### Dr. Adam G. Ginsburg

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### **Educational Background:**

2013 PhD Astrophysics University of Colorado, Boulder 2009 M.S. Astrophysics University of Colorado, Boulder

2006 B.S. Astrophysics Rice University

### **Professional Employment:**

2023 -	Associate Professor	University of Florida
		Gainesville, Florida
2019 - 2023	Assistant Professor	University of Florida
		Gainesville, Florida
2016 - 2019	Jansky Fellow	National Radio Astronomy Observatory
		Socorro, New Mexico
2013 - 2016	ESO Fellow	European Southern Observatory
		Garching, Germany
2007 - 2013	Graduate Research	Center for Astrophysics and Space Astronomy,
	Assistant	University of Colorado, Boulder, CO
2010 - 2013	Instructor	Department of Astrophysical and Planetary Sciences,
		University of Colorado, Boulder, CO
2007 - 2011	Teaching Assistant	Department of Astrophysical and Planetary Sciences,
		University of Colorado, Boulder, CO
2007	Research Assistant	Department of Physics and Astronomy,
		University of Denver, Denver, CO

### Areas of Research:

- The astrophysics of massive star formation and the stellar initial mass function.
- The physical properties of the molecular interstellar medium.
- Development of molecular probes of gas physical conditions.
- Observations at several wavelengths, especially radio and infrared.
- The development of astronomical software tools, especially for large data cubes and archival data access.

# Funded Grants:

\$2.48 million in funding as PI from 2019-2024 from NSF, STSCI, NASA, and the Moore Foundation

Role	Reporting Agency	Grant Title	Dates	Total Allocation
PI	STSCI	JWST: Identifying, counting, and mapping YSOs in Sgr B2: our Galaxy's most massive molecular cloud	Aug/2024-	\$186,738
PI	STSCI	JWST: Star formation in W51	Aug/2024-	\$158,629
PΙ	STSCI	JWST: Evolution of Protoplanetary Disks in Westerlund $2$	Aug/2023-	\$63,238
PΙ	NASA/NUMFOC	U&stroquery Maintenance	Jan/23 - $Dec/24$	\$22,738
PΙ	Moore Founda- tion	Sustaining and Growing the Astropy Project	Jan/22 - Dec/23	\$14,700
PΙ	NSF (2206511)	Collaborative Research: ACES Galactic Center Mass Flow	$\frac{\text{Sep/22}}{\text{Aug/25}}$ -	\$236,990
PΙ	NSF (2142300)	CAREER: Mass Measurements in the Galaxy (AWD11525)	$\frac{\text{May}}{22}$ - $\frac{\text{Apr}}{27}$	\$885,271
PΙ	NSF/NRAO	NRAO Student Observing Support Award to Nazar Budaiev (AWD11499)	Jan/22 - Sep/23	\$34,955
PΙ	NSF (2008101)	Determining the Origin of the Types of Stars found in Galaxies (AWD08705)	Aug/20 - Jul/24	\$388,179
PI	NSF/NRAO	Star Formation in Sgr B2 DS? Student Observing Support for Desmond Jeff (AWD10546)	$\frac{\text{May}}{21}$ - $\frac{\text{Apr}}{23}$	\$34,933
PΙ	Moore Founda- tion	Sustaining and Growing the Astropy Project (AWD11449)	Jun/21 - May/22	\$13,397
PΙ	Moore Founda- tion	Sustaining and Growing the Astropy Project (AWD09203)	Jun/20 - Jun/21	\$13,264
PΙ	STSCI	JWST: Star Formation along the Galactic Dust Ridge	Jun/21-	\$203,261
PΙ	STSCI	JWST: Testing Protoplanetary Disk Evolution in Westerlund 1	Jun/21-	\$30,000
PI	NSF/NRAO	Link CASA to the Astropy ecosystem (AWD07225)	$\frac{\text{Oct}/19}{\text{Jan}/22}$ -	\$200,000

## Selected Press Coverage

- ALMA finds a disk in our neighboring galaxy: Universe Magazine, Astronomy Magazine
- $\bullet$  JWST stares into the icy Brick (2023): CNN, space.com
- Salt disk detection (2019): Nature Research Highlight, scitechdaily.com

