

# Onsala Space Observatory, Chalmers

## Publication list 2015

Compiled by Magnus Thomasson

Publications in refereed journals 2015 enabled by the Onsala infrastructure are recorded below.

[Astronomy: Onsala 20 m telescope \(single-dish\)](#)

[Astronomy: APEX](#)

[Astronomy: ALMA](#)

[Astronomy: VLBI](#)

[Astronomy: LOFAR](#)

[Geoscience](#)

### **Astronomy: Onsala 20 m telescope (single-dish)**

*New observations and models of circumstellar CO line emission of AGB stars in the Herschel SUCCESS programme.*

T. Danilovich, D. Teyssier, K. Justtanont, H. Olofsson, L. Cerrigone, V. Bujarrabal, J. Alcolea, J. Cernicharo, A. Castro-Carrizo, P. García-Lario, and A. Marston.  
Astron. Astrophys. 581, A60 (2015)

*A  $^{13}\text{CO}$  Survey of Intermediate-mass Star-forming Regions.*

Michael J. Lundquist, Henry A. Kobulnicky, Charles R. Kerton, and Kim Arvidsson.  
The Astrophysical Journal, 806:40 (2015)

*Herschel-HIFI observations of  $\text{H}_2\text{O}$ ,  $\text{NH}_3$ , and  $\text{N}_2\text{H}^+$  toward high-mass starless and protostellar clumps identified by the Hi-GAL survey.*

L. Olmi, C. M. Persson, and C. Codella.  
Astron. Astrophys. 583, A125 (2015)

*The physical state of selected cold clumps.*

A. Parikka, M. Juvela, V.-M. Pelkonen, J. Malinen, and J. Harju.  
Astron. Astrophys. 577, A69 (2015)

*Not a galaxy: IRAS 04186+5143, a new young stellar cluster in the outer Galaxy.*

J. L. Yun, Davide Elia, A. A. Djupvik, J. M. Torrelles and S. Molinari.  
Mon. Not. R. Astron. Soc. 452, 1523–1534 (2015)

## **Astronomy: APEX**

Publications from all APEX partner's observing time.

*Relationship between the column density distribution and evolutionary class of molecular clouds as viewed by ATLASGAL.*

Abreu-Vicente, J., Kainulainen, J., Stutz, A., Henning, Th., Beuther, H.  
A&A 581 A74 (2015)

*Tightening the belt: Constraining the mass and evolution in SDC335.*

Avison, A., Peretto, N., Fuller, G. A., Duarte-Cabral, A., Traficante, A., Pineda, J. E.  
A&A 577 A30 (2015)

*Evolution of the dust emission of massive galaxies up to  $z = 4$  and constraints on their dominant mode of star formation.*

B  thermin, Matthieu, Daddi, Emanuele, Magdis, Georgios, Lagos, Claudia, Sargent, Mark, Albrecht, Marcus, Aussel, Herv  , Bertoldi, Frank, Buat, V  ronique, Galametz, Maud, Heinis, S  bastien, Ilbert, Olivier, Karim, Alexander, Koekemoer, Anton, Lacey, Cedric, Le Floc'h, Emeric, Navarrete, Felipe, Pannella, Maurilio, Schreiber, Corentin, Smol  i  , Vernesa, Symeonidis, Myrto, Viero, Marco  
A&A 573 A113 (2015)

*Restarting radio activity and dust emission in radio-loud broad absorption line quasars.*

Bruni, G., Mack, K.-H., Montenegro-Montes, F. M., Brienza, M., Gonz  lez-Serrano, J. I.  
A&A 582 A9 (2015)

*A near-infrared spectroscopic survey of massive jets towards extended green objects.*

Caratti o Garatti, A., Stecklum, B., Linz, H., Garcia Lopez, R., Sanna, A.  
A&A 573 A82 (2015)

*Star formation around the mid-infrared bubble CN 148.*

Dewangan, L. K., Ojha, D. K., Grave, J. M. C., Mallick, K. K.  
MNRAS 446 2640-2658 (2015)

*Massive Young Stellar Object W42-MME: the Discovery of an Infrared Jet Using VLT/NACO Near-infrared Images.*

