#### Dr. Adam G. Ginsburg

#### Assistant Professor, University of Florida

Bryant Space Science Center, 1772 Stadium Road, Gainesville, FL 32611 E-mail: adamginsburg@ufl.edu / adam.g.ginsburg@gmail.com

ORCID: 0000-0001-6431-9633 Website: www.adamgginsburg.com

#### **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:**

| 2019 -      | 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 Assistant | Center for Astrophysics and Space Astronomy,        |
|             |                             | 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 processes governing the stellar initial mass function.
- The physical properties of the molecular interstellar medium, supersonic turbulence, and formaldehyde and other molecules as probes of local physical conditions.
- Single-dish heterodyne and continuum millimeter observing, radio single-dish and synthesis array imaging, and optical and near infrared imaging and spectroscopy.
- The development of software tools for the analysis and visualization of diffuse and extended emission, spectral data cubes, and large astronomical data sets.

| Date           | Program                                                     | Student             | Project                                                                                                        |  |
|----------------|-------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------|--|
| Summer<br>2018 | Google Summer of<br>Code                                    | Sushobhana Patra    | Improving astropy-regions: CRTF an FITS region formats                                                         |  |
| Summer<br>2018 | NRAO REU Student                                            | Connor McClellan    | The YSO population of W51 at high resolution                                                                   |  |
| Summer<br>2018 | NRAO REU Student                                            | Justin Otter        | Disks and YSOs in Orion at high angula resolution                                                              |  |
| 2017-2018      | PhD Student                                                 | Natalie Butterfield | Cloud Kinematics and Geometry in the Central Molecular Zone                                                    |  |
| Summer<br>2017 | NRAO Summer Student                                         | Virginie Montes     | The ionized jet IRAS 16562-3959                                                                                |  |
| Summer<br>2017 | NRAO REU Student                                            | Terry Melo          | A symmetric ionized and molecular jet in W51                                                                   |  |
| 2013 - 2016    | Ludwig-Maximilian<br>University / ESO<br>PhD Thesis Student | Anna Faye McLeod    | FUSION: Comparison of hydrodynamic<br>simulations and observations in nearby high<br>mass star forming regions |  |
| Summer<br>2015 | ESO Summer Student                                          | Dinos Kousidis      | Merging astropy tools into pyspeckit                                                                           |  |
| Summer<br>2014 | Google Summer of<br>Code                                    | Simon Liedtke       | New tools for astroquery: XMatch,<br>SkyView, Atomic Line List                                                 |  |
| Summer<br>2013 | Google Summer of<br>Code                                    | Madhura Parikh      | A coherent API for astroquery, a python web database query toolkit                                             |  |
|                |                                                             |                     | 1 V                                                                                                            |  |

## Teaching:

| 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                                |
| Fall 2011   | Co-Instructor of ASTR 6000: Graduate Seminar on the Interstellar Medium       |
| Fall 2011   | Teaching Assistant for ASTR 3510: Astronomical Observing (imaging)            |
| Spring 2010 | Teaching Assistant for ASTR 3520: Astronomical Observing (spectroscopy)       |
| Fall 2009   | Teaching Assistant for ASTR 3510: Astronomical Observing (imaging)            |
| Fall 2008   | Teaching Assistant for ASTR 3520: Astronomical Observing (spectroscopy)       |
| Spring 2008 | Teaching Assistant for ASTR 3510: Astronomical Observing (imaging)            |
| Fall 2007   | Teaching Assistant for ASTR 3520: Astronomical Observing (spectroscopy)       |

