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## Educational Background:

|                              |                                 |
|------------------------------|---------------------------------|
| May 9, 2013 PhD Astrophysics | University of Colorado, Boulder |
| 2009 M.S. Astrophysics       | University of Colorado, Boulder |
| 2006 B.S. Astrophysics       | Rice University                 |

## Professional Employment:

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

## Areas of Research:

- The astrophysics of massive star formation, with a focus on observations of proto-cluster clumps and massive outflows.
- 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.

## Honors/Awards:

2016 National Radio Astronomy Observatory Jansky Fellowship  
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

## Academic Advising:

| Date                     | Program   | Student          | Project  |
|--------------------------|---|------------------|--|
| Fall 2013 -<br>Fall 2016 | Ludwig-Maximilian<br>University / ESO<br>PhD Thesis Student | Anna Faye McLeod | FUSION: Comparison of hydrodynamic simulations and observations in nearby high mass star forming regions |
| Summer<br>2014           | Google Summer of<br>Code                                    | Simon Liedtke    | New tools for <b>astroquery</b> : XMatch, SkyView, Atomic Line List                                      |
| Summer<br>2013           | Google Summer of<br>Code                                    | Madhura Parikh   | A coherent API for <b>astroquery</b> , a python web database query toolkit                               |

## 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)       |

## Conferences and Workshops hosted:

| Date | Meeting Name  | Role         |
|------|---|--------------|
| 2016 | Lorentz Center workshop “Apples-to-Apples”:<br>Comparing simulations & observations | Co-organizer |
| 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 |

## Conferences and Workshops attended:

| Date | Meeting Name   | Role                       | Talk or Poster Title   |
|------|--|----------------------------|--|
| 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 in Star Cluster Formation and 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 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 Workshop (5 days)                             | Talks & unconfere-<br>nces | 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   |
| 2014 | ALMA Arc Node Retreat  | Talk                       | ALMA's first look at the extended Sgr B2 Cloud   |
| 2014 | Sexten Workshop: The Formation of Globular Clusters                  | Talk                       | The Galactic population of young massive clusters  |
| 2014 | Sexten Workshop: The assembly of massive clusters                    | Talk                       | The density of W51 and its protoclusters   |
| 2014 | Early Phase of Star Formation (EPoS 6)                               | Talk                       | The density structure of The Brick   |
| 2014 | Early Phase of Star Formation (EPoS 6)                               | Poster                     | The density structure of the W51 Giant Molecular Cloud   |
| 2013 | ISM Physical Processes in Garching                                   | Poster                     | A measurement of the turbulence driving parameter  |
| 2013 | .Astronomy 5   | Talk                       | Astroquery: A toolkit for remote data access in python   |
| 2013 | AAS 221  | Thesis Talk                | Surveying massive star formation in the Galactic Plane   |
| 2012 | Galactic Scale Star Formation  | Poster                     | There are no starless massive proto-clusters in the first quadrant                                 |
| 2012 | Labyrinth of Star Formation  | Talk                       | Surveying Pre-Stellar Gas with the BGPS (with an emphasis on what we don't see)                    |
| 2011 | Milky Way  | Talk                       | The Bolocam Galactic Plane Survey  |
| 2010 | Stars to Galaxies  | Poster                     | Star Formation in Perseus Arm Complexes  |
| 2010 | AAS 217  | Poster                     | Formaldehyde Densitometry of Dust Clumps: The shapes and densities of massive star forming regions |
| 2009 | AAS 215  | Poster                     | The Bolocam Galactic Plane Survey: Data, Early Results, and Future Directions                      |

## Selected Talks:

- 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 Virginia / NRAO Joint Colloquium      November, 2016      High-mass Star Formation in the Galaxy's Densest Environments
- ESO Lunch Talk      2013      Examining Massive Cluster Formation with H<sub>2</sub>CO 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](https://github.com/keflavich)) contains a complete list of projects. Below is a selection of my most popular packages:

- **astroquery** ([astroquery.readthedocs.org](https://astroquery.readthedocs.org)): a toolkit for querying internet-hosted astronomical databases
- **pyspeckit** ([pyspeckit.bitbucket.org](https://pyspeckit.bitbucket.org)): a software suite for visualizing and analyzing spectral line and spectral cube data
- **spectral-cube** ([spectral-cube.rtdfd.org](https://spectral-cube.rtdfd.org)): a library for the manipulation of radio spectral cube data
- **pyradex** ([github.com/keflavich/pyradex](https://github.com/keflavich/pyradex)): an object-oriented frontend to the popular RADEX radiative transfer code and its peers
- **image-registration** ([github.com/keflavich/image\\_registration](https://github.com/keflavich/image_registration)): a package designed to determine and correct the offsets between images containing only diffuse emission
- **sdpy** (<https://github.com/keflavich/sdpy>): “Single-Dish python”, a package to support single dish heterodyne data reduction and build data pipelines

## Service:

- 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*
  - *Revista Mexicana de Astronomía y Astrofísica*
- Panel chair for a recent 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 **montage** ([montage.ipac.caltech.edu](https://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

## 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)

## Major telescope time allocations as PI:

| Telescope              | Title   | Time                   | Status                            |
|------------------------|---|------------------------|-----------------------------------|
| <b>GBT</b><br>2016     | GBT17A-195: MUSTANG Galactic Plane survey pilot: Protoclusters & Massive Stars  | 31 hours               | Approved                          |
| <b>VLA</b><br>2016     | VLA16B-202: Disks and Outflows around O-type stars in W51   | 16 hours               | Approved                          |
| <b>ALMA</b><br>2016    | Cycle 4: 2016.1.00620.S: The core mass function and its evolution in an extreme protocluster  | 10 hours               | Approved                          |
| <b>ALMA</b><br>2016    | Cycle 4: 2016.1.00550.S: (How) do very massive stars form in our Galaxy?  | 7.5 hours              | Approved                          |
| <b>ALMA</b><br>2015    | Cycle 3: 2015.1.00262.S: Digging for rusty bullets at an explosion site   | 1.9 hours              | Approved                          |
| <b>GBT</b><br>2015     | GBT/15B-129: Measuring the gas density along the CMZ dust ridge   | 13.5 hours             | Approved,<br>never<br>observed    |
| <b>ATCA</b><br>2015    | C3045: Geometry of clouds and HII regions in the CMZ using H2CO   | 84 hours               | Published<br>2015A&A...584L...7G  |
| <b>VLA</b><br>2014     | VLA15A-164: Studying turbulence through the atomic-to-molecular transition  | 3.3 hours              | Observed                          |
| <b>GBT</b><br>2014     | GBT14A-329: MUSTANG Galactic Plane survey: HCHII in the brightest massive proto-clusters  | 14 hours               | Approved,<br>never<br>observed    |
| <b>ALMA</b><br>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              | Observed<br>(2015)                |
| <b>ALMA</b><br>2014    | Cycle 2: 2013.1.00269.S: Sgr B2 - The Proving Ground for Star Formation Theories  | 6 hours                | Observed<br>(2015)                |
| <b>APEX</b><br>2014    | H2CO Thermometry of the CMZ to understand its low star formation rate   | 250 hours              | Published:<br>2016A&A...586A..50G |
| <b>EVLA</b><br>2013    | 13A/064: Massive stars and ionized gas in the W51 complex   | 13 hours,<br>4 configs | Published:<br>2016A&A...595A..27G |
| <b>Arecibo</b><br>2012 | A2854: Density Map of the W51 Giant Molecular Cloud complex   | 13 hours               | Published:<br>2015A&A...573A.106G |
| <b>GBT</b><br>2010     | GBT10B-019: Densitometry of young star-forming complexes throughout the Galaxy  | 120 hours              | Published:<br>2013ApJ...779...50G |
| <b>Arecibo</b><br>2010 | A2584: Densitometry of young star-forming complexes throughout the Galaxy   | 60 hours               | Published:<br>2013ApJ...779...50G |
| <b>GBT</b><br>2009     | GBT09C-049: Measuring the dense gas mass fraction with H2CO absorption  | 4 hours                | Published:<br>2011ApJ...736..149G |

