis in a protoplanetary disk (Resubmission)
Xiaoyi Ma et al. including Takahiro Ueda, ALMA Cycle 11, Grade B, 16.8 hrs

[9] Improved Empirical Measurements of Disk Temperature Structures
Anna Fehr et al. including Takahiro Ueda, ALMA Cycle 11, Grade C, 16.6 hrs

[10] The Highest Resolution Band 1 Observations of HD 163296 to Characterize the Dust Properties in the Whole Disk
Kiyoaki Doi et al. including Takahiro Ueda, ALMA Cycle 11, Grade C, 14.7 hrs

[11] Revealing the magnetic field structure in the inner 30 au region of the DG Tau disk
Satoshi Ohashi et al. including Takahiro Ueda, ALMA Cycle 11, Grade C, 18.4 hrs

[12] Dust Accumulation Outside the Planets of PDS 70 Revealed by High-Resolution Band 1 Observations
Kiyoaki Doi et al. including Takahiro Ueda, ALMA Cycle 11, Grade B, 27.5 hrs

[13] Testing the vortex hypothesis in a protoplanetary disk
Xiaoyi Ma et al. including Takahiro Ueda, VLA, 2024B, Priority B, 28.3 hrs

[14] Testing the vortex hypothesis in a protoplanetary disk
Ruobing Dong, Akimasa Kataoka and Takahiro Ueda, ALMA Cycle 9, Grade B, 21.9 hrs

[15] Does scattering reduce the apparent dust mass in protoplanetary disks?
Takahiro Ueda, Akimasa Kataoka and Takashi Tsukagoshi, ALMA Cycle 7, Grade B, 4.5 hrs

Articles

[1] 「キャリア教育に活きる！仕事ファイル 30」、株式会社小峰書店
中学生向け教育教材にて、天文学者としてインタビュー記事を掲載
(interview as an astronomer in Japanese textbook for junior high school students)

Presentations in International Conferences

No.	Title	Conference	Oral/Poster	Time/Location
27	Multiwavelength characterization of dust particles in the HL Tau disk	NA-TW Joint ALMA Workshop	Oral	June 2025 Taiwan
26	Planet Formation within the Inner Regions of Thermally Evolving Disks	Planets on the Edge	Invited talk	May 2025 USA
25	Characterization of Protoplanetary Dust by Radio Observations	Pebbles in Planet Formation	Invited review talk	February 2025 Japan
24	Multi-wavelength characterization of protoplanetary dust with ngVLA	Follow the Monarchs: A Journey to Explore the Cosmos at (Sub)milliarcsecond Scales with the ngVLA	Oral	November 2024 Mexico
23	Probing the Formation of Rocky Planets with ngVLA	German Science Opportunities for the ngVLA	Invited talk	September 2023 Germany
22	Probing the Planet Formation at the Innermost Region of Disks	Protostars and Planets VII	Poster	April 2023 Japan
21	Modeling the inner dusty disks	GRAVITY YSO Meeting	Invited talk	November 2022 Virtual
20	The structure of the inner region of protoplanetary disks	Inside 2022 The Inner Regions of Protoplanetary Disks	Invited review talk	September 2022 Germany
19	Compact massive dust disk with a gap around CW Tau revealed by ALMA multi-band observation	East Asian ALMA Science Workshop 2022	Oral	January 2022 Virtual
18	Impact of the differential settling of dust grains on the SED and polarimetric observations on the inner region of the HL Tau disk	East Asian ALMA Science Workshop 2021	Oral	February 2021 Virtual
17	Scattering-Induced Intensity Reduction: Large Mass Content with Small Grains in the Inner Region of the TW Hya Disk	Building Blocks of Planets 2020	Invited talk	April 2020 Virtual
16	Scattering-Induced Optical Depth Reduction: Application to the Inner Region of the TW Hya Disk	East-Asian ALMA Science Workshop 2020	Oral	February 2020 Taiwan
15	Scattering-Induced Intensity Reduction: Large Mass Content with Small Grains in the Inner Region of the TW Hya Disk	Planet Formation Workshop	Poster	November 2019 Japan
14	Formation of Building Blocks of the Terrestrial Planets at the Dead-zone Inner Edge	Planet2/RESCEU Symposium 2019	Oral	October 2019 Japan
13	Effect of Scattering on the Apparent Disk Brightness: Application to the Inner Region of the TW Hya Disk	next generation VLA Workshop	Oral	September 2019 Japan
12	Planetesimal Formation at the inner edge of the dead-zone: Implication for the diversity in the planetary systems	Extreme Solar Systems IV	Poster	August 2019 Iceland
11	Rocky Planetesimal Formation at the inner edge of the dead-zone: Implication for the inner solar system formation	Turbulence and Structure Formation in Protoplanetary Disks	Invited talk	July 2019 Germany
10	Inner Solar System Formation via the Dust-Pileup at the Dead-Zone Inner Edge	Gordon Research Conference	Poster	June 2019 USA
9	Dust-pileup at the Dead-zone Inner	Take a Closer Look	Poster	October 2018