### Selected Conferences and Workshops attended (2015-):

|      |                                                                            |                       | ()                                                                                                    |
|------|----------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------|
| Date | Meeting Name                                                               | Role                  | Talk or Poster Title                                                                                  |
| 2019 | ${\bf Star Form Mapper\ final\ conference}$ ence                           | Invited<br>Talk       | Environmental effects within and around forming high-mass clusters                                    |
| 2018 | Tracing the Flow                                                           | Invited<br>Talk       | Review and recent results in high-mass cluster formation                                              |
| 2018 | Olympian Symposium: Gas and Stars from milli- to megaparsecs               | 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<br>Workshop                                         | Invited<br>Talk       | Cluster formation from GMCs                                                                           |
| 2017 | Piercing the Galactic Darkness                                             | Invited<br>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-<br>mass star formation within massive clusters        |
| 2017 | AstroWin                                                                   | Invited<br>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<br>Talk       | High-mass star formation and feedback in massive protoclusters                                        |
| 2016 | The Local Truth: Star-Formation and Feedback in the SOFIA Era              | Talk                  | Feedback and Accretion around proto-O-stars                                                           |
| 2016 | Half a decade of ALMA: Cosmic Dawns Transformed                            | Talk                  | Feedback and Accretion Toward Proto-O-Stars at ALMA's Highest Resolution                              |
| 2016 | Sexten: The Role of Feedback<br>in Star Cluster Formation and<br>Evolution | Talk                  | The ineffectiveness of feedback in a nearby forming massive cluster, W51 $$                           |
| 2016 | The Early Phase of Star Formation 2016                                     | Talk                  | The effects and extent of feedback on dense prestellar gas near proto-OB stars                        |
| 2016 | From Stars to Massive Stars                                                | Invited<br>Talk       | High-mass Stars and Cores in Massive Protoclusters                                                    |
| 2016 | APEX Ringberg 2016                                                         | Talk                  | Dense gas in the Central Molecular Zone is warm and turbulent                                         |
| 2015 | The 6th Zermatt ISM Symposium                                              | Talk                  | Dense gas in the Central Molecular Zone is warm and heated by turbulence                              |
| 2015 | Astropy Lorentz Center<br>Workshop (5 days)                                | Talks & unconferences | radio-astro-tools, astroquery, and spectral-cube                                                      |
| 2015 | University of Munich Filaments Workshop (3 days)                           | Talk                  | W51: The most active star-forming complex in the Galaxy                                               |
| 2015 | Soul of High Mass Star Formation, Chile                                    | Talk                  | The Density Structure of the W51 GMC                                                                  |
|      |                                                                            |                       |                                                                                                       |

#### Selected Institute Talks:

| 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 /<br>NRAO Joint Colloquium | November, 2016 | High-mass Star Formation in the Galaxy's Densest Environments                 |  |
| • ESO Lunch Talk                                    | 2013           | Examining Massive Cluster Formation with H2CO in W51                          |  |
| • MPIfR Lunch Talk                                  | 2013           | Surveying Star Formation in the Galactic Plane                                |  |
| • CfA Lunch Talk                                    | 2013           | Surveying Star Formation in the Galactic Plane                                |  |

#### 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:

- Organizer of NRAO's Wednesday Lunch Talk series, 2016-2019
- Organizer of the "Python Coffee and Tutorial" series at ESO, 2014-2016
- Referee for the following journals:
  - 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 the NRAO (VLA, GBT, VLBA) TAC
- Served on the SOFIA TAC
- Served on the Arizona Radio Observatory TAC
- Panel chair for a NASA grant review panel
- ESO ALMA Fellow Duties as part of the European ALMA Regional Center. Primary duties include software development, maintenance of the Quality Assurance Packager software, and regression testing

- Member of the astropy collaboration, serving as lead maintainer of astroquery and member of the Spectroscopy Coordinating Committee
- Member of the montage (montage.ipac.caltech.edu) Image Mosaic Engine users group
- Member of the Next-Generation VLA (NGVLA) high mass star formation working group
- Member of the SKA Galactic Science working group

#### Conferences and Workshops hosted:

| Date | Meeting Name                                               | Role         |
|------|------------------------------------------------------------|--------------|
| 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:**

- 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-):