## Refereed Publications as of November 23, 2016 [10 first author, 54 total]:

- [1] 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
- [2] Galametz, M., Zhang, Z.-Y., Immer, K., Humphreys, E., Aladro, R., De Breuck, C., **Ginsburg**, A., Madden, S. C., Møller, P., & Arumugam, V., *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
- [3] **Ginsburg**, A., Goss, W. M., Goddi, C., Galván-Madrid, R., Dale, J. E., Bally, J., Battersby, C. D., Youngblood, A., Sankrit, R., Smith, R., Darling, J., Kruijssen, J. M. D., & Liu, H. B., *Toward gas exhaustion in the W51 high-mass protoclusters*, October, 2016, A&A, 595, A27
- [4] Lin, Y., Liu, H. B., Li, D., Zhang, Z.-Y., **Ginsburg**, A., Pineda, J. E., Qian, L., Galván-Madrid, R., McLeod, A. F., Rosolowsky, E., Dale, J. E., Immer, K., Koch, E., Longmore, S., Walker, D., & Testi, L., *Cloud Structure of Galactic OB Cluster-forming Regions from Combining Ground- and Space-based Bolometric Observations*, September, 2016, ApJ, 828, 32
- [5] 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
- [6] McLeod, A. F., Gritschneider, M., Dale, J. E., **Ginsburg**, A., Klaassen, P. D., Mottram, J. C., Preibisch, T., Ramsay, S., Reiter, M., & Testi, L., *Connecting the dots: a correlation between ionising radiation and cloud mass-loss rate traced by optical integral field spectroscopy*, July, 2016, ArXiv:1608.00005v1
- [7] Youngblood, A., **Ginsburg**, A., & Bally, J., *The Orion fingers: Near-IR spectral imaging of an explosive outflow*, June, 2016, AJ, 151, 173
- [8] Svoboda, B. E., Shirley, Y. L., Battersby, C., Rosolowsky, E. W., **Ginsburg**, A. G., Ellsworth-Bowers, T. P., Pestalozzi, M. R., Dunham, M. K., Evans, II, N. J., Bally, J., & Glenn, J., *The Bolocam Galactic Plane Survey. XIV. Physical Properties of Massive Starless and Star-forming Clumps*, May, 2016, ApJ, 822, 59
- [9] Henshaw, J. D., Longmore, S. N., Kruijssen, J. M. D., Davies, B., Bally, J., Barnes, A., Battersby, C., Burton, M., Cunningham, M. R., Dale, J. E., **Ginsburg**, A., Immer, K., Jones, P. A., Kendrew, S., Mills, E. A. C., Molinari, S., Moore, T. J. T., Ott, J., Pillai, T., Rathborne, J., Schilke, P., Schmiedeke, A., Testi, L., Walker, D., Walsh, A., & Zhang, Q., *Molecular gas kinematics within the central 250 pc of the Milky Way*, April, 2016, MNRAS, 457, 2675
- [10] McLeod, A. F., Weillbacher, 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
- [11] **Ginsburg**, A., Henkel, C., Ao, Y., Riquelme, D., Kauffmann, J., Pillai, T., Mills, E. A. C., Requena-Torres, M. A., Immer, K., Testi, L., Ott, J., Bally, J., Battersby, C., Darling, J., Aalto, S., Stanke, T., Kendrew, S., Kruijssen, J. M. D., Longmore, S., Dale, J., Guesten, R., & Menten, K. M., *Dense gas in the Galactic central molecular zone is warm and heated by turbulence*, February, 2016, A&A, 586, A50
- [12] 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
- [13] **Ginsburg**, A., Walsh, A., Henkel, C., Jones, P. A., Cunningham, M., Kauffmann, J., Pillai, T., Mills, E. A. C., Ott, J., Kruijssen, J. M. D., Menten, K. M., Battersby, C., Rathborne, J., Contreras, Y., Longmore, S., Walker, D., & Dawson, J., *High-mass star-forming cloud G0.38+0.04 in the Galactic Center Dust Ridge contains H<sub>2</sub>CO and SiO masers*, December, 2015, A&A, 584, L7
- [14] 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
- [15] **ALMA Partnership**, Fomalont, E. B., Vlahakis, C., Corder, S., Remijan, A., Barkats, D., Lucas, R., Hunter, T. R., Brogan, C. L., Asaki, Y., & et al., *The 2014 ALMA Long Baseline Campaign: An Overview*, July, 2015, ApJ, 808, L1
- [16] 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
- [17] Ellsworth-Bowers, T. P., Glenn, J., Riley, A., Rosolowsky, E., **Ginsburg**, A., Evans, II, N. J., Bally, J., Battersby, C., Shirley, Y. L., & Merello, M., *The Bolocam Galactic Plane Survey. XIII. Physical Properties and Mass Functions of Dense Molecular Cloud Structures*, June, 2015, ApJ, 805, 157
- [18] McLeod, A. F., Dale, J. E., **Ginsburg**, A., Ercolano, B., Gritschneider, M., Ramsay, S., & Testi, L., *The Pillars of Creation revisited with MUSE: gas kinematics and high-mass stellar feedback traced by optical spectroscopy*, June, 2015, MNRAS, 450, 1057
- [19] Merello, M., Evans, II, N. J., Shirley, Y. L., Rosolowsky, E., **Ginsburg**, A., Bally, J., Battersby, C., & Dunham, M. M., *The Bolocam Galactic Plane Survey. XI. Temperatures and Substructure of Galactic Clumps Based On 350  $\mu$ m Observations*, May, 2015, ApJS, 218, 1