## Honors/Awards:

2016 Nati	onal Radic	Astronomy	Observatory	Jansky	Fellowship
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- 2013 European Southern Observatory Garching Postdoctoral Fellowship
- 2011 University of Colorado Chance Irick Cooke Fellowship for Excellence in Research
- 2010 NRAO Green Bank Student Observing Support (\$35,000)
- 2010 NSF GRFP Honorable Mention
- 2009 NSF GRFP Honorable Mention
- 2008 NSF GRFP Honorable Mention
- 2008 NRAO Photo Contest First Prize (\$1000)
- 2008 University of Colorado Astrophysical and Planetary Sciences Excellence in Teaching award
- 2006 National Radio Astronomy Observatory summer REU with David Meier

## Research Supervising (Postdoc):

Scholar	Dates	Project
Miriam Garcia Santa-Maria	2024 -	Hunt for salted disks
Allison Towner	2020-2023	SiO outflows in the ALMA-IMF Program

## Research Advising (PhD):

Student	Date & Program	Project
Taehwa Yoo	PhD 2022-2027 (expected)	Star Formation and the IMF in W51
Savannah Gramze	PhD 2021-2026 (expected)	Gas infall along the Milky Way's bar
Nazar Budaiev	PhD 2020-2026 (expected)	The YSO population of Sgr B2 seen through masers and long-baseline ALMA observations
Alyssa Bulatek	PhD 2020-2026 (expected)	Which lines trace what processes in the Galactic Center ISM?
Theo Richardson	PhD 2019-2025 (expected)	Better understanding of the CMF $\rightarrow$ IMF through population modeling
Desmond Jeff	PhD 2019-2025 (expected)	Star Formation, Hot Cores, and the CMF in Sgr B2 DS
Natalie Butterfield	PhD at U. Iowa / NRAO Reber Fellow 2017-2018	Cloud Kinematics and Geometry in the Central Molecular Zone
Anna Faye McLeod	Ludwig-Maximilian University / ESO PhD Thesis Student 2013- 2016	FUSION: Comparison of hydrodynamic simulations and observations in nearby high mass star forming regions

# Research Advising (Undergraduate):

Date	Program	Student	Project
Summer 2024	Ariane Intern	Camille Bordachar	Cataloging molecules in W51 ALMAmm31
Spring 2023	Undergraduate	Brighten Jiang	GTC EMIR spectroscopy of massive star
Summer 2022	Ariane Intern	Allan Petre	candidates in The Brick VLA observations of W43 for the ALMA-
Summer 2022	Ariane intern	Anan Tene	IMF project
Summer 2021,	Undergraduate	Brice Tingle	ALMA-IMF-SPICY: SED fitting of YSOs
2022		Ü	· ·
Summer 2021	Undergraduate	Morgan Himes	ALMA-IMF-SPICY: SED fitting of YSOs
Summer 2021	UF REU	Sydney Petz	ALMA-IMF-SPICY: SED fitting of YSOs
Spring 2021	Undergraduate	Aden Dawson	JHK H2 imaging of W51 with GTC
Fall 2020-	Undergraduate	Michael Fero	Modeling Paschen Alpha emission from the Galaxy
Fall 2020	Undergraduate	Parker Ormonde	JHK H2 imaging of W51 with GTC
Fall 2020	Undergraduate	Diana Lutz	VLA imaging of ALMA-IMF targets to
			measure free-free contributions
Summer 2020	UF REU	Danielle Bovie	Fragmentation structure of W51 with ALMA
Spring 2020-	Undergraduate	Madeline Hall	Kinematic structure of Sgr B2
Fall 2019-	Undergraduate	Derod Deal	Ammonia Masers in W51
Summer 2019	NRAO REU Student	Josh Machado	Ammonia Temperature Mapping of W51
Summer 2019	NRAO REU Student	Tiffany Christian	Measuring Mass Functions: Statistical Uncertainties
Summer 2018	Google Summer of Code	Sushobhana Patra	Improving astropy-regions: CRTF and FITS region formats
Summer 2018	NRAO REU Student	Connor McClellan	9
Summer 2018	NKAO KEU Student	Connor McClellan	The YSO population of W51 at high resolution
Summer 2018	NRAO REU Student	Justin Otter	Disks and YSOs in Orion at high angular resolution
Summer 2017	NRAO Summer Stu-	Virginie Montes	The ionized jet IRAS $16562-3959$
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Summer 2017	NRAO REU Student	Terry Melo	A symmetric ionized and molecular jet in W51
Summer 2015	ESO Summer Student	Dinos Kousidis	Merging astropy tools into pyspeckit
Summer 2014	Google Summer of	Simon Liedtke	New tools for astroquery: XMatch,
	Code		SkyView, Atomic Line List
Summer 2013	Google Summer of Code	Madhura Parikh	A coherent API for astroquery, a python web database query toolkit
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# Teaching:

## University of Florida

Date	Course
Fall 2024	AST 4723: Observational Techniques II
Spring 2024	AST 7939: Graduate Star Formation
Fall 2023	QUEST: Knowledge and the Universe
Spring 2023	AST 4930: Star Formation
Fall 2022	AST 4723: Observational Techniques II
Spring 2022	AST 6939: Graduate Star Formation
Fall 2021	AST 3722: Observational Techniques I
Spring 2021	AST 3722: Observational Techniques I
Fall 2020	AST 4723: Observational Techniques II
Spring 2020	AST 3722: Observational Techniques I

I updated the curriculum of the Obs. Tech. courses to use python for data reduction and analysis; the websites with those materials are https://github.com/keflavich/AST3722\_Public\_Materials and https://github.com/keflavich/AST4723-Public-Materials. I added a radio astronomy module to AST4723, in which students check out 1.5m radio dishes to obtain HI 21cm spectra of the Galaxy.

### University of Colorado

Date	Course
Spring 2013	Instructor of ASTR 2600: Introduction to Programming for Astronomers (in IDL)
Fall 2012	Instructor of ASTR 2600: Introduction to Programming for Astronomers (in IDL)
Summer 2010	Co-Instructor of ASTR 1020: Stars and Galaxies

# Selected Conferences and Workshops attended (2017-):

Date	Meeting Name	Role	Talk or Poster Title
2024	Astrochemistry Coffee Podcast	Interview	The Millimeter Ultra Broadline Object (MUBLO)
2024	Early Phase of Star Formation (EPOS) 2024	Talk	The Icy Brick
2023	Surveying the Galaxy @ CalTech	Review Talk	The Galactic Center
2023	Galactic Center Workshop @ Granada	Talk	ACES: The ALMA CMZ Exploration Survey
2022	Computational Astrophysics in the ngVLA era	Talk	Salt
2022	Seeing the Future	Talk	Seeing the Future with SpectralCube and Radio Astro Tools
2022	Early Phase of Star Formation (EPOS) 2022	Talk	Dynamical, accretion, and photoevaporative truncation of disks living in dense clusters (Disks in Orion)
2021	Clouds to Discs	Talk	How do high-mass stars get their mass? Brinary stars as a probe
2021	Beirut ISM	Talk	The ALMA-IMF Large program: overview and early results on the origin of stellar masses
2020	AAS 236 ISM special session	Invited Talk	Surveys of the dense Galactic ISM with ALMA, VLA, GBT, and SMA
2019	StarFormMapper final conference	Invited Talk	Environmental effects within and around forming high-mass clusters
2018	Tracing the Flow	Invited Talk	Review and recent results in high-mass cluster formation
2018	Olympian Symposium: Gas and Stars from milli- to mega- parsecs	Talk	Widespread star formation throughout the Galactic center cloud Sgr B2 $$
2018	The Early Phase of Star Formation 2018	Talk	Star Formation Laws Evaluated at our Galaxy's Highest Density
2018	Oxford Molecular Cloud Workshop	Invited Talk	Cluster formation from GMCs
2017	Piercing the Galactic Darkness	Invited Talk	Star Formation in the Central Molecular Zone
2017	Behind the Curtain of Dust II	Talk	High-mass Star Formation in the Galaxy
2017	Multi-Scale Star Formation	Talk	The effects and importance of feedback on high- mass star formation within massive clusters
2017	AstroWin	Invited Talk	High-mass star formation in the Galaxy's densest environments: The effects and importance of feedback
2017	The origin of galaxies, stars, and planets in the era of ALMA	Invited Talk	High-mass star formation and feedback in massive protoclusters

