Dr. Adam G. Ginsburg

Jansky Fellow, National Radio Astronomy Observatory

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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 |
|-------------|-----------------------------|---|
| | | 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, with a focus on observations of proto-cluster clumps and massive
- 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 | |
|--------------------------|---|---------------------|--|--|
| 2017-2018 | PhD Student | Natalie Butterfield | Cloud Kinematics and Geometry in the Central Molecular Zone | |
| Summer 2017 | NRAO Summer Student | Virginie Montes | The ionized jet IRAS 16562-3959 | |
| Summer 2017 | NRAO REU Student | Terry Melo | A symmetric ionized and molecular jet in $W51$ | |
| Fall 2013 - Fall 2016 | Ludwig-Maximilian University / ESO PhD Thesis Student | Anna Faye McLeod | FUSION: Comparison of hydrodynamic simulations and observations in nearby high mass star forming regions | |
| Summer 2015 | ESO Summer Student | Dinos Kousidis | Merging astropy tools into pyspeckit | |
| Summer 2014 | Google Summer of Code | Simon Liedtke | New tools for astroquery: XMatch, SkyView, Atomic Line List | |
| Summer 2013 | Google Summer of Code | Madhura Parikh | A coherent API for astroquery, 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) | | |
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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 |

Selected Conferences and Workshops attended:

| Date | Meeting Name | Role | Talk or Poster Title |
|------|--|-----------------------|--|
| 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 |
| 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 & 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 |
| 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 |

Selected Institute Talks:

| • | UNM Colloquium | 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 | $\operatorname{High-mass}$ Star Formation in the Galaxy's Densest Environments | |
| • | Herzberg Institute Colloquium | November, 2016 | $\operatorname{High-mass}$ Star Formation in the Galaxy's Densest Environments | |
| • | University of Virigina / NRAO Joint Colloquium | November, 2016 | $\operatorname{High-mass}$ 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
- 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
- Served on the SOFIA TAC
- 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) 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)

Selected telescope time allocations as PI:

| Telescope | Title | Time | Status |
|---------------------|---|------------------------|---------------------------------|
| ALMA 2017 | Cycle 5: 2017.1.01335.L (co-PI): ALMA-IMF: ALMA transforms our view of the origin of stellar masses | 64 hours | Approved |
| ALMA 2017 | Cycle 5: 2017.1.00293.S: Characterizing the accretion structures around the HMYSOs in W51 $$ | 8 hours | Approved |
| ALMA 2017 | Cycle 5: 2017.1.00114.S: Probing low-mass star formation in the CMZ in Sgr B2 Deep South | 14 hours | Approved |
| ALMA 2017 | Cycle 5: 2017.1.00008.S: The core mass function and its evolution in an extreme protocluster | 10 hours | Approved |
| GBT 2016 | GBT17A-195: MUSTANG Galactic Plane survey pilot: Protoclusters & Massive Stars | 31 hours | Approved, never observed |
| VLA 2016 | VLA16B-202: Disks and Outflows around O-type stars in W51 $$ | 16 hours | Approved, partly observed |
| ALMA 2016 | Cycle 4: 2016.1.00620.S: The core mass function and its evolution in an extreme protocluster | 10 hours | Approved, partly Observed |
| ALMA 2016 | Cycle 4: $2016.1.00550.S$: (How) do very massive stars form in our Galaxy? | 7.5 hours | Observed |
| ALMA 2015 | Cycle 3: $2015.1.00262.S$: Digging for rusty bullets at an explosion site | 1.9 hours | Observed |
| ATCA 2015 | C3045: Geometry of clouds and HII regions in the CMZ using H2CO $$ | 84 hours | Published 2015A&A584L7G |
| GBT 2014 | GBT14A-329: MUSTANG Galactic Plane survey: HCHIIs in the brightest massive proto-clusters (resubmitted as GBT17A-195) | 14 hours | Approved, never observed |
| ALMA 2014 | Cycle 2: 2013.1.00308.S: Gas temperature and kinematics as key inputs for star formation theory: Cores and turbulence in the massive protocluster W51 | 2.4 hours | Published: 2017ApJ84292G |
| ALMA 2014 | Cycle 2: 2013.1.00269.S: Sgr B2 - The Proving Ground for Star Formation Theories | 6 hours | Observed (2015), submitted |
| APEX 2014 | $\ensuremath{\mathrm{H2CO}}$ Thermometry of the CMZ to understand its low star formation rate | 250 hours | Published: 2016A&A586A50G |
| EVLA 2013 | 13A/064: Massive stars and ionized gas in the W51 complex | 13 hours, 4 configs | Published: 2016A&A595A27G |
| Arecibo 2012 | A2854: Density Map of the W51 Giant Molecular Cloud complex | 13 hours | Published: 2015A&A573A.106G |
| GBT 2010 | GBT10B-019: Densitometry of young star-forming complexes throughout the Galaxy | 120 hours | Published: 2013ApJ77950G |
| Arecibo 2010 | A2584: Densitometry of young star-forming complexes throughout the Galaxy | 60 hours | Published: 2013ApJ77950G |
| GBT 2009 | GBT09C-049: Measuring the dense gas mass fraction with H2CO absorption $$ | 4 hours | Published: 2011ApJ736149G |