- [20] Ellsworth-Bowers, T. P., Rosolowsky, E., Glenn, J., **Ginsburg**, A., Evans, II, N. J., Battersby, C., Shirley, Y. L., & Svoboda, B., *The Bolocam Galactic Plane Survey. XII. Distance Catalog Expansion Using Kinematic Isolation of Dense Molecular Cloud Structures with  $^{13}\text{CO}(1-0)$* , January, 2015, ApJ, 799, 29
- [21] **Ginsburg**, A., Bally, J., Battersby, C., Youngblood, A., Darling, J., Rosolowsky, E., Arce, H., & Lebrón Santos, M. E., *The dense gas mass fraction in the W51 cloud and its protoclusters*, January, 2015, A&A, 573, A106
- [22] 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
- [23] Bally, J., Rathborne, J. M., Longmore, S. N., Jackson, J. M., Alves, J. F., Bressert, E., Contreras, Y., Foster, J. B., Garay, G., **Ginsburg**, A., Johnston, K. G., Kruijssen, J. M. D., Testi, L., & Walsh, A. J., *Absorption Filaments toward the Massive Clump G0.253+0.016*, November, 2014, ApJ, 795, 28
- [24] 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
- [25] 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
- [26] 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
- [27] Margutti, R., Milisavljevic, D., Soderberg, A. M., Chornock, R., Zauderer, B. A., Murase, K., Guidorzi, C., Sanders, N. E., Kuin, P., Fransson, C., Levesque, E. M., Chandra, P., Berger, E., Bianco, F. B., Brown, P. J., Challis, P., Chatzopoulos, E., Cheung, C. C., Choi, C., Chomiuk, L., Chugai, N., Contreras, C., Drout, M. R., Fesen, R., Foley, R. J., Fong, W., Friedman, A. S., Gall, C., Gehrels, N., Hjorth, J., Hsiao, E., Kirshner, R., Im, M., Leloudas, G., Lunnan, R., Marion, G. H., Martin, J., Morrell, N., Neugent, K. F., Omodei, N., Phillips, M. M., Rest, A., Silverman, J. M., Strader, J., Stritzinger, M. D., Szalai, T., Utterback, N. B., Vinko, J., Wheeler, J. C., Arnett, D., Campana, S., Chevalier, R., **Ginsburg**, A., Kamble, A., Roming, P. W. A., Pritchard, T., & Stringfellow, G., *A Panchromatic View of the Restless SN 2009ip Reveals the Explosive Ejection of a Massive Star Envelope*, January, 2014, ApJ, 780, 21
- [28] **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