### Selected Institute Talks:

Institute	Date	Talk Title
University of North Florida Colloquium	Nov 2024	Star Formation in the Galaxy
University of Georgia Colloquium	Oct 2024	Astrochemistry as a tool to study Star Formation in the Galaxy
Columbia University Colloquium	Sep 2024	Star Formation in the Galaxy
University of Washington Colloquium	Jan 2024	Star Formation & Mass Flows in the Galaxy
Syracuse Colloquium	Mar 2023	Star Formation & Mass Measurements in the Galaxy
Daytona State College Colloquium	Mar 2023	A tour of high-mass star formation in the Galaxy
Cagliari Colloquium	Nov 2022	Dynamical mass assembly & Mass Measurements in the Galaxy
MIT Astrochemistry Seminar	May, $2022$	Salt as a tool for weighing stars
UMD Colloquium	March, $2022$	Mass measurements in the Galaxy
Hamburg University Colloquium	April, 2021	Star Formation in Crowds
MPIfR Colloquium	November, 2020	Star Formation in Crowds
UNAM Morelia Colloquium	April, 2019	Star Formation in Crowds
U. Florida Colloquium	April, 2019	Star Formation in Crowds
UConn Colloquium	November, 2018	High-mass Star and Cluster Formation: Star formation changes with environment
UNM Astronomy Seminar	November, 2017	High-mass Star and Cluster Formation in the Galaxy
MSU Colloquium	October, 2017	High-mass Star and Cluster Formation in the Galaxy
UT Austin Colloquium	March, 2017	High-mass Star and Cluster Formation in the Galaxy
NRAO Socorro Colloquium	November, 2016	High-mass Star Formation in the Galaxy's Densest Environments
Herzberg Institute Colloquium	November, 2016	High-mass Star Formation in the Galaxy's Densest Environments
University of Virigina / NRAO Joint Colloquium	November, 2016	High-mass Star Formation in the Galaxy's Densest Environments

### Software:

I am an active developer of a large variety of astronomical python software tools and a contributor to astropy and its affiliates. My github profile (github.com/keflavich) contains a complete list of projects. Below is a selection of my most popular packages:

- astroquery (https://astroquery.readthedocs.org): a toolkit for querying internet-hosted astronomical databases
- pyspeckit (https://pyspeckit.bitbucket.org): a software suite for visualizing and analyzing spectral line and spectral cube data
- spectral-cube (https://spectral-cube.rtfd.org): a library for the manipulation of radio spectral cube data
- pyradex (https://github.com/keflavich/pyradex): an object-oriented frontend to the popular RADEX radiative transfer code and its peers

• image-registration (https://github.com/keflavich/image\_registration): a package designed to determine and correct the offsets between images containing only diffuse emission

#### Service to the Profession:

- Member of the James Webb Space Telescope Users Committee (2022-)
- Referee for Science, Nature, Astrophysical Journal, Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, Proceedings of the Astronomical Society of Japan, Revista Mexicana de Astronomía y Astrofísica
- Served on telescope time allocation panels for JWST, NRAO (VLA, GBT, VLBA), SOFIA, Arizona Radio Observatories, and FAST
- Served on grant review panels for the NASA archival data analysis (ADAP), NRAO Student Observing Support, Austrian science fund, Hubble Fellowship, and NSF Postdoctoral Fellowship programs
- Member of the astropy collaboration, serving as lead maintainer of astroquery and member of the Spectroscopy Coordinating Committee.

### Service to the University:

- Graduate Coordinator for the Department of Astronomy (Spring 2024-)
- Organizer of ArXiv coffee (MWF) at UF 2019-2024
- Committee service:
  - Computing Committee (chair 2019-2022, member 2023-2024)
  - Admissions Committee (member 2019-2021, chair/co-chair 2022-2023)
  - Mentoring (member 2024)
  - Governance (member 2023-2024)
  - Observatory (member 2020-2022, 2024)
  - Graduate Curriculum (member 2022, chair 2023-2024)

### Conferences and Workshops hosted:

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Date	Meeting Name	Role
2022	Cells to Galaxies Talk Series & Conference	SOC member
2021	CMZOOM Talk Series	Lead organizer
2016	Lorentz Center workshop "Apples-to-Apples":	Co-organizer
	Comparing simulations & observations	
2015	ESO Central Molecular Zone workshop (2 days)	Organizer
2015	Florence Simulation-Observation Workshop (5 days)	Organizer
2014	Workshop on the APEX CMZ 1 mm survey at MPIfR Bonn (1 day)	Organizer
2014	ALMA Postdoc Symposium, Tokyo	Co-organizer