Dewangan, L. K., Mayya, Y. D., Luna, A., Ojha, D. K.  
ApJ 803, 100 (2015)

*The Physical Environment of the Massive Star-forming Region W42.*

Dewangan, L. K., Luna, A., Ojha, D. K., Anandarao, B. G., Mallick, K. K., Mayya, Y. D.  
ApJ 811, 79 (2015)

*870  $\mu\text{m}$  continuum observations of the bubble-shaped nebula Gum 31.*

Duronea, N. U., Vasquez, J., G  mez, L., Cappa, C. E., Firpo, V., L  pez-Caraballo, C. H., Rubio, M.  
A&A 582 A2 (2015)

*Smoke in the Pipe Nebula: dust emission and grain growth in the starless core FeSt 1-457.*  
Forbrich, Jan, Lada, Charles J., Lombardi, Marco, Román-Zúñiga, Carlos, Alves, João  
A&A 580 A114 (2015)

*Squeezed between shells? The origin of the Lupus I molecular cloud. APEX/LABOCA, Herschel, and Planck observations.*  
Gaczkowski, B., Preibisch, T., Stanke, T., Krause, M. G. H., Burkert, A., Diehl, R., Fierlinger, K., Kroell, D., Ngoumou, J., Roccatagliata, V.  
A&A 584 A36 (2015)

*G305.136+0.068: A Massive and Dense Cold Core in an Early Stage of Evolution.*  
Garay, Guido, Mardones, Diego, Contreras, Yanett, Pineda, Jaime E., Servajean, Elise, Guzmán, Andrés E.  
ApJ 799, 75 (2015)

*Chemical evolution in the early phases of massive star formation. II. Deuteration.*  
Gerner, T., Shirley, Y. L., Beuther, H., Semenov, D., Linz, H., Albertsson, T., Henning, Th.  
A&A 579 A80 (2015)

*Infrared dark clouds on the far side of the Galaxy.*  
Giannetti, A., Wyrowski, F., Leurini, S., Urquhart, J., Csengeri, T., Menten, K. M., Bronfman, L., van der Tak, F. F. S.  
A&A 580 L7 (2015)

*High-lying OH absorption, [C II] deficits, and extreme  $L_{\text{FIR}}/M_{\text{H}_2}$  ratios in galaxies.*  
E. González-Alfonso, J. Fischer, E. Sturm, J. Graciá-Carpio, S. Veilleux, M. Meléndez, D. Lutz, A. Poglitsch, S. Aalto, N. Falstad, H. W. W. Spoon, D. Farrah, A. Blasco, C. Henkel, A. Contursi, A. Verma, M. Spaans, H. A. Smith, M. L. N. Ashby, S. Hailey-Dunsheath, S. García-Burillo, J. Martín-Pintado, P. van der Werf, R. Meijerink, and R. Genzel.  
The Astrophysical Journal, 800:69 (2015)

*The nature of the [C II] emission in dusty star-forming galaxies from the SPT survey.*  
Gullberg, B., De Breuck, C., Vieira, J. D., Weiß, A., Aguirre, J. E., Aravena, M., Béthermin, M., Bradford, C. M., Bothwell, M. S., Carlstrom, J. E., Chapman, S. C., Fassnacht, C. D., Gonzalez, A. H., Greve, T. R., Hezaveh, Y., Holzappel, W. L., Husband, K., Ma, J., Malkan, M., Marrone, D. P., Menten, K., Murphy, E. J., Reichardt, C. L., Spilker, J. S., Stark, A. A., Strandet, M., Welikala, N.  
MNRAS 449 2883-2900 (2015)

*Impacts of pure shocks in the BHR71 bipolar outflow.*  
Gusdorf, A., Riquelme, D., Anderl, S., Eisloffel, J., Codella, C., Gómez-Ruiz, A. I., Graf, U. U., Kristensen, L. E., Leurini, S., Parise, B., Requena-Torres, M. A., Ricken, O., Güsten, R.  
A&A 575 A98 (2015)

*Far-infrared Dust Temperatures and Column Densities of the MALT90 Molecular Clump Sample.*  
Guzmán, Andrés E., Sanhueza, Patricio, Contreras, Yanett, Smith, Howard A., Jackson, James M., Hoq, Sadia, Rathborne, Jill M.  
ApJ 815, 130 (2015)