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

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

| Telescope          | Title                                                                                                                                                 | Time                   | Status                                 |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------|
| <b>VLA</b><br>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,<br>observed as<br>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:<br>2017ApJ84292G            |
| <b>ALMA</b> 2014   | Cycle 2: 2013.1.00269.S: Sgr B2 - The Proving Ground for Star Formation Theories                                                                      | 6 hours                | Published:<br>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   | ${ m H2CO}$ 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,<br>4 configs | Published: 2016A&A595A27G              |
| Arecibo<br>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:<br>2013ApJ77950G            |
| Arecibo<br>2010    | A2584: Densitometry of young star-forming complexes throughout the Galaxy                                                                             | 60 hours               | Published:<br>2013ApJ77950G            |
| <b>GBT</b> 2009    | GBT09C-049: Measuring the dense gas mass fraction with H2CO absorption                                                                                | 4 hours                | Published:<br>2011ApJ736149G           |

# Refereed Publications as of September 8, 2020 17 first author, 104 total, with 6176 citations:

- [1] Battersby, C. et al., CMZoom: Survey Overview and First Data Release, August, 2020, ApJS, 249, 35, 1 Citation(s)
- [2] Choudhury, S. et al., Ubiquitous NH<sub>3</sub> supersonic component in L1688 coherent cores, August, 2020, A&A, 640, L6, 0 Citation(s)
- [3] Rivera-Soto, R., Galván-Madrid, R., **Ginsburg**, A., & Kurtz, S., Recombination Lines and Molecular Gas from Hypercompact HII regions in W51 A, August, 2020, ApJ, 899, 94, 0 Citation(s)
- [4] Henshaw, J. D. et al., Ubiquitous velocity fluctuations throughout the molecular interstellar medium, July, 2020, Nature Astronomy, 5 Citation(s)
- [5] Ginsburg, A. et al., The MUSTANG Galactic Plane Survey (MGPS90) Pilot, June, 2020, ApJS, 248, 24, 1 Citation(s)
- [6] Lu, X. et al., ALMA Observations of Massive Clouds in the Central Molecular Zone: Jeans Fragmentation and Cluster Formation, May, 2020, ApJ, 894, L14, 0 Citation(s)
- [7] Rosen, A. L., Offner, S. S. R., Sadavoy, S. I., Bhandare, A., Vázquez-Semadeni, E., & **Ginsburg**, A., Zooming in on Individual Star Formation: Low- and High-Mass Stars, May, 2020, SSR, 216, 62, 3 Citation(s)
- [8] Chen, C.-Y. et al., Relative alignment between dense molecular cores and ambient magnetic field: the synergy of numerical models and observations, March, 2020, MNRAS, 494, 1971, 1 Citation(s)