Refereed Publications as of November 6, 2017 [10 first author, 60 total]:

- [1] Sánchez-Monge, Á., Schilke, P., Schmiedeke, A., **Ginsburg**, A., Cesaroni, R., Lis, D. C., Qin, S.-L., Müller, H. S. P., Bergin, E., Comito, C., & Möller, T., The physical and chemical structure of Sagittarius B2. II. Continuum millimeter emission of Sgr B2(M) and Sgr B2(N) with ALMA, July, 2017, A&A, 604, A6
- [2] Ginsburg, A., Goddi, C., Kruijssen, J. M. D., Bally, J., Smith, R., Galván-Madrid, R., Mills, E. A. C., Wang, K., Dale, J. E., Darling, J., Rosolowsky, E., Loughnane, R., Testi, L., & Bastian, N., Thermal Feedback in the High-mass Star- and Cluster-forming Region W51, June, 2017, ApJ, 842, 92
- [3] Lu, X., Zhang, Q., Kauffmann, J., Pillai, T., Longmore, S. N., Kruijssen, J. M. D., Battersby, C., Liu, H. B., Ginsburg, A., Mills, E. A. C., Zhang, Z.-Y., & Gu, Q., The Molecular Gas Environment in the 20 km s⁻¹ Cloud in the Central Molecular Zone, April, 2017, ApJ, 839, 1
- [4] 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
- [5] Bally, J., Ginsburg, A., Arce, H., Eisner, J., Youngblood, A., Zapata, L., & Zinnecker, H., The ALMA View of the OMC1 Explosion in Orion, January, 2017, ArXiv e-prints
- [6] Schuller, F., Csengeri, T., Urquhart, J. S., Duarte-Cabral, A., Barnes, P. J., Giannetti, A., Hernandez, A. K., Leurini, S., Mattern, M., Medina, S.-N. X., Agurto, C., Azagra, F., Anderson, L. D., Beltrán, M. T., Beuther, H., Bontemps, S., Bronfman, L., Dobbs, C. L., Dumke, M., Finger, R., Ginsburg, A., Gonzalez, E., Henning, T., Kauffmann, J., Mac-Auliffe, F., Menten, K. M., Montenegro-Montes, F. M., Moore, T. J. T., Muller, E., Parra, R., Perez-Beaupuits, J.-P., Pettitt, A., Russeil, D., Sánchez-Monge, Á., Schilke, P., Schisano, E., Suri, S., Testi, L., Torstensson, K., Venegas, P., Wang, K., Wienen, M., Wyrowski, F., & Zavagno, A., SEDIGISM: Structure, excitation, and dynamics of the inner Galactic interstellar medium, January, 2017, ArXiv e-prints
- [7] 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
- [8] 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
- [9] 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
- [10] 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
- [11] 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
- [12] McLeod, A. F., Gritschneder, 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
- [13] Youngblood, A., Ginsburg, A., & Bally, J., The Orion fingers: Near-IR spectral imaging of an explosive outflow, June, 2016, AJ, 151, 173
- [14] 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
- [15] 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
- [16] 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
- [17] 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
- [18] 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

- [19] 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., Highmass star-forming cloud G0.38+0.04 in the Galactic Center Dust Ridge contains H2CO and SiO masers, December, 2015, A&A, 584, L7
- [20] 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
- [21] 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
- [22] 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
- [23] 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
- [24] McLeod, A. F., Dale, J. E., Ginsburg, A., Ercolano, B., Gritschneder, 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
- [25] 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 μm Observations, May, 2015, ApJS, 218, 1
- [26] 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 CO(1-0), January, 2015, ApJ, 799, 29
- [27] 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
- [28] 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
- [29] 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
- [30] 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
- [31] 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
- [32] 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
- [33] 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
- [34] 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
- [35] 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 ≤ l ≤ 194, November, 2013, ApJS, 209, 2
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