*Chemical features in the circumnuclear disk of the Galactic center.*

N. Harada, D. Riquelme, S. Viti, I. Jiménez-Serra, M. A. Requena-Torres, K. M. Menten, S. Martín, R. Aladro, J. Martín-Pintado, and S. Hochgürtel.  
Astron. Astrophys. 584, A102 (2015)

*Infall motions in massive star-forming regions: results from years 1 and 2 of the MALT90 survey.*

He, Yu-Xin, Zhou, Jian-Jun, Esimbek, Jarken, Ji, Wei-Guang, Wu, Gang, Tang, Xin-Di, Yuan, Ye, Li, Da-Lei, Baan, W. A.  
MNRAS 450 1926-1936 (2015)

*The Gould Belt 'MISFITS' Survey: The Real Solar Neighborhood Protostars.*

Heiderman, Amanda, Evans, Neal J., II  
ApJ 806, 231 (2015)

*Star formation rates from young-star counts and the structure of the ISM across the NGC 346/N66 complex in the SMC.*

Hony, S., Gouliermis, D. A., Galliano, F., Galametz, M., Cormier, D., Chen, C.-H. R., Dib, S., Hughes, A., Klessen, R. S., Roman-Duval, J., Smith, L., Bernard, J.-P., Bot, C., Carlson, L., Gordon, K., Indebetouw, R., Lebouteiller, V., Lee, M.-Y., Madden, S. C., Meixner, M., Oliveira, J., Rubio, M., Sauvage, M., Wu, R.  
MNRAS 448 1847-1862 (2015)

*Massive envelopes and filaments in the NGC 3603 star forming region.*

Hummel, C. A., Stanke, T., Galván-Madrid, R., Koribalski, B. S.  
A&A 582 A66 (2015)

*Molecular depletion times and the CO-to-H<sub>2</sub> conversion factor in metal-poor galaxies.*

Hunt, L. K., García-Burillo, S., Casasola, V., Caselli, P., Combes, F., Henkel, C., Lundgren, A., Maiolino, R., Menten, K. M., Testi, L., Weiss, A.  
A&A 583 A114 (2015)

*A Keplerian-like Disk around the Forming O-type Star AFGL 4176.*

Johnston, Katharine G., Robitaille, Thomas P., Beuther, Henrik, Linz, Hendrik, Boley, Paul, Kuiper, Rolf, Keto, Eric, Hoare, Melvin G., van Boekel, Roy  
ApJ 813 L19 (2015)

*Nuclear ashes and outflow in the eruptive star Nova Vul 1670.*

Kamiński, Tomasz, Menten, Karl M., Tylenda, Romuald, Hajduk, Marcin, Patel, Nimesh A., Kraus, Alexander  
Nature 520 322-324 (2015)

*The Milky Way Project: What are Yellowballs?*

Kerton, C. R., Wolf-Chase, G., Arvidsson, K., Lintott, C. J., Simpson, R. J.  
ApJ 799, 153 (2015)

*The Role of Star Formation and an AGN in Dust Heating of  $z = 0.3-2.8$  Galaxies. I. Evolution with Redshift and Luminosity.*

Kirkpatrick, Allison, Pope, Alexandra, Sajina, Anna, Roebuck, Eric, Yan, Lin, Armus, Lee, Díaz-Santos, Tanio, Stierwalt, Sabrina  
ApJ 814, 9 (2015)

*Multitechnique testing of the viscous accretion disk model. I. The stable and tenuous disk of the late-type Be star  $\beta$  CMi.*

Klement, R., Carciofi, A. C., Rivinius, Th., Panoglou, D., Vieira, R. G., Bjorkman, J. E., Štefl, S., Tycner, C., Faes, D. M., Korčáková, D., Müller, A., Zavala, R. T., Curé, M.  
A&A 584 A85 (2015)

*The relationship between CO emission and visual extinction traced by dust emission in the Magellanic Clouds.*

Lee, Cheoljong, Leroy, Adam K., Schnee, Scott, Wong, Tony, Bolatto, Alberto D., Indebetouw, Remy, Rubio, Monica  
MNRAS 450 2708-2726 (2015)