- [29] Shirley, Y. L., Ellsworth-Bowers, T. P., Svoboda, B., Schlingman, W. M., **Ginsburg**, A., Rosolowsky, E., Gerner, T., Mairs, S., Battersby, C., Stringfellow, G., Dunham, M. K., Glenn, J., & Bally, J., *The Bolocam Galactic Plane Survey. X. A Complete Spectroscopic Catalog of Dense Molecular Gas Observed toward 1.1 mm Dust Continuum Sources with  $7.5 \leq l \leq 194$* , November, 2013, ApJS, 209, 2
- [30] Astropy Collaboration, Robitaille, T. P., Tollerud, E. J., Greenfield, P., Droettboom, M., Bray, E., Aldcroft, T., Davis, M., **Ginsburg**, A., Price-Whelan, A. M., Kerzendorf, W. E., Conley, A., Crighton, N., Barbary, K., Muna, D., Ferguson, H., Grolier, F., Parikh, M. M., Nair, P. H., Unther, H. M., Deil, C., Woillez, J., Conseil, S., Kramer, R., Turner, J. E. H., Singer, L., Fox, R., Weaver, B. A., Zabalza, V., Edwards, Z. I., Azalee Bostroem, K., Burke, D. J., Casey, A. R., Crawford, S. M., Dencheva, N., Ely, J., Jenness, T., Labrie, K., Lim, P. L., Pierfederici, F., Pontzen, A., Ptak, A., Refsdal, B., Servillat, M., & Streicher, O., *Astropy: A community Python package for astronomy*, October, 2013, A&A, 558, A33
- [31] **Ginsburg**, A., Glenn, J., Rosolowsky, E., Ellsworth-Bowers, T. P., Battersby, C., Dunham, M., Merello, M., Shirley, Y., Bally, J., Evans, II, N. J., Stringfellow, G., & Aguirre, J., *The Bolocam Galactic Plane Survey. IX. Data Release 2 and Outer Galaxy Extension*, October, 2013, ApJS, 208, 14
- [32] Kendrew, S., **Ginsburg**, A., Johnston, K., Beuther, H., Bally, J., Cyganowski, C. J., & Battersby, C., *Early-stage Massive Star Formation near the Galactic Center: Sgr C*, October, 2013, ApJ, 775, L50
- [33] Fallscheer, C., Reid, M. A., Di Francesco, J., Martin, P. G., Hill, T., Hennemann, M., Nguyen-Luong, Q., Motte, F., Men'shchikov, A., André, P., Ward-Thompson, D., Griffin, M., Kirk, J., Konyves, V., Rygl, K. L. J., Sadavoy, S., Sauvage, M., Schneider, N., Anderson, L. D., Benedettini, M., Bernard, J.-P., Bontemps, S., **Ginsburg**, A., Molinari, S., Polychroni, D., Rivera-Ingraham, A., Roussel, H., Testi, L., White, G., Williams, J. P., Wilson, C. D., Wong, M., & Zavagno, A., *Herschel Reveals Massive Cold Clumps in NGC 7538*, August, 2013, ApJ, 773, 102
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