- [9] Bally, J., Ginsburg, A., Forbrich, J., & Vargas-González, J., The Orion Protostellar Explosion and Runaway Stars Revisited: Stellar Masses, Disk Retention, and an Outflow from the BecklinNeugebauer Object, February, 2020, ApJ, 889, 178, 2 Citation(s)
- [10] Butterfield, N. O. et al., 6.7 GHz CH<sub>3</sub>OH Absorption toward the N3 Galactic Center Point Source, February, 2020, ApJ, 889, 174, 0 Citation(s)
- [11] Wright, M. et al., Observations of the Orion Source I Disk and Outflow Interface, February, 2020, ApJ, 889, 155, 2 Citation(s)
- [12] **Ginsburg**, A. & Goddi, C., First detection of CS masers around a high-mass young stellar object, W51 e2e, November, 2019, AJ, 158, 208, O Citation(s)
- [13] McLeod, A. F. et al., Feedback from massive stars at low metallicities: MUSE observations of N44 and N180 in the Large Magellanic Cloud, July, 2019, MNRAS, 486, 5263, 10 Citation(s)
- [14] How-Huan Chen, H. et al., Droplets I: Pressure-Dominated Sub-0.1 pc Coherent Structures in L1688 and B18, June, 2019, ApJ, 877, 93, 20 Citation(s)
- [15] **Ginsburg**, A., Mills, E. A. C., Battersby, C. D., Longmore, S. N., & Kruijssen, J. M. D., Astro2020 Science White Paper: What is the lifecycle of gas and stars in galaxy centers?, May, 2019, BAAS, 51, 220, 0 Citation(s)
- [16] Colombo, D. et al., The integrated properties of the molecular clouds from the JCMT CO(3-2) High Resolution Survey, March, 2019, MNRAS, 483, 4290, 13 Citation(s)
- [17] Ginsburg, A. et al., astroquery: An Astronomical Web-Querying Package in Python, March, 2019, AJ, 157, 98, 35 Citation(s)
- [18] Suri, S. T. et al., The CARMA-NRO Orion Survey: The filamentary structure as seen in C<sup>18</sup>O emission, March, 2019, A&A, 623, A142, 10 Citation(s)
- [19] Liu, H. B. et al., Investigating fragmentation of gas structures in OB cluster-forming molecular clump G33.92+0.11 with 1000 AU resolution observations of ALMA, February, 2019, ApJ, 871, 185, 11 Citation(s)
- [20] Mangum, J. G., Ginsburg, A. G., Henkel, C., Menten, K. M., Aalto, S., & van der Werf, P., Fire in the Heart: A Characterization of the High Kinetic Temperatures and Heating Sources in the Nucleus of NGC253, February, 2019, ApJ, 871, 170, 7 Citation(s)
- [21] Ginsburg, A., McGuire, B., Plambeck, R., Bally, J., Goddi, C., & Wright, M., Orion Source I's disk is salty, February, 2019, ApJ, 872, 54, 8 Citation(s)
- $[22] \quad \text{Mills, E. A. C. et al., } \textit{Discovery of 14NH3 (2,2) maser emission in Sgr B2-Main, December, 2018, ApJ, 869, L14, 3 \textit{ Citation(s)} \\$
- [23] —, The Dense Gas Fraction in Galactic Center Clouds, November, 2018, ApJ, 868, 7, 10 Citation(s)
- [24] Astropy Collaboration et al., The Astropy Project: Building an Open-science Project and Status of the v2.0 Core Package, September, 2018, AJ, 156, 123, 1164 Citation(s)
- [25] Ginsburg, A. & Kruijssen, J. M. D., A High Cluster Formation Efficiency in the Sagittarius B2 Complex, September, 2018, ApJ, 864, L17, 10 Citation(s)
- [26] Monsch, K. et al., Dense Gas Kinematics and a Narrow Filament in the Orion A OMC1 Region Using NH<sub>3</sub>, July, 2018, ApJ, 861, 77, 16 Citation(s)