*Spectroscopically resolved far-IR observations of the massive star-forming region G5.89-0.39.*

Leurini, S., Wyrowski, F., Wiesemeyer, H., Gusdorf, A., Güsten, R., Menten, K. M., Gerin, M., Levrier, F., Hübbers, H. W., Jacobs, K., Ricken, O., Richter, H.  
A&A 584 A70 (2015)

*Probing the effects of external irradiation on low-mass protostars through unbiased line surveys.*

Lindberg, J. E., Jørgensen, J. K., Watanabe, Y., Bisschop, S. E., Sakai, N., Yamamoto, S.  
A&A 584 A28 (2015)

*The Atacama Cosmology Telescope: The LABOCA/ACT Survey of Clusters at All Redshifts.*

Lindner, Robert R., Aguirre, Paula, Baker, Andrew J., Bond, J. Richard, Crichton, Devin, Devlin, Mark J., Essinger-Hileman, Thomas, Gallardo, Patricio, Gralla, Megan B., Hilton, Matt, Hincks, Adam D., Huffenberger, Kevin M., Hughes, John P., Infante, Leopoldo, Lima, Marcos, Marriage, Tobias A., Menanteau, Felipe, Niemack, Michael D., Page, Lyman A., Schmitt, Benjamin L., Sehgal, Neelima, Sievers, J. L., Sifón, Cristóbal, Staggs, Suzanne T., Swetz, Daniel, Weiß, Axel, Wollack, Edward J.  
ApJ 803, 79 (2015)

*Search for HOOH in Orion.*

R. Liseau and B. Larsson.  
Astron. Astrophys. 583, A53 (2015)

*Gas and dust in the star-forming region  $\rho$  Oph A. The dust opacity exponent  $\beta$  and the gas-to-dust mass ratio  $g_{2d}$ .*

R. Liseau, B. Larsson, T. Lunttila, M. Olberg, G. Rydbeck, P. Bergman, K. Justtanont, G. Olofsson, and B. L. de Vries.  
Astron. Astrophys. 578, A131 (2015)

*A 13CO Survey of Intermediate-mass Star-forming Regions.*

Lundquist, Michael J., Kobulnicky, Henry A., Kerton, Charles R., Arvidsson, Kim  
ApJ 806, 40 (2015)

*Stellar Masses and Star Formation Rates of Lensed, Dusty, Star-forming Galaxies from the SPT Survey.*

Ma, Jingzhe, Gonzalez, Anthony. H., Spilker, J. S., Strandet, M., Ashby, M. L. N., Aravena, M., Béthermin, M., Bothwell, M. S., de Breuck, C., Brodwin, M., Chapman, S. C., Fassnacht, C. D., Greve, T. R., Gullberg, B., Hezaveh, Y., Malkan, M., Marrone, D. P., Saliwanchik, B. R., Vieira, J. D., Weiss, A., Welikala, N.  
ApJ 812, 88 (2015)

*High-J CO Sleds in Nearby Infrared Bright Galaxies Observed By Herschel/PACS.*

Mashian, N., Sturm, E., Sternberg, A., Janssen, A., Hailey-Dunsheath, S., Fischer, J., Contursi, A., González-Alfonso, E., Graciá-Carpio, J., Poglitsch, A., Veilleux, S., Davies, R., Genzel, R., Lutz, D., Tacconi, L., Verma, A., Weiß, A., Polisenky, E., Nikola, T.  
ApJ 802, 81 (2015)

*ALMA reveals sunburn: CO dissociation around AGB stars in the globular cluster 47 Tucanae.*

I. McDonald, A. A. Zijlstra, E. Lagadec, G. C. Sloan, M. L. Boyer, M. Matsuura, R. J. Smith, C. L. Smith, J. A. Yates, J. Th. van Loon, O. C. Jones, S. Ramstedt, A. Avison, K. Justtanont, H. Olofsson, J. A. D. L. Blommaert, S. R. Goldman and M. A. T. Groenewegen.  
Mon. Not. R. Astron. Soc. 453, 4324–4336 (2015)

*Discovery of Molecular Gas around HD 131835 in an APEX Molecular Line Survey of Bright Debris Disks.*

