Feng Long

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Employment

University of Arizona **Tucson, USA**
NASA Hubble Fellowship Program Sagan Fellow *Sept. 2022 - Present*

Center for Astrophysics | Harvard & Smithsonian **Cambridge, USA**
Submillimeter Array (SMA) Fellow *Sept. 2019 - Aug. 2022*

Education

Peking University **Beijing, China**
Ph.D, Astrophysics *2013 - 2019*

Advisor - Prof. Gregory J. Herczeg

Thesis - Probing the Early Stage of Planet Formation: ALMA Surveys of Planet-forming Disks

Peking University **Beijing, China**
B.S., Astronomy *2009 - 2013*

Research Interests

Star and planet formation, protoplanetary disks, (sub)mm interferometry, astrochemistry

Publication Summary

See the full publication list on ADS

ORCID ID: 0-0002-7607-719X

Total Publications: **45**, with citations of 1880 (Nov. 2022)

First Author Publications: **9**, with citations of ∼560

Approved Observing Proposals

As PI:

2022: LBT DDT, 22B-005, 6h, "Confirming the protoplanet candidate in LkCa 15"

2022: ALMA Cycle 9, 2022.1.00646.S, 21.7h, "Tracing the evolution of substructures: A high-resolution survey of old Upper Sco disks"

2022: ALMA Cycle 9, 2022.1.00828.S, 33.9h, "Zooming into the small disks"

2022: ALMA Cycle 9, 2022.1.01132.S, 14.7h, "A tale of two disk populations in Corona Australis"

2021: ALMA Cycle 8, 2021.1.00473.S, 13.9h, "A Chemistry Survey of Protoplanetary Disks in Binary Systems"

2021: ALMA Cycle 8, 2021.1.00864.S, 14.9h, "Tracing planet-forming pebbles across the water snow line with the synergy of ALMA and JWST"

2021: ALMA Cycle 8, 2021.1.01050.S, 17.1h, "A Closer Look at the Small Disks"

2021: VLA 21B-141, B-array, 16h, "Testing Trapping of Large Grains in a Dust Disk Ring"

2020: VLA 20B-342, A-array, 54h, "Testing Trapping of Large Grains in a Dust Disk Ring"

2020: SMA 20B-S026, 8 tracks, "Mapping the Gas Environment of Heavily Veiled Young Stars"

2020: SMA 20A-S024 & 20B-S027, 4 tracks, "Testing Binary Formation with Disk Alignment"

2019: SMA 19B-S011, 3 tracks, "The Synergy between SMA and ALMA: test disk formation and evolution models"

2019: ALMA Cycle 7, 2019.1.00607.S (open-sky), 13.8h, "A Closer Look at the Small Disks"

2018: ALMA Cycle 6, 2018.1.00614.S (open-sky), 12.2h, "Are Large Grains Trapped in Disk Rings?"

Selected projects as co-I:

- Involved as co-I in 9 ALMA projects, including one Large program; in 4 VLA projects, including one large program; as well as co-I in projects with SMA (4), JWST (3), HST (2), and VLT (1)

2021: HST Cycle 29, GO16651, 30 orbits, A Search for Accreting Protoplanets within Transition Disk Gaps

2021: JWST Cycle 1, GO01640, 1.7h, The infrared water spectrum as a tracer of pebble delivery to rocky planets

2021: JWST Cycle 1, GO02153, 7.8h, Detecting a Young 2 Jupiter Mass Planet Embedded in the Disk of HD 163296

2021: JWST Cycle 1, GO02025, 12.8h, The Chemistry of Planet Formation: A JWST-ALMA Survey of 4 Planet-Forming Disks

2020: VLA Large Program, The VLA View of Substructures in Protoplanetary Disks

2018: ALMA Cycle 6, Large Program, 2018.1.01055.L, The Chemistry of Planet Formation

2016: ALMA Cycle 4, 13h, 2016.1.01164.S, An Unbiased Survey of Disk Structures in Taurus

Selected Awards and Honors

2022: NASA Hubble Fellowship Program Sagan Fellowship

2021: AAS and IOP Publishing China Top Cited Paper Award for Long et al. (2019)

2020: AAS and IOP Publishing China Top Cited Paper Award for Long et al. (2018)

