

# Onsala Space Observatory, Chalmers

## Publication list 2004

Compiled by Magnus Thomasson

Publications in refereed journals 2004 enabled by the Onsala infrastructure are recorded below. For astronomy, publications in the following refereed astronomical journals are listed: Astronomy & Astrophysics (including Letters), Astronomical Journal, Astrophysical Journal (including Letters and Supplement Series), Publications of the Astronomical Society of the Pacific, and Monthly Notices of the Royal Astronomical Society (including Letters). In addition, technical publications related to the telescopes in other journals and in conference proceedings are also listed.

[Astronomy: Onsala 20 m and/or 25 m telescope \(single-dish\)](#)

[Astronomy: SEST \(single-dish\)](#)

[Astronomy: VLBI](#)

[Geodesy: VLBI](#)

[Aeronomy: Odin](#)

### **Astronomy: Onsala 20 m and 25 m telescopes (single-dish)**

*Methanol in W3(H<sub>2</sub>O) and Surrounding Regions*

E. C. Sutton , A. M. Sobolev, S. V. Salii , A. V. Malyshev , A. B. Ostrovskii , and I. Zinchenko

The Astrophysical Journal, 609:231-242 (2004)

*The NH<sub>3</sub> / N<sub>2</sub>H<sup>+</sup> abundance ratio in dense cores*

S. Hotzel, J. Harju, and C. M. Walmsley

Astronomy & Astrophysics 415, 1065-1072 (2004)

*Molecular inventories and chemical evolution of low-mass protostellar envelopes*

J. K. Jørgensen, F. L. Schöier, and E. F. van Dishoeck

Astronomy & Astrophysics 416, 603-622 (2004)

*The impact of shocks on the chemistry of molecular clouds - High resolution images of chemical differentiation along the NGC 1333-IRAS 2A outflow*

J. K. Jørgensen, M. R. Hogerheijde, G. A. Blake, E. F. van Dishoeck, L. G. Mundy, and F. L. Schöier

Astronomy & Astrophysics 415, 1021-1037 (2004)

*The structure of the NGC 1333-IRAS2 protostellar system on 500 AU scales - An infalling envelope, a circumstellar disk, multiple outflows, and chemistry*

J. K. Jørgensen, M. R. Hogerheijde, E. F. van Dishoeck, G. A. Blake, and F. L. Schöier

Astronomy & Astrophysics 413, 993-1007 (2004)

## **Astronomy: SEST (single-dish)**

### *Molecular cloud structure and star formation near HH 216 in M 16*

M. Andersen, J. Knude, B. Reipurth, A. Castets, L. Å. Nyman, M. J. McCaughrean, and S. Heathcote  
Astronomy & Astrophysics 414, 969-978 (2004)

### *Millimetre observations of the IRAS 18162–2048 outflow: evidence for cloud disruption around an intermediate-mass protostar.*

Benedettini, M., Molinari, S., Testi, L. & Noriega-Crespo, A.  
Monthly Notices of the Royal Astronomical Society 347 (1), 295-306 (2004)

### *An Optical Survey of the Position Error Contours of Unidentified High-Energy Gamma-Ray Sources at Galactic Latitude $|b| > 20^\circ$*

S. D. Bloom, D. A. Dale, R. Cool, K. Dupczak, C. Miller, A. Haugsjaa, C. Peters, M. Tornikoski, P. Wallace, M. Pierce  
The Astronomical Journal, 128:56-61 (2004)

### *The Eye of the Tornado – an isolated, high-mass young stellar object near the Galactic Centre.*

Burton, M. G., Lazendic, J. S., Yusef-Zadeh, F. & Wardle, M.  
Monthly Notices of the Royal Astronomical Society 348 (2), 638-646 (2004)

### *Anomalous Radio Emission from Dust in the Helix*

S. Casassus, A. C. S. Readhead, T. J. Pearson, L.-Å. Nyman, M. C. Shepherd, and L. Bronfman  
The Astrophysical Journal, 603:599-610 (2004)