Moór, A., Henning, Th., Juhász, A., Ábrahám, P., Balog, Z., Kóspál, Á., Pascucci, I., Szabó, Gy. M., Vavrek, R., Curé, M., Csengeri, T., Grady, C., Güsten, R., Kiss, Cs.  
ApJ 814, 42 (2015)

*Velocity resolved [C ii], [C i], and CO observations of the N159 star-forming region in the Large Magellanic Cloud: a complex velocity structure and variation of the column densities.*

Okada, Yoko, Requena-Torres, Miguel Angel, Güsten, Rolf, Stutzki, Jürgen, Wiesemeyer, Helmut, Pütz, Patrick, Ricken, Oliver  
A&A 580 A54 (2015)

*Detection of CI line emission from the detached CO shell of the AGB star R Sculptoris.*

H. Olofsson, P. Bergman, and M. Lindqvist.  
Astron. Astrophys. 582, A102 (2015)

*Can we trace very cold dust from its emission alone?*

Pagani, L., Lefèvre, C., Juvela, M., Pelkonen, V.-M., Schuller, F.  
A&A 574 L5 (2015)

*Detection of a large fraction of atomic gas not associated with star-forming material in M17 SW.*

Pérez-Beaupuits, J. P., Stutzki, J., Ossenkopf, V., Spaans, M., Güsten, R., Wiesemeyer, H.  
A&A 575 A9 (2015)

*Disentangling the excitation conditions of the dense gas in M17 SW.*

Pérez-Beaupuits, J. P., Güsten, R., Spaans, M., Ossenkopf, V., Menten, K. M., Requena-Torres, M. A., Wiesemeyer, H., Stutzki, J., Guevara, C., Simon, R.  
A&A 583 A107 (2015)

*Assessing Molecular Outflows and Turbulence in the Protostellar Cluster Serpens South.*

Plunkett, Adele L., Arce, Héctor G., Corder, Stuart A., Dunham, Michael M., Garay, Guido, Mardones, Diego  
ApJ 803, 22 (2015)

*Fragmentation and kinematics of dense molecular cores in the filamentary infrared-dark cloud G011.11-0.12.*

Ragan, Sarah E., Henning, Thomas, Beuther, Henrik, Linz, Hendrik, Zahorecz, Sarolta  
A&A 573 A119 (2015)

*Hops 383: an Outbursting Class 0 Protostar in Orion.*

Safron, Emily J., Fischer, William J., Megeath, S. Thomas, Furlan, Elise, Stutz, Amelia M., Stanke, Thomas, Billot, Nicolas, Rebull, Luisa M., Tobin, John J., Ali, Babar, Allen, Lori E., Booker, Joseph, Watson, Dan M., Wilson, T. L.  
ApJ 800 L5 (2015)

*High spectral and spatial resolution observations of the PDR emission in the NGC 2023 reflection nebula with SOFIA and APEX.*

Sandell, G., Mookerjee, B., Güsten, R., Requena-Torres, M. A., Riquelme, D., Okada, Y.  
A&A 578 A41 (2015)

*Understanding star formation in molecular clouds. II. Signatures of gravitational collapse of IRDCs.*

Schneider, N., Csengeri, T., Klessen, R. S., Tremblin, P., Ossenkopf, V., Peretto, N., Simon, R., Bontemps, S., Federrath, C.  
A&A 578 A29 (2015)

*Evolution of column density distributions within Orion A.*

Stutz, A. M., Kainulainen, J.  
A&A 577 L6 (2015)

*The Dense Filamentary Giant Molecular Cloud G23.0-0.4: Birthplace of Ongoing Massive Star Formation.*

Su, Yang, Zhang, Shaobo, Shao, Xiangjun, Yang, Ji  
ApJ 811, 134 (2015)

*The massive Class I eruptive variable V723 Carinae and its neighbour Car I-125.*

Tapia, Mauricio, Roth, Miguel, Persi, Paolo  
MNRAS 446 4088-4097 (2015)

*Simultaneous multifrequency radio observations of the Galactic Centre magnetar SGR J1745-2900.*