	Edge and Implications for the Disk Shadow			Germany
8	Dust-pileup at the Dead-zone Inner Boundary and Its Effect on the Disk Structures	Japanese-German Meeting on Exoplanets and Planet Formation	Oral	August 2018 Germany
7	Planetesimal Formation at the Dead-zone Inner Boundary and Its Observational Signatures	Origins: From the Protosun to the First Steps of Life, IAU General Assembly	Poster	August 2018 Austria
6	Planetesimal Formation at the Dead-zone Inner Boundary and Its Observational Signatures	From Prestellar Cores to Solar Nebulae	Oral	May 2018 France
5	Analytic Solutions for the Inner-Rim Structure of Passively Heated Protoplanetary Disks	Japan-Germany Planet & Disk workshop	Poster	September 2016 Japan
4	Physical Properties of Zodiacal Dust Estimated from AKARI Observations and Orbital Calculations	The 9th meeting on Cosmic Dust	Poster	August 2016 Japan
3	The Size Dependence of the Dust Distribution around the Earth Orbit	JpGU International Symposium	Oral	May 2016 Japan
2	The Origin and Physical Properties of Interplanetary Dust Particles Estimated from AKARI Observations	International Workshop on Exoplanets and Disks	Poster	February 2016 Japan
1	Migration of a Giant Planet Induced by Eccentricity Damping and Gravitational Turbulence	German-Japanese-Meeting 2014 Disks & Exoplanets	Poster	November 2014 Germany

Presentations in Japanese Conferences

No.	タイトル	会議名	発表形態	時期・場所
27	IM Lup 円盤の近赤外線・ミリ波観測に基づく包括的な重力不安定円盤モデル	日本天文学会 2024 年春季年会	口頭	2024 年 3 月 オンライン
26	ALMA 多波長観測で探る CW Tau 円盤内側領域の赤道面温度	日本天文学会 2023 年春季年会	口頭	2023 年 3 月 オンライン
25	ALMA 多波長観測で探る 原始惑星系円盤の赤道面加熱	新学術領域「星・惑星形成」2022 年度大研究会	ポスター	2023 年 2 月 オンライン
24	Class II 円盤は本当に軽いか？ CW Tau 円盤の詳細解析とその示唆	惑星形成討論会	口頭	2022 年 3 月 オンライン
23	ALMA 多波長観測で明らかにした CW Tau 周りの大質量コンパクト円盤	日本天文学会 2022 年春季年会	口頭	2022 年 3 月 オンライン
22	熱波不安定性による原始惑星系円盤のミリ波リング・ギャップ形成	日本天文学会 2021 年秋季年会	口頭	2021 年 9 月 オンライン
21	ngVLA の偏光観測で探る原始惑星系円盤中のダスト成長	日本天文学会 2021 年春季年会	ポスター	2021 年 3 月 オンライン
20	HL Tau 円盤の SED および偏光観測が示唆する円盤内側領域の極弱乱流	惑星系形成若手研究会	口頭	2021 年 2 月 オンライン
19	デッドゾーン内側境界での微惑星形成: 太陽系地球型惑星形成への示唆	2020 年日本惑星科学会秋季講演会	口頭	2020 年 11 月 オンライン
18	デッドゾーン内側境界での局所的微惑星形成：太陽系地球型惑星形成への示唆	新学術星惑星形成 2020 年度大研究会	口頭	2020 年 10 月 オンライン
17	ミリ波散乱減光が原始惑星系円盤の質量推定に与える影響	日本天文学会 2020 年秋季年会	口頭	2020 年 9 月 オンライン
16	原始惑星系円盤質量推定における sub-cm 波の有用性	ngVLA sub-working group meeting	口頭	2020 年 5 月 オンライン
15	ミリ波散乱減光の原始惑星系円盤ダスト質量推定への影響	理論懇シンポジウム	口頭	2019 年 12 月 東京
14	デッドゾーン内側境界における岩石質ダストの濃集	日本天文学会 2018 年春季年会	口頭	2018 年 3 月 千葉
13	原始惑星系円盤内縁のダスト濃集領域が作り出す円盤表層の影構造	日本天文学会 2018 年春季年会	ポスター	2018 年 3 月 千葉
12	デッドゾーン内縁における岩石ダストの濃集不安定性	2017 年日本惑星科学会秋季講演会	口頭	2017 年 9 月 大阪
11	原始惑星系円盤内縁構造とデッドゾーン内側境界におけるダスト濃集	基研研究会 原始惑星系円盤	口頭	2017 年 7 月 京都
10	ダストからの摩擦反作用を考慮した原始惑星系円盤のガス・ダスト共進化	JpGU-AGU Joint Meeting 2017	口頭	2017 年 5 月 千葉
9	デッドゾーン内側境界周辺における円盤構造とダストの濃集	日本天文学会 2017 年春季年会	ポスター	2017 年 3 月 福岡
8	原始惑星系円盤内縁領域の温度構造の解析解	日本惑星科学会 2016 年度秋季講演会	ポスター	2016 年 9 月 岡山

7	惑星間塵における小惑星・彗星起源ダストの存在比	日本天文学会 2016 年春季年会	口頭	2016 年 3 月 東京
6	黄道光の非対称性から推定する惑星間塵のサイズとその起源	サイズ分布ビッグピクチャー研究会	口頭	2016 年 2 月 東京
5	黄道光分布から読み取る小惑星の衝突破壊で生じるダストの典型的サイズ	日本惑星科学会 2015 年度秋季講演会	口頭	2015 年 10 月 東京
4	黄道光の空間非軸対称性から推定するダストサイズ分布	日本天文学会 2015 年秋季年会	口頭	2015 年 9 月 兵庫
3	離心率の減少にともなう巨大ガス惑星の軌道進化	日本地球惑星科学連合 2015 年大会	口頭	2015 年 5 月 東京
2	自己重力不安定な円盤における巨大ガス惑星の軌道進化	日本天文学会 2014 年秋季年会	口頭	2014 年 9 月 山形
1	自己重力不安定な円盤における巨大ガス惑星の軌道進化	日本惑星科学会 2014 年度秋季講演会	口頭	2014 年 9 月 仙台