### *The connection between W31, SGR 1806–20, and LBV 1806–20: Distance, extinction, and structure*

S. Corbel, and S. S. Eikenberry  
Astronomy & Astrophysics 419, 191-201 (2004)

### *The molecular clouds in the environs of the supernova remnants G349.7+0.2 and G18.8+0.3*

G. Dubner, E. Giacani, E. Reynoso, and S. Parón  
Astronomy & Astrophysics 426, 201-212 (2004)

### *SIMBA survey of southern high-mass star forming regions - I. Physical parameters of the 1.2-mm/IRAS sources*

S. Faúndez, L. Bronfman, G. Garay, R. Chini, L.-Å. Nyman, and J. May  
Astronomy & Astrophysics 426, 97-103 (2004)

### *Discovery of Four New Massive and Dense Cold Cores*

Guido Garay, Santiago Faúndez, Diego Mardones, Leonardo Bronfman, Rolf Chini, Lars-Åke Nyman  
The Astrophysical Journal, 610:313-319 (2004)

*The relationship of CO abundance to extinction and  $N(H_2)$ : - Observations of globules and the dependence on star formation activity*

P. Harjunpää, K. Lehtinen, and L. K. Haikala  
Astronomy & Astrophysics 421, 1087-1099 (2004)

*Molecular inventories and chemical evolution of low-mass protostellar envelopes*

J. K. Jørgensen, F. L. Schöier, and E. F. van Dishoeck  
Astronomy & Astrophysics 416, 603-622 (2004)

*Shocked molecular hydrogen towards the Tornado nebula.*

Lazendic, J. S., Wardle, M., Burton, M. G., Yusef-Zadeh, F., Green, A. J. & Whiteoak, J. B.  
Monthly Notices of the Royal Astronomical Society 354 (2), 393-400 (2004)

*Molecular gas in the galaxy M 83 - II. Kinematics of the molecular gas*

A. A. Lundgren, H. Olofsson, T. Wiklind, and G. Rydbeck  
Astronomy & Astrophysics 422, 865-881 (2004)

*Molecular gas in the galaxy M 83 - I. The molecular gas distribution*

A. A. Lundgren, T. Wiklind, H. Olofsson, and G. Rydbeck  
Astronomy & Astrophysics 413, 505-523 (2004)

*The Giant Molecular Cloud associated with RCW 106 - A 1.2 mm continuum mapping study*

B. Mookerjee, C. Kramer, M. Nielbock, and L.-A. Nyman  
Astronomy & Astrophysics 426, 119-129 (2004)

*The giant pillars of the Carina Nebula*

J. M. Rathborne, K. J. Brooks, M. G. Burton, M. Cohen, and S. Bontemps  
Astronomy & Astrophysics 418, 563-576 (2004)

*CO observations in the direction of southern HII regions*

D. Russeil, and A. Castets  
Astronomy & Astrophysics 417, 107-114 (2004)

*Millimeter dust emission from an SMC cold molecular cloud*

M. Rubio, F. Boulanger, F. Rantakyro, and A. Contursi  
Astronomy & Astrophysics 425, L1-L4 (2004)

*A Near-Infrared/Millimeter-Wave Study of Six Fourth-Quadrant High-Mass Star Formation Regions*

P.K. Sollins, S.T. Megeath  
The Astronomical Journal, 128:2374-2387 (2004)

*Molecular gas properties of 12- $\mu$ m Seyfert galaxies – I. The southern sample*

Matt Strong, Alan Pedlar, Susanne Aalto, Rob J. Beswick, Stephen Curran and Roy Booth  
Monthly Notices of the Royal Astronomical Society, Volume 353 Issue 4 Page 1151 (2004)

*Carbon budget and carbon chemistry in Photon Dominated Regions*

D. Teyssier, D. Fossé, M. Gerin, J. Pety, A. Abergel, and E. Roueff  
Astronomy & Astrophysics 417, 135-149 (2004)

*Dust and super star clusters in NGC 5253*  
L. Vanzi, and M. Sauvage  
Astronomy & Astrophysics 415, 509-520 (2004)