- [27] Ginsburg, A., Bally, J., Goddi, C., Plambeck, R., & Wright, M., A Keplerian Disk around Orion SrCI, a 15 Msun YSO, June, 2018, ApJ, 860, 119, 29 Citation(s)
- [28] Kong, S. et al., The CARMA-NRO Orion Survey, June, 2018, ApJS, 236, 25, 31 Citation(s)
- [29] Goddi, C., **Ginsburg**, A., Maud, L., Zhang, Q., & Zapata, L., Accretion and outflow structures within 1000 AU from high-mass protostars with ALMA longest baselines, May, 2018, arXiv e-prints, arXiv:1805.05364, 14 Citation(s)
- [30] Youngblood, A., France, K., Ginsburg, A., Hoadley, K., & Bally, J., The Orion Fingers: H<sub>2</sub> Temperatures and Excitation in an Explosive Outflow, April, 2018, ApJ, 857, 7, 1 Citation(s)
- [31] Smith, N., **Ginsburg**, A., & Bally, J., A disrupted molecular torus around Eta Carinae as seen in 12CO with ALMA, March, 2018, MNRAS, 474, 4988, 13 Citation(s)
- [32] Ginsburg, A. et al., Distributed Star Formation throughout the Galactic Center Cloud Sgr B2, February, 2018, ApJ, 853, 171, 36 Citation(s)
- [33] Walker, D. L. et al., Star formation in a high-pressure environment: An SMA view of the Galactic centre dust ridge, February, 2018, MNRAS, 474, 2373, 17 Citation(s)
- [34] Sánchez-Monge, Á., Schilke, P., **Ginsburg**, A., Cesaroni, R., & Schmiedeke, A., STATCONT: A statistical continuum level determination method for line- rich sources, January, 2018, A&A, 609, A101, 18 Citation(s)
- [35] Redaelli, E. et al., The Green Bank Ammonia Survey: Unveiling the Dynamics of the Barnard 59 star-forming Clump, December, 2017, ApJ, 850, 202, 7 Citation(s)
- [36] Keown, J. et al., The Green Bank Ammonia Survey: Observations of Hierarchical Dense Gas Structures in Cepheus-L1251, November, 2017, ApJ, 850, 3, 14 Citation(s)
- [37] Krieger, N. et al., The Survey of Water and Ammonia in the Galactic Center (SWAG): Molecular Cloud Evolution in the Central Molecular Zone, November, 2017, ApJ, 850, 77, 30 Citation(s)
- [38] Kirk, H. et al., The Green Bank Ammonia Survey: Dense Cores Under Pressure in Orion A, September, 2017, ApJ, 846, 144, 36 Citation(s)
- [39] Friesen, R. K. et al., The Green Bank Ammonia Survey: First Results of NH<sub>3</sub> Mapping of the Gould Belt, July, 2017, ApJ, 843, 63, 73 Citation(s)
- [40] Sánchez-Monge, Á. et al., The physical and chemical structure of Sagittarius B2. II. Continuum millimeter emission of Sgr B2(M) and Sqr B2(N) with ALMA, July, 2017, A&A, 604, A6, 28 Citation(s)
- [41] **Ginsburg**, A. et al., Thermal Feedback in the High-mass Star- and Cluster-forming Region W51, June, 2017, ApJ, 842, 92, 21 Citation(s)
- [42] Lin, Y. et al., Cloud structure of three Galactic infrared dark star-forming regions from combining ground and space based bolometric observations, May, 2017, ApJ, 840, 22, 21 Citation(s)
- [43] Schuller, F. et al., SEDIGISM: Structure, excitation, and dynamics of the inner Galactic interstellar medium, May, 2017, A&A, 601, A124, 34 Citation(s)
- [44] Lu, X. et al., The Molecular Gas Environment in the 20 km s<sup>-1</sup> Cloud in the Central Molecular Zone, April, 2017, ApJ, 839, 1, 19 Citation(s)
- [45] Bally, J. et al., The ALMA View of the OMC1 Explosion in Orion, March, 2017, ApJ, 837, 60, 58 Citation(s)
- [46] Schap, III, W. J., Barnes, P. J., Ordoñez, A., Ginsburg, A., Yonekura, Y., & Fukui, Y., HCN hyperfine ratio analysis of massive molecular clumps, March, 2017, MNRAS, 465, 2559, 3 Citation(s)
- [47] Immer, K., Kauffmann, J., Pillai, T., Ginsburg, A., & Menten, K. M., Temperature structures in Galactic Center clouds -Direct evidence for gas heating via turbulence, November, 2016, A&A, 595, A94, 19 Citation(s)
- [48] McLeod, A. F. et al., Connecting the dots: a correlation between ionising radiation and cloud mass-loss rate traced by optical integral field spectroscopy, November, 2016, MNRAS, 462, 3537, 20 Citation(s)
- [49] Galametz, M. et al., Water, methanol and dense gas tracers in the local ULIRG Arp 220: results from the new SEPIA Band 5 Science Verification campaign, October, 2016, MNRAS, 462, L36, 12 Citation(s)
- [50] Ginsburg, A. et al., Toward gas exhaustion in the W51 high-mass protoclusters, October, 2016, A&A, 595, A27, 40 Citation(s)
- [51] Lin, Y. et al., Cloud Structure of Galactic OB Cluster-forming Regions from Combining Ground- and Space-based Bolometric Observations, September, 2016, ApJ, 828, 32, 26 Citation(s)
- [52] Eisner, J. A., Bally, J. M., Ginsburg, A., & Sheehan, P. D., Protoplanetary Disks in the Orion OMC1 Region Imaged with ALMA, July, 2016, ApJ, 826, 16, 30 Citation(s)