2017: National Scholarship, Peking University

2016: Presidential Scholarship, Peking University

2016: Award for Community and Public Service, Peking University

Service & Outreach

07/2022: NASA Exoplanet Research Program Panelist

2021-2022: SMA Science Seminar Organizer

2021-2022: SMA Time Allocation Committee

2021: Co-organizer of the Lorentz center workshop (online): *Planet-forming Disks: From Surveys to Answers*, Sept. 2021, Leiden, the Netherlands

2021: Science Advisor of SAO/Latino Initiative Program

2021/2022: SMA Interferometry School, SOC/instructor/lecturer, Cambridge, USA

2020/2021: NASA FINESST ASTRO external reviewer

2019-2021: CfA Postdoc Council Member

2019-: Referee for ApJ, ApJL, A&A, and MNRAS

2014-2018: Undergraduate Mentor, School of Physics, Peking University

Teaching & Mentoring

2021: Lecturer and Data reduction instructor at SMA Interferometry School

2020: Data reduction instructor at SMA Interferometry School

2015: Teaching Assistant for graduate course - stellar structure and evolution

student advised:
2021-: Yangfan Shi, graduate student at Peking University, co-advised with Greg Herczeg
2020-: Steve Espinoza Diaz, SAO/LIP undergraduate at U.Mass

Presentations

Invited talks, Seminars, and Colloquia
11/2022: Colloquium, The Academia Sinica Institute of Astronomy and Astrophysics
11/2022: Colloquium, Lunar and Planetary Lab, University of Arizona, USA
10/2022: ALMA Jets and Discs Study Group Seminar, ESO, Chile
10/2022: From Clouds to Planets II: The Astrochemical Link, Germany
12/2021: Friday Science Seminar, CIERA, Northwestern University, USA
11/2021: Origins Seminar, University of Arizona, USA
11/2021: CEHW Seminar, Penn State University, USA
05/2021: Department Seminar, University of Leicester, UK
03/2021: Monday Science Seminar, University of Wisconsin-Madison, USA
03/2021: SMA Science Seminar, CfA, USA
01/2021: Planetary Science Seminar, Caltech, USA
10/2020: Colloquium, University of Massachusetts Amherst, USA
05/2020: Planet Formation Group Seminar, Lund University, Sweden
04/2020: Planet Formation Group Seminar, MPIA, Germany
06/2019: Seminar, SWIFAR, Yunnan University, China
05/2019: Exoplanet workshop, Peking University, China
03/2019: Planet-Forming Disks: A workshop to honor Antonella Natta, Italy
12/2018: SMA Seminar, SAO/CfA, Cambridge, USA
12/2018: TUNA lunch Talk, NARO/UVa, Virginia, USA
12/2018: Seminar, UT Austin, Austin, USA
12/2018: Lunch Talk, KIAA, Beijing, China
09/2017: Star and Planet Formation Seminar, ESO, Germany

Contributed presentations
10/2022: Steward Observatory Internal Symposium, Tucson, USA
09/2022: Hubble Fellowship Symposium, Baltimore, USA
12/2020: Five years after HL Tau: a new era in planet formation, Chile
09/2019: CfA Postdoc Science Symposium, Cambridge, USA
05/2019: New Horizons in Planetary Systems, Victoria, Canada
07/2018: Astrochemistry 2018: Past, Present and Future (poster), Pasedena, USA
03/2018: SPF2: Star and Planet Formation in the Southwest (poster), Tucson, USA
12/2017: Planets and exoplanet formation (poster), Shanghai, China
08/2017: Chinese Astronomical Society annual meeting, Xinjiang, China

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ORCID ID: 0-0002-7607-719X

h-index: 21, total citations of 1880 (Nov. 2022)

As first-author:

9) Long, F.; Andrews, S., Zhang, S. et al. *ALMA Detection of Dust Trapping around Lagrangian Points in the LkCa 15 Disk*, 2022, ApJL, 937, 11
8) Long, F.; Andrews, S., Rossotti, G. et al. *Gas Disk Sizes from CO Line Observations: A Test of Angular Momentum Evolution*, 2022, ApJ, 931, 6
7) Long, F.; Andrews, S., Vega, J. et al., *The Architecture of the V892 Tau System: The Binary and Its Circumbinary Disk*, 2021, ApJ, 915, 131
6) Long, F.; Bosman, A., Cazzoletti, P. et al., *Exploring HNC and HCN line emission as probes of the protoplanetary disk temperature*, 2021, A&A, 647, A118
5) Long, F.; Pinilla, P.; Herczeg, G. J. et al., *Dual-wavelength ALMA Observations of Dust Rings in Protoplanetary Disks*, 2020, ApJ, 898, 36
4) Long, F.; Herczeg, G. J., Harsono, D. et al., *Compact Disks in a High-resolution ALMA Survey of Dust Structures in the Taurus Molecular Cloud*, 2019, ApJ, 882, 49
3) Long, F.; Pinilla, P.; Herczeg, G. J. et al., *Gaps and Rings in an ALMA Survey of Disks in the Taurus Star-forming Region*, 2018, ApJ, 869, 17
2) Long, F.; Herczeg, G. J.; Pascucci, I. et al., *An ALMA Survey of faint disks in the Chamaeleon I star-forming region: Why are some Class II disks so faint?*, 2018, ApJ, 863, 61
1) Long, F.; Herczeg, G. J.; Pascucci, I. et al., *An ALMA Survey of CO isotopologue emission from Protoplanetary Disks in Chamaeleon I*, 2017, ApJ, 844, 99

As significant contributing-author:

4) Harsono, D.; **Long, F.**; Pinilla, P. et al., *Dual-Band Observations of the Asymmetric Ring around CIDA 9A: Dead or Alive?* AAS in review
3) Kalscheur, M.; Zhang, S.; **Long, F.**, et al., *Substructures in Compact Disks of the Taurus Star-forming Region* AAS in review
2) Kurtovic, N. T., Pinilla, P., **Long, F.**, et al., *Size and structures of disks around very low mass stars in the Taurus star-forming region*, 2021, A&A, 645, 139
1) Manara, C. F., Tazzari, M., **Long, F.**, et al., *Observational constraints on dust disk sizes in tidally truncated protoplanetary disks in multiple systems in the Taurus region*, 2019, A&A, 628, 95

Other co-author publications:

34) Francis, L., et al. (including **Long, F.**, *Accretion Burst Echoes as Probes of Protostellar Environments and Episodic Mass Assembly*, 2022, ApJ, 937, 22
33) Bae, J., et al. (including **Long, F.**, *Molecules with ALMA at Planet-forming Scales (MAPS): A Circumplanetary Disk Candidate in Molecular-line Emission in the AS 209 Disk*, 2022, ApJL, 934, 20
32) Zhou, Y., et al. (including **Long, F.**, *HST/WFC3 H_{alpha} Direct-imaging Detection of a Pointlike Source in the Disk Cavity of AB Aur*, 2022, ApJL, 934, 13
31) Law, C., et al. (including **Long, F.**, *CO Line Emission Surfaces and Vertical Structure in Midinclination Protoplanetary Disks*, 2022, ApJ, 932, 114
30) Rota, A.A, et al. (including **Long, F.**, *Observational constraints on gas disc sizes in the protoplanetary discs of multiple systems in the Taurus region*, 2022, A&A, 662, 121
29) Huang, J, et al. (including **Long, F.**, *Disk Evolution Study through Imaging of Nearby Young Stars (DESTINYS): A Panchromatic View of DO Tau's Complex Kilo-astronomical-unit Environment*, 2022, ApJ, 930, 171
28) Sturm, J.A, et al. (including **Long, F.**, *Tracing pebble drift and trapping using radial carbon*