*The Superwind Galaxy NGC 4666: Gravitational Interactions and the Influence of the Resulting Starburst on the Interstellar Medium*  
Fabian Walter, Michael Dahlem, Ute Lisenfeld  
The Astrophysical Journal, 606:258-270 (2004)

*Dense gas in nearby galaxies - XVI. The nuclear starburst environment in NGC 4945*  
M. Wang, C. Henkel, Y.-N. Chin, J. B. Whiteoak, M. Hunt Cunningham, R. Mauersberger, and D. Muders  
Astronomy & Astrophysics 422, 883-905 (2004)

*Australia Telescope Compact Array imaging of circumstellar HCN line emission from R Scl*  
T. Wong, F. L. Schöier, M. Lindqvist, and H. Olofsson  
Astronomy & Astrophysics 413, 241-249 (2004)

*The Pattern Speeds of M51, M83, and NGC 6946 Using CO and the Tremaine-Weinberg Method*  
P. Zimmer, R. J. Rand, and J. T. McGraw  
The Astrophysical Journal, 607:285-293 (2004)

## **Astronomy: VLBI**

Publications related to VLBI observations including the 20 m or 25 m telescopes in Onsala.

*Extreme superluminal motion in the curved Jet of PKS 1502+106*  
T. An, X. Y. Hong, T. Venturi, D. R. Jiang, and W. H. Wang  
Astronomy & Astrophysics 421, 839-846 (2004)

*High-resolution imaging of the radio continuum and neutral gas in the inner kiloparsec of the radio galaxy 3C 293*  
R. J. Beswick, A. B. Peck, G. B. Taylor and G. Giovannini  
Monthly Notices of the Royal Astronomical Society, Volume 352 Issue 1 Page 49 (2004)

*Parsec-Scale Properties of Markarian 501*  
M. Giroletti, G. Giovannini, L. Feretti, W. D. Cotton, P. G. Edwards, L. Lara, A. P. Marscher, J. R. Mattox, B. G. Piner, and T. Venturi  
The Astrophysical Journal, 600:127-140 (2004)

*EVN observations of H<sub>2</sub>O masers towards the high-mass young stellar object in AFGL 5142*  
C. Goddi, L. Moscadelli, W. Alef, and J. Brand  
Astronomy & Astrophysics 420, 929-936 (2004)

*VLBI imaging of OH absorption: the puzzle of the nuclear region of NGC 3079*  
Yoshiaki Hagiwara, Hans-Rainer Klöckner and Willem Baan  
Monthly Notices of the Royal Astronomical Society, Volume 353 Issue 4 Page 1055, 2004

*A relativistic helical jet in the  $\gamma$ -ray AGN 1156+295*

X. Y. Hong, D. R. Jiang, L. I. Gurvits, M. A. Garrett, S. T. Garrington, R. T. Schilizzi, R. D. Nan, H. Hirabayashi, W. H. Wang, and G. D. Nicolson  
Astronomy & Astrophysics 417, 887-904 (2004)

*An embedded circumnuclear disk in Mrk 273*

H.-R. Klöckner, and W. A. Baan  
Astronomy & Astrophysics 419, 887-896 (2004)

*The inner kiloparsec of the jet in 3C 264*

L. Lara, G. Giovannini, W. D. Cotton, L. Feretti, and T. Venturi  
Astronomy & Astrophysics 415, 905-913 (2004)

*VLBI imaging and optical variability of the BL Lac object OQ 530 (B1418+546)*

E. Massaro, F. Mantovani, R. Fanti, M. Maesano, F. Montagni, R. Nesci, S. Scavi, G. Tosti, and T. Venturi  
Astronomy & Astrophysics 423, 935-942 (2004)

*Motion and properties of nuclear radio components in Seyfert galaxies seen with VLBI*

E. Middelberg, A. L. Roy, N. M. Nagar, T. P. Krichbaum, R. P. Norris, A. S. Wilson, H. Falcke, E. J. M. Colbert, A. Witzel, and K. J. Fricke  
Astronomy & Astrophysics 417, 925-944 (2004)