- [53] Youngblood, A., Ginsburg, A., & Bally, J., The Orion fingers: Near-IR spectral imaging of an explosive outflow, June, 2016, AJ, 151, 173, 11 Citation(s)
- [54] Goddi, C., Ginsburg, A., & Zhang, Q., Hot ammonia around young O-type stars. III. High-mass star formation and hot core activity in W51 Main, May, 2016, A&A, 589, A44, 7 Citation(s)
- [55] Svoboda, B. E. et al., The Bolocam Galactic Plane Survey. XIV. Physical Properties of Massive Starless and Star-forming Clumps, May, 2016, ApJ, 822, 59, 44 Citation(s)
- [56] Henshaw, J. D. et al., Molecular gas kinematics within the central 250 pc of the Milky Way, April, 2016, MNRAS, 457, 2675, 106 Citation(s)
- [57] Mc Leod, A. F., Weilbacher, P. M., Ginsburg, A., Dale, J. E., Ramsay, S., & Testi, L., A nebular analysis of the central Orion nebula with MUSE, February, 2016, MNRAS, 455, 4057, 12 Citation(s)
- [58] Ginsburg, A. et al., Dense gas in the Galactic central molecular zone is warm and heated by turbulence, February, 2016, A&A, 586, A50, 108 Citation(s)
- [59] Colombo, D., Rosolowsky, E., Ginsburg, A., Duarte-Cabral, A., & Hughes, A., Graph-based interpretation of the Molecular Interstellar Medium Segmentation, December, 2015, MNRAS, 454, 2067, 37 Citation(s)
- [60] **Ginsburg**, A. et al., High-mass star-forming cloud G0.38+0.04 in the Galactic Center Dust Ridge contains H2CO and SiO masers, December, 2015, A&A, 584, L7, 23 Citation(s)
- [61] Weilbacher, P. M. et al., A MUSE map of the central Orion Nebula (M 42), October, 2015, A&A, 582, A114, 48 Citation(s)
- [62] Bally, J., Ginsburg, A., Silvia, D., & Youngblood, A., The Orion fingers: Near-IR adaptive optics imaging of an explosive protostellar outflow, July, 2015, A&A, 579, A130, 31 Citation(s)
- [63] ALMA Partnership et al., The 2014 ALMA Long Baseline Campaign: An Overview, July, 2015, ApJ, 808, L1, 72 Citation(s)
- [64] Wang, K., Testi, L., Ginsburg, A., Walmsley, C. M., Molinari, S., & Schisano, E., Large-scale filaments associated with Milky Way spiral arms, July, 2015, MNRAS, 450, 4043, 75 Citation(s)
- [65] Ellsworth-Bowers, T. P. et al., The Bolocam Galactic Plane Survey. XIII. Physical Properties and Mass Functions of Dense Molecular Cloud Structures, June, 2015, ApJ, 805, 157, 10 Citation(s)
- [66] McLeod, A. F. et al., The Pillars of Creation revisited with MUSE: gas kinematics and high-mass stellar feedback traced by optical spectroscopy, June, 2015, MNRAS, 450, 1057, 35 Citation(s)
- [67] Merello, M. et al., The Bolocam Galactic Plane Survey. XI. Temperatures and Substructure of Galactic Clumps Based On 350 μm Observations, May, 2015, ApJS, 218, 1, 14 Citation(s)
- [68] Thompson, M. et al., The ionised, radical and molecular Milky Way: spectroscopic surveys with the SKA, April, 2015, Advancing Astrophysics with the Square Kilometre Array (AASKA14), 126, 2 Citation(s)
- [69] Ellsworth-Bowers, T. P. et al., The Bolocam Galactic Plane Survey. XII. Distance Catalog Expansion Using Kinematic Isolation of Dense Molecular Cloud Structures with <sup>13</sup> CO(1-0), January, 2015, ApJ, 799, 29, 37 Citation(s)
- [70] **Ginsburg**, A. et al., The dense gas mass fraction in the W51 cloud and its protoclusters, January, 2015, A&A, 573, A106, 35 Citation(s)
- [71] Bally, J., **Ginsburg**, A., Probst, R., Reipurth, B., Shirley, Y. L., & Stringfellow, G. S., Outflows, Dusty Cores, and a Burst of Star Formation in the North America and Pelican Nebulae, December, 2014, AJ, 148, 120, 11 Citation(s)
- [72] Bally, J. et al., Absorption Filaments toward the Massive Clump G0.253+0.016, November, 2014, ApJ, 795, 28, 12 Citation(s)
- [73] Battersby, C., **Ginsburg**, A., Bally, J., Longmore, S., Dunham, M., & Darling, J., The Onset of Massive Star Formation: The Evolution of Temperature and Density Structure in an Infrared Dark Cloud, June, 2014, ApJ, 787, 113, 33 Citation(s)
- [74] Battersby, C., Bally, J., Dunham, M., **Ginsburg**, A., Longmore, S., & Darling, J., The Comparison of Physical Properties Derived from Gas and Dust in a Massive Star-forming Region, May, 2014, ApJ, 786, 116, 24 Citation(s)
- [75] Levesque, E. M., Stringfellow, G. S., **Ginsburg**, A. G., Bally, J., & Keeney, B. A., The Peculiar Balmer Decrement of SN 2009ip: Constraints on Circumstellar Geometry, January, 2014, AJ, 147, 23, 55 Citation(s)
- [76] Margutti, R. et al., A Panchromatic View of the Restless SN 2009ip Reveals the Explosive Ejection of a Massive Star Envelope, January, 2014, ApJ, 780, 21, 149 Citation(s)
- [77] Ginsburg, A., Federrath, C., & Darling, J., A Measurement of the Turbulence-driven Density Distribution in a Non-star-forming Molecular Cloud, December, 2013, ApJ, 779, 50, 26 Citation(s)
- [78] Shirley, Y. L. et al., The Bolocam Galactic Plane Survey. X. A Complete Spectroscopic Catalog of Dense Molecular Gas Observed toward 1.1 mm Dust Continuum Sources with 7.5 ≤ l ≤ 194, November, 2013, ApJS, 209, 2, 54 Citation(s)