depletion profiles in protoplanetary disks, 2022, A&A, 660, 126
27) Schwarz, K., et al. (including **Long, F.**, *Molecules with ALMA at Planet-forming Scales (MAPS) XX. The Massive Disk Around GM Aurigae*, 2021, ApJS, 257, 20
26) Huang, J., et al. (including **Long, F.**, *Molecules with ALMA at Planet-forming Scales (MAPS) XIX. Spiral Arms, a Tail, and Diffuse Structures Traced by CO toward the GM Aur Disk*, 2021, ApJS, 257, 19
25) Teague, R., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) XVIII: Kinematic Substructures in the Disks of HD 163296 and MWC 480*, 2021, ApJS, 257, 18
24) Calahan, J., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) XVII. Determining the 2D Thermal Structure of HD 163296*, 2021, ApJS, 257, 17
23) Booth, A., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) XVI. Characterising the Impact of the Molecular Wind on the Evolution of theHD 163296 System*, 2021, ApJS, 257, 16
22) Bosman, A., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) XV. Tracing Proto-planetary Disk Structure within 20 au*, 2021, ApJS, 257, 15
21) Sierra, A., et al. (including **Long, F.**, *Molecules with ALMA at Planet-forming Scales (MAPS) XIV: Revealing disk substructures in multi-wavelength continuum emission*, 2021, ApJS, 257, 14
20) Bergner, J., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) XI: CN and HCN as Tracers of Photochemistry in Disks*, 2021, ApJS, 257, 11
19) Cataldi, G., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) X. Studying deuteration at high angular resolution toward protoplanetary disks*, 2021, ApJS, 257, 10
18) Alarcon, F., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) VIII. CO Gap in AS 209 - Gas Depletion or Chemical Processing?*, 2021, ApJS, 257, 8
17) Bosman, A., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) VII. Sub-stellar O/H and C/H and super-stellar C/O in planet feeding gas*, 2021, ApJS, 257, 7
16) Guzman, V., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) VI: Distribution of the small organics HCN, C_2H, and H_2CO*, 2021, ApJS, 257, 6
15) Zhang, K., et al. (including **Long, F.**, *Molecules with ALMA at Planet-forming Scales (MAPS) V: CO gas distributions*, 2021, ApJS, 257, 5
14) Law, J. C., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) IV: Emission Surfaces and Vertical Distribution of Molecules*, 2021, ApJS, 257, 4
13) Law, J. C., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) III: Characteristics of Radial Chemical Substructures*, 2021, ApJS, 257, 3
12) Öberg, K. I., et al. (including **Long, F.**), *Molecules with ALMA at Planet-forming Scales (MAPS) I: Program Overview and Highlights.*, 2021, ApJS, 257, 1
11) Pegues, J., et al. (including **Long, F.**), *An Atacama Large Millimeter/submillimeter Array Survey of Chemistry in Disks around M4-M5 Stars*, 2021, ApJ, 911, 150
10) Pegues, J., et al. (including **Long, F.**), *Dynamical Masses and Stellar Evolutionary Model Predictions of M Stars*, 2021, ApJ, 908, 42
9) Banzatti, A., et al. (including **Long, F.**), *Hints for Icy Pebble Migration Feeding an Oxygen-rich Chemistry in the Inner Planet-forming Region of Disks*, 2020, ApJ, 903, 124
8) Veronesi, B., et al. (including **Long, F.**), *Is the gap in the DS Tau disc hiding a planet?*, 2020, MNRAS, 495, 1913
7) Lodato, G., Dipierro, G., Ragusa, E., **Long, F.**, et al., *The newborn planet population emerging from ring-like structures in discs*, 2019, MNRAS, 486, 453
6) Liu, Y., et al. (including **Long, F.**), *The Ring Structure in the MWC 480 Disk Revealed by ALMA*, 2019, A&A, 622, 75
5) Herczeg, G. J., et al. (including **Long, F.**), *How Do Stars Gain Their Mass? A JCMT/SCUBA-2 Transient Survey of Protostars in Nearby Star-forming Regions*, 2017, ApJ, 849, 43
4) Holoien, T. W., et al. (including **Long, F.**), *The ASAS-SN bright supernova catalogue - I. 2013-2014*, 2017, MNRAS, 464, 2672

3) Pascucci, I., Testi, L., Herczeg, G. J., **Long, F.**, et al., *A Steeper than Linear Disk Mass-Stellar Mass Scaling Relation*, 2016, ApJ, 831, 125
2) Holoien, T. W., et al. (including **Long, F.**), *Six months of multiwavelength follow-up of the tidal disruption candidate ASASSN-14li and implied TDE rates from ASAS-SN*, 2016, MNRAS, 455, 2918
1) Jose, J., Guo, Z., **Long, F.**, et al., *ASAS-SN Discovery of an Unusual Nuclear Transient in PGC 043234*, 2014, ATel, 6777, 1