*The unfriendly ISM in the radio galaxy 4C 12.50 (PKS 1345+12)*

R. Morganti, T. A. Oosterloo, C. N. Tadhunter, R. Vermeulen, Y. M. Pihlström, G. van Moorsel, and K. A. Wills  
Astronomy & Astrophysics 424, 119-124 (2004)

*The VSOP 5 GHz Active Galactic Nucleus Survey. III. Imaging Results for the First 102 Sources*

W. K. Scott, E. B. Fomalont, S. Horiuchi, J. E. J. Lovell, G. A. Moellenbrock, R. G. Dodson, P. G. Edwards, G. V. Coldwell, S. Fodor, S. Frey, L. I. Gurvits, H. Hirabayashi, M. L. Lister, L. Mosoni, Y. Murata, Z. Paragi, B. G. Piner, Z.-Q. Shen, A. R. Taylor, and S. J. Tingay  
The Astrophysical Journal Supplement Series, 155:33-72 (2004)

*Structure of OJ 287 from Geodetic VLBA Data*

Claudio E. Tateyama and Kerry A. Kingham  
The Astrophysical Journal, 608:149-156 (2004)

## **Geodesy: VLBI**

Publications related to VLBI observations including the 20 m or 25 m telescopes in Onsala.

*Vienna mapping functions in VLBI analyses,*

Boehm J, Schuh H,:

Geophys. Res. Lett., 31, L01603, doi:10.1029/2003GL018984 (2004)

*Study of the atmospheric pressure loading signal in very long baseline interferometry observations,*

Petrov L, Boy J P,:

J. Geophys. Res., 109, B03405, doi:10.1029/2003JB002500 (2004)

## **Aeronomy: Odin**

Aeronomy publications related to Odin.

*Tomographic Retrieval of the Oxygen InfraRed Atmospheric Band with the OSIRIS InfraRed Imager*

Degenstein, D. A., Llewellyn, E. J., and Lloyd, N. D.

Can. J. Phys., 82, 501-515 (2004)

*Strato-Mesospheric Measurements of Carbon Monoxide with the Odin Sub-Millimetre Radiometer: Retrieval and First Results*

Dupuy, E., Urban, J., Ricaud, P., Le Flochmoën, E., Lautié, N., Murtagh, D., de La Noë, J., El Amraoui, L., Eriksson, P., Forkman, P., Frisk, U., Jégou, F., Jiménez, C., and Olberg, M.

Geophys. Res. Lett., 31 (20), art.no.-L20101. doi:10.1029/2004GL020558 (2004)

*Assimilation of Odin/SMR O3 and N2O measurements in a three-dimensional chemistry transport model*

El Amraoui, L., Ricaud, P., Urban, J., Théodore, B., Hauchecorne, A., Lautié, N., de La Noë, J., Guirlet, M., Le Flochmoën, E., Murtagh, D., and Dupuy, É.

J. Geophys. Res., 109, (D22): art.no.-D22304, 2004 doi:10.1029/2004JD004796 (2004)

*Retrieval of stratospheric O3 and NO2 profiles from Odin Optical Spectrograph and Infrared Imager System (OSIRIS) limb-scattered sunlight measurements.*

Haley, C. S., Brohede, S. M., Sioris, C. E., Griffioen, E., Murtagh, D. P., McDade, I. C., Eriksson, P., Llewellyn, E. J., Bazureau, A., and Goutail, F. J.

Geophys. Res., 109, (D16) doi:10.1029/2004JD004588 (2004)

*A Comparison of Methods for Retrieving Stratospheric Ozone Profiles from OSIRIS Limb-Scatter Measurements*

Haley, C. S., Savigny, C. von, Brohede, S., Sioris, C. E., McDade, I. C., Llewellyn, E. J., and Murtagh, D. P.

in Trace constituents in the troposphere and in the lower stratosphere, Adv. Space Research, 34 (4), 769-774, 2004. doi:10.1016/j.asr.2003.08.058 (2004)

*Satellite-pointing retrieval from atmospheric limb-scattering of solar UV-B radiation.*

Kaiser, J. W., Savigny, C. von, Eichmann, K. U., Noel, S., Bovensmann, H., and Burrows, J. P.