- [79] Astropy Collaboration et al., Astropy: A community Python package for astronomy, October, 2013, A&A, 558, A33, 3334 Citation(s)
- [80] Ginsburg, A. et al., The Bolocam Galactic Plane Survey. IX. Data Release 2 and Outer Galaxy Extension, October, 2013, ApJS, 208, 14, 95 Citation(s)
- [81] Kendrew, S. et al., Early-stage Massive Star Formation near the Galactic Center: Sgr C, October, 2013, ApJ, 775, L50, 24 Citation(s)
- [82] Fallscheer, C. et al., Herschel Reveals Massive Cold Clumps in NGC 7538, August, 2013, ApJ, 773, 102, 18 Citation(s)
- [83] Ellsworth-Bowers, T. P. et al., The Bolocam Galactic Plane Survey. VIII. A Mid-infrared Kinematic Distance Discrimination Method, June, 2013, ApJ, 770, 39, 44 Citation(s)
- [84] Harvey, P. M. et al., A First Look at the Auriga-California Giant Molecular Cloud with Herschel and the CSO: Census of the Young Stellar Objects and the Dense Gas, February, 2013, ApJ, 764, 133, 39 Citation(s)
- [85] Smith, N., Arnett, W. D., Bally, J., Ginsburg, A., & Filippenko, A. V., The ring nebula around the blue supergiant SBW1: pre-explosion snapshot of an SN 1987A twin, February, 2013, MNRAS, 429, 1324, 29 Citation(s)
- [86] Bressert, E., Ginsburg, A., Bally, J., Battersby, C., Longmore, S., & Testi, L., How to Find Young Massive Cluster Progenitors, October, 2012, ApJ, 758, L28, 58 Citation(s)
- [87] Ginsburg, A., Bressert, E., Bally, J., & Battersby, C., There are No Starless Massive Proto-clusters in the First Quadrant of the Galaxy, October, 2012, ApJ, 758, L29, 75 Citation(s)
- [88] Bally, J., Youngblood, A., & **Ginsburg**, A., The Spindle: An Irradiated Disk and Bent Protostellar Jet in Orion, September, 2012, ApJ, 756, 137, 6 Citation(s)
- [89] Ginsburg, A., Bally, J., & Williams, J. P., JCMT HARP CO 3-2 observations of molecular outflows in W5, December, 2011, MNRAS, 418, 2121, 25 Citation(s)
- [90] Battersby, C. et al., Characterizing precursors to stellar clusters with Herschel, November, 2011, A&A, 535, A128, 109 Citation(s)
- [91] Ginsburg, A., Darling, J., Battersby, C., Zeiger, B., & Bally, J., Galactic H<sub>2</sub>CO Densitometry. I. Pilot Survey of Ultracompact H II Regions and Methodology, August, 2011, ApJ, 736, 149, 25 Citation(s)
- [92] Schlingman, W. M. et al., The Bolocam Galactic Plane Survey: V. HCO<sup>+</sup> and N<sub>2</sub>H<sup>+</sup> Spectroscopy of 1.1 mm Dust Continuum Sources, August, 2011, ApJS, 195, 14, 56 Citation(s)