### Additional Training:

- UF Center for Teaching Excellence program (Fall 2019)
- ESO Fellows Development Program: MBTI (October 8, 2015)
- ESO Fellows Development Program: People Skills (June 18, 2015)
- ESO Fellows Development Program: Networking (February 17, 2015)
- ESO Fellows Development Program: Presentation Skills (July 3, 2014)
- ESO Fellows Development Program: Scientific Writing (March 4, 2014)
- ESO Fellows Development Program: Project Management (January 28, 2014)

# Selected telescope time allocations as PI (2015-2018):

Telescope	Title	Time	Status
<b>VLA</b> 2018	VLA/19A-254: Disks and Outflows around O-type stars in W51	15 hours	re-Approved
<b>ALMA</b> 2018	Cycle 6: 2018.1.00057.S: Probing low-mass star formation in the CMZ in Sgr B2 Deep South	14 hours	re-Approved
<b>GBT</b> 2018	GBT18A-014: MUSTANG Galactic Plane survey pilot: Protoclusters & Massive Stars	31 hours	Approved, partly Observed
<b>VLA</b> 2018	VLA18A-229: Characterizing high-mass protostars in the whole of Sgr B2 $$	36 hours	Observed
<b>ALMA</b> 2017	Cycle 5: 2017.1.01335.L (co-PI): ALMA-IMF: ALMA transforms our view of the origin of stellar masses	64 hours	Approved
<b>ALMA</b> 2017	Cycle 5: 2017.1.00293.S: Characterizing the accretion structures around the HMYSOs in W51	8 hours	Approved
<b>ALMA</b> 2017	Cycle 5: 2017.1.00114.S: Probing low-mass star formation in the CMZ in Sgr B2 Deep South	14 hours	Approved, partly Observed
<b>ALMA</b> 2017	Cycle 5: 2017.1.00008.S: The core mass function and its evolution in an extreme protocluster	10 hours	Approved, partly Observed
<b>GBT</b> 2016	GBT17A-195: MUSTANG Galactic Plane survey pilot: Protoclusters & Massive Stars	31 hours	Approved, observed as GBT18A-014
<b>VLA</b> 2016	VLA16B-202: Disks and Outflows around O-type stars in W51 $$	16 hours	Approved, partly Observed
<b>ALMA</b> 2016	Cycle 4: 2016.1.00620.S: The core mass function and its evolution in an extreme protocluster	10 hours	Approved, partly Observed
<b>ALMA</b> 2016	Cycle 4: 2016.1.00550.S: (How) do very massive stars form in our Galaxy?	7.5 hours	Observed
<b>ALMA</b> 2015	Cycle 3: 2015.1.00262.S: Digging for rusty bullets at an explosion site	1.9 hours	Observed
<b>GBT</b> 2015	GBT/15B-129: Measuring the gas density along the CMZ dust ridge	13.5 hours	Approved, never observed
<b>ATCA</b> 2015	C3045: Geometry of clouds and HII regions in the CMZ using H2CO $$	84 hours	Published 2015A&A584L7G