Torne, P., Eatough, R. P., Karuppusamy, R., Kramer, M., Paubert, G., Klein, B., Desvignes, G., Champion, D. J., Wiesemeyer, H., Kramer, C., Spitler, L. G., Thum, C., Güsten, R., Schuster, K. F., Cognard, I.  
MNRAS 451 L50-L54 (2015)

*Star formation in Chamaeleon I and III: a molecular line study of the starless core population.*

Tsitali, A. E., Belloche, A., Garrod, R. T., Parise, B., Menten, K. M.  
A&A 575 A27 (2015)

*The almost ubiquitous association of 6.7-GHz methanol masers with dust.*

Urquhart, J. S., Moore, T. J. T., Menten, K. M., König, C., Wyrowski, F., Thompson, M. A., Csengeri, T., Leurini, S., Eden, D. J.  
MNRAS 446 3461-3477 (2015)

*The RMS survey: ammonia mapping of the environment of massive young stellar objects.*

Urquhart, J. S., Figura, C. C., Moore, T. J. T., Csengeri, T., Lumsden, S. L., Pillai, T., Thompson, M. A., Eden, D. J., Morgan, L. K.  
MNRAS 452 4029-4053 (2015)

*First 230 GHz VLBI fringes on 3C 279 using the APEX Telescope.*

J. Wagner, A. L. Roy, T. P. Krichbaum, W. Alef, A. Bansod, A. Bertarini, R. Güsten, D. Graham, J. Hodgson, R. Märten, K. Menten, D. Muders, H. Rottmann, G. Tuccari, A. Weiss, G. Wieching, M. Wunderlich, J. A. Zensus, J. P. Araneda, O. Arriagada, M. Cantzler, C. Duran, F. M. Montenegro-Montes, R. Olivares, P. Caro, P. Bergman, J. Conway, R. Haas, J. Johansson, M. Lindqvist, H. Olofsson, M. Pantaleev, S. Buttaccio, R. Cappallo, G. Crew, S. Doeleman, V. Fish, R.-S. Lu, C. Ruszczyk, J. SooHoo, M. Titus, R. Freund, D. Marrone, P. Strittmatter, L. Ziurys, R. Blundell, R. Primiani, J. Weintroub, K. Young, M. Bremer, S. Sánchez, A. P. Marscher, R. Chilson, K. Asada, and M. Inoue.  
Astron. Astrophys. 581, A32 (2015)

*Investigating the nature of the Fried Egg nebula. CO mm-line and optical spectroscopy of IRAS 17163–3907.*

S. H. J. Wallström, S. Müller, E. Lagadec, J. H. Black, R. D. Oudmaijer, K. Justtanont, H. van Winckel, and A. A. Zijlstra.  
Astron. Astrophys. 574, A139 (2015)

*Large-scale filaments associated with Milky Way spiral arms.*

Wang, Ke, Testi, Leonardo, Ginsburg, Adam, Walmsley, C. Malcolm, Molinari, Sergio, Schisano, Eugenio  
MNRAS 450 4043-4049 (2015)

*ATLASGAL - Kinematic distances and the dense gas mass distribution of the inner Galaxy.*

Wienen, M., Wyrowski, F., Menten, K. M., Urquhart, J. S., Csengeri, T., Walmsley, C. M., Bontemps, S., Russeil, D., Bronfman, L., Koribalski, B. S., Schuller, F.  
A&A 579 A91 (2015)



*APEX-CHAMP+ high-J CO observations of low-mass young stellar objects. IV. Mechanical and radiative feedback.*

Yıldız, U. A., Kristensen, L. E., van Dishoeck, E. F., Hogerheijde, M. R., Karska, A., Belloche, A., Endo, A., Frieswijk, W., Güsten, R., van Kempen, T. A., Leurini, S., Nagy, Z., Pérez-Beaupuits, J. P., Risacher, C., van der Marel, N., van Weeren, R. J., Wyrowski, F. *A&A* 576 A109 (2015)

*Physical and chemical properties of Red MSX Sources in the southern sky: H II regions.*

Yu, Naiping, Wang, Jun-Jie, Li, Nan *MNRAS* 446 2566-2581 (2015)

## **Astronomy: ALMA**

Publications resulting from ALMA observations and with Nordic ARC node involvement.

*Probing highly obscured, self-absorbed galaxy nuclei with vibrationally excited HCN.*

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