- [93] van Aarle, E., van Winckel, H., Lloyd Evans, T., Ueta, T., Wood, P. R., & **Ginsburg**, A. G., The optically bright post-AGB population of the LMC, June, 2011, A&A, 530, A90+, 53 Citation(s)
- [94] Aguirre, J. E. et al., The Bolocam Galactic Plane Survey: Survey Description and Data Reduction, January, 2011, ApJS, 192, 4, 219 Citation(s)
- [95] Bally, J. et al., The Bolocam Galactic Plane Survey: λ = 1.1 and 0.35 mm Dust Continuum Emission in the Galactic Center Region, September, 2010, ApJ, 721, 137, 85 Citation(s)
- [96] Battersby, C. et al., An Infrared Through Radio Study of the Properties and Evolution of IRDC Clumps, September, 2010, ApJ, 721, 222, 67 Citation(s)
- [97] Yan, C.-H., Minh, Y. C., Wang, S.-Y., Su, Y.-N., & **Ginsburg**, A., Star-forming Region Sh 2-233IR. I. Deep Near-infrared Observations toward the Embedded Stellar Clusters, September, 2010, ApJ, 720, 1, 7 Citation(s)
- [98] Bally, J. et al., Herschel observations of the W43 "mini-starburst", July, 2010, A&A, 518, L90+, 51 Citation(s)
- [99] Dunham, M. K. et al., The Bolocam Galactic Plane Survey: III. Characterizing Physical Properties of Massive Star-forming Regions in the Gemini OB1 Molecular Cloud, July, 2010, ApJ, 717, 1157, 52 Citation(s)
- [100] Rosolowsky, E. et al., The Bolocam Galactic Plane Survey: II. Catalog of the Image Data, May, 2010, ApJS, 188, 123, 194 Citation(s)
- [101] Ginsburg, A. G., Bally, J., Yan, C.-H., & Williams, J. P., Outflows and Massive Stars in the Protocluster IRAS 05358+3543, December, 2009, ApJ, 707, 310, 11 Citation(s)
- [102] Rubin, D. et al., A spatially resolved study of photoelectric heating and [C II] cooling in the LMC. Comparison with dust emission as seen by SAGE, February, 2009, A&A, 494, 647, 37 Citation(s)
- [103] Stringfellow, G. S., Bally, J., & **Ginsburg**, A., Young Stellar Jets and Outflows in the Massive Star Forming Complex W5, 2009, Astrophysics and Space Science Proceedings, 13, 623, 0 Citation(s)
- [104] van de Steene, G. C., Ueta, T., van Hoof, P. A. M., Reyniers, M., & Ginsburg, A. G., Kinematics and H<sub>2</sub> morphology of the multipolar post-AGB star IRAS 16594-4656, March, 2008, A&A, 480, 775, 6 Citation(s)

The following works are submitted or recently accepted, but they are not included in the above counts:

• Lu, X., Zhang, Q., Kauffmann, J., Pillai, T., **Ginsburg**, A., Mills, E.A.C., Kruijssen, J.M.D., Longmore, S.N., Battersby, C., Liu, H.B., Gu, Q.

Star Formation Rates of Massive Molecular Clouds in the Central Molecular Zone ApJ, submitted October, 2018