# Selected telescope time allocations as PI (2009 - 2014):

Telescope	Title	Time	Status
<b>VLA</b> 2014	VLA15A-164: Studying turbulence through the atomic-to-molecular transition	3.3 hours	Observed
<b>GBT</b> 2014	GBT14A-329: MUSTANG Galactic Plane survey: HCHIIs in the brightest massive proto-clusters (resubmitted as GBT17A-195)	14 hours	Approved, observed as GBT18A-014
<b>ALMA</b> 2014	Cycle 2: 2013.1.00308.S: Gas temperature and kinematics as key inputs for star formation theory: Cores and turbulence in the massive protocluster W51	2.4 hours	Published: 2017ApJ84292G
<b>ALMA</b> 2014	Cycle 2: 2013.1.00269.S: Sgr B2 - The Proving Ground for Star Formation Theories	6 hours	Published: 2018ApJ853171G
<b>LOFAR</b> 2014	Cycle 2: LC2_006: A search for p-H2CO, a potential EoR contaminant, toward the Galactic Center, W43, W44, W49, and M82.	8 hours	Observed
<b>APEX</b> 2014	$\ensuremath{\mathrm{H2CO}}$ Thermometry of the CMZ to understand its low star formation rate	250 hours	Published: 2016A&A586A50G
<b>GBT</b> 2014	GBT14A-110/GBT12B-221: Density Measurements in G0.253+0.016: Pilot program for CMZ H2CO densitometry	18 hours	Observed
<b>KPNO</b> 2013	2013A-0399: Star formation in the Central Molecular Zone: Massive Outflows in Sgr C	6 hours	Observed
<b>EVLA</b> 2013	13A/064: Massive stars and ionized gas in the W51 complex	13 hours, 4 configs	Published: 2016A&A595A27G
Arecibo 2012	A2854: Density Map of the W51 Giant Molecular Cloud complex	13 hours	Published: 2015A&A573A.106G
<b>GBT</b> 2010	GBT10B-019: Densitometry of young star-forming complexes throughout the Galaxy	120 hours	Published: 2013ApJ77950G
Arecibo 2010	A2584: Densitometry of young star-forming complexes throughout the Galaxy	60 hours	Published: 2013ApJ77950G
<b>GBT</b> 2009	GBT09C-049: Measuring the dense gas mass fraction with H2CO absorption	4 hours	Published: 2011ApJ736149G

## Other relevant observing:

I was an active user of the Apache Point Observatory (APO) while at the University of Colorado, using a few dozen nights of TripleSpec, NICFPS, and DIS time.

I am Co-I on successful proposals to the VLT, Gemini, SOFIA, HST, ALMA, IRAM 30m, HHT/SMT, APEX, Herschel, GBT, VLA, KPNO, LOFAR, and Arecibo.

## Refereed Publications as of October 4, 2024 22 first author, 173 total, with 23172 citations and h-index 48:

- [1] Fischer, W. J. et al., Far-infrared Luminosity Bursts Trace Mass Accretion onto Protostars, February, 2024, AJ, 167, 82, 0 Citation(s)
- [2] Guarcello, M. G. et al., EWOCS-I: The catalog of X-ray sources in Westerlund 1 from the Extended Westerlund 1 and 2 Open Clusters Survey, February, 2024, A&A, 682, A49, 0 Citation(s)
- [3] Hatchfield, H. P. et al., CMZoom. IV. Incipient High-mass Star Formation throughout the Central Molecular Zone, February, 2024, ApJ, 962, 14, 2 Citation(s)
- [4] Peltonen, J. et al., JWST reveals star formation across a spiral arm in M33, February, 2024, MNRAS, 527, 10668, 2 Citation(s)
- [5] Richardson, T., Ginsburg, A., Indebetouw, R., & Robitaille, T. P., An Updated Modular Set of Synthetic Spectral Energy Distributions for Young Stellar Objects, February, 2024, ApJ, 961, 188, 0 Citation(s)
- [6] Armante, M. et al., ALMA-IMF X The core population in the evolved W33-Main (G012.80) protocluster, January, 2024, arXiv e-prints, arXiv:2401.09203, 1 Citation(s)
- [7] Budaiev, N. et al., Protostellar Cores in Sagittarius B2 N and M, January, 2024, ApJ, 961, 4, 2 Citation(s)
- [8] Jeff, D. et al., Thermal Properties of the Hot Core Population in Sagittarius B2 Deep South, January, 2024, arXiv e-prints, arXiv:2401.09749, 1 Citation(s)
- [9] Lin, Y. et al., Massive clumps in W43-main: Structure formation in an extensively shocked molecular cloud, January, 2024, arXiv e-prints, arXiv:2401.17192, 0 Citation(s)
- [10] McLeod, A. F., Klaassen, P. D., Reiter, M., Henshaw, J., Kuiper, R., & Ginsburg, A., A probable Keplerian disk feeding an optically revealed massive young star, January, 2024, Nature, 625, 55, 0 Citation(s)
- [11] Towner, A. P. M. et al., ALMA-IMF. IX. Catalog and Physical Properties of 315 SiO Outflow Candidates in 15 Massive Protoclusters, January, 2024, ApJ, 960, 48, 0 Citation(s)
- [12] Díaz-González, D. J. et al., ALMA-IMF. VIII. Combination of Interferometric Continuum Images with Single-dish Surveys and Structural Analysis of Six Protoclusters, December, 2023, ApJS, 269, 55, 1 Citation(s)
- [13] **Ginsburg**, A. et al., JWST Reveals Widespread CO Ice and Gas Absorption in the Galactic Center Cloud G0.253+0.016, December, 2023, ApJ, 959, 36, 0 Citation(s)
- [14] Gramze, S. R. et al., Evidence of a Cloud-Cloud Collision from Overshooting Gas in the Galactic Center, December, 2023, ApJ, 959, 93, 0 Citation(s)
- [15] Guarcello, M. G. et al., EWOCS-I: The catalog of X-ray sources in Westerlund 1 from the Extended Westerlund 1 and 2 Open Clusters Survey, December, 2023, arXiv e-prints, arXiv:2312.08947, 0 Citation(s)
- [16] Olguin, F. A. et al., Digging into the Interior of Hot Cores with ALMA: Spiral Accretion into the High-mass Protostellar Core G336.01-0.82, December, 2023, ApJ, 959, L31, 1 Citation(s)
- [17] Skretas, I. M. et al., The Cygnus Allscale Survey of Chemistry and Dynamical Environments: CASCADE. II. A detailed kinematic analysis of the DR21 Main outflow, November, 2023, A&A, 679, A66, 0 Citation(s)
- [18] Bulatek, A., **Ginsburg**, A., Darling, J., Henkel, C., & Menten, K. M., The 107 GHz Methanol Transition Is a Dasar in G0.253+0.016, October, 2023, ApJ, 956, 78, 0 Citation(s)
- [19] Cunningham, N. et al., ALMA-IMF. VII. First release of the full spectral line cubes: Core kinematics traced by DCN J = (3-2), October, 2023, A&A, 678, A194, 6 Citation(s)
- [20] Pandhi, A. et al., Alignment of dense molecular core morphology and velocity gradients with ambient magnetic fields, October, 2023, MNRAS, 525, 364, 3 Citation(s)
- [21] Petkova, M. A. et al., Kinematics of Galactic Centre clouds shaped by shear-seeded solenoidal turbulence, October, 2023, MNRAS, 525, 962, 1 Citation(s)
- [22] Ryan, D. F. et al., A Unified Framework for Manipulating N-dimensional Astronomical Data and Coordinate Transformations in Python: The NDCube 2 and Astropy APE-14 World Coordinate System APIs, October, 2023, ApJ, 956, 44, 0 Citation(s)
- [23] Ballering, N. P. et al., Isolating Dust and Free-Free Emission in ONC Proplyds with ALMA Band 3 Observations, September, 2023, ApJ, 954, 127, 3 Citation(s)
- [24] Henshaw, J. D., Barnes, A. T., Battersby, C., Ginsburg, A., Sormani, M. C., & Walker, D. L., 2023, in Astronomical Society of the Pacific Conference Series, Vol. 534, Protostars and Planets VII, ed. S. Inutsuka, Y. Aikawa, T. Muto, K. Tomida, & M. Tamura, 83

- [25] Nony, T. et al., ALMA-IMF. V. Prestellar and protostellar core populations in the W43 cloud complex, June, 2023, A&A, 674, A75, 16 Citation(s)
- [26] Pouteau, Y. et al., ALMA-IMF. VI. Investigating the origin of stellar masses: Core mass function evolution in the W43-MM2&MM3 mini-starburst, June, 2023, A&A, 674, A76, 11 Citation(s)
- [27] Callanan, D. et al., CMZoom III: Spectral line data release, April, 2023, MNRAS, 520, 4760, 2 Citation(s)
- [28] Wright, M. et al., An Ionized Outflow in Orion-KL Source I?, March, 2023, ApJ, 945, 14, 1 Citation(s)
- [29] Smith, S. E. T. et al., Velocity-coherent substructure in TMC-1: inflow and fragmentation, February, 2023, MNRAS, 519, 285, 3 Citation(s)
- [30] Galván-Madrid, R. et al., Clustered Formation of Massive Stars within an Ionized Rotating Disk, January, 2023, ApJ, 942, L7, 0 Citation(s)
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