Can J. Phys., 82 (12), 1041-1052 (2004)

*MIPAS Ozone Validation by Satellite Intercomparisons*

Kerridge, B. J., Goutail, F., Bazureau, A., Wang, D.-Y., Bracher, A., Weber, M., Bramstedt, K., Siddans, R., Latter, B. G., Reburn, W. J., Jay, V. L., Dethof, A., and Payne, V. H. Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2), 3-7 May 2004, ESA-ESRIN, Frascati, Italy, Editor: D. Danesy, ESA SP-562, p.20.1-20.10 (2004)

*The OSIRIS Instrument on the Odin Spacecraft*

Llewellyn, E. J., Lloyd, N. D., Degenstein, D. A., Gattinger, R. L., Petelina, S. V., Bourassa, A. E., Wiensz, J. T., Ivanov, E. V., McDade, I. C., Solheim, B. H., McConnell, J. C., Haley, C. S., Savigny, C. von, Sioris, C. E., McLinden, C. A., Griffioen, E., Kaminski, J., Evans, W. F. J., Puckrin, E., Strong, K., Wehrle, V., Hum, R. H., Kendall, D. J. W., Matsushita, J., Murtagh, D. P., Brohede, S., Stegman, J., Witt, G., Barnes, G., Payne, W. F., Piché, L., Smith, K., Warshaw, G., Deslauniers, D.-L., Marchand, P., Richardson, E. H., King, R. A., Wevers, I., McCreath, W., Kyrölä, E., Oikarinen, L., Leppelmeier, G. W., Auvinen, H., Mégie, G., Hauchecorne, A., Lefèvre, F., de La Noë, J., Ricaud, P., Frisk, U., Sjöberg, F., Schéele, F. von, and Nordh, L. Can. J. Phys., 82, 411-422 (2004)

*Comparison of radiative transfer models for limb-viewing scattered sunlight measurements.*

Loughman, R. P., Griffioen, E., Oikarinen, L., Postylyakov, O. V., Rozanov, A., Flittner, D. E., and Rault, D. F. J. Geophys. Res., 109 (D6), art. no.-D06303, 2004. doi:10.1029/2003JD003854 (2004)

*Derivation of polarization from Odin/OSIRIS limb spectra*

McLinden, C. A., Haley, C. S., and Llewellyn, E. J. Geophys. Res. Lett., 31 (20) art.no.-L20112, 2004. doi:10.1029/2004GL020825 (2004)

*Comparison of the Odin/OSIRIS stratospheric ozone profiles with coincident POAM III and sonde measurements*

Petelina, S. V., Llewellyn, E. J., Degenstein, D. A., Lloyd, N. D., Gattinger, R. L., Haley, C. S., Savigny, C. von, McDade, I., Evans, W. F. J., Murtagh, D. P., and de la Noë, J. Geophys. Res. Lett., 31 (7), L07104, art.no -L07104, 2004. doi:10.1029/2003GL019299 (2004)

*First near-global retrievals of OH rotational temperatures from satellite-based Meinel band emission measurements*

Savigny, C. von, Eichmann, K.-U., Llewellyn, E. J., Bovensmann, H., Burrows, J. P., Bittner, M., Hoepfner, K., Offermann, D., Taylor, M. J., Zhao, Y., Steinbrecht, W., and Winkler, P. Geophys. Res. Lett., 31 (15), art.no.-L15111, 2004. doi:10.1029/2004GL020410 (2004)

*Moliere (v5): A versatile forward- and inversion model for the millimeter and sub-millimeter wavelength range*

Urban, J., Baron, P., Lautié, N., Schneider, N., Dassas, K., Ricaud, P., and de La Noë, J., J. Quant. Spectrosc. Radiat. Transfer, 83 (3-4), 529-554, 2004. doi:10.1016/S0022-4073(03)00104-3 (2004)

*The Northern Hemisphere Stratospheric Vortex during the 2002-03 Winter: Subsidence, Chlorine Activation and Ozone Loss observed by the Odin Sub-Millimeter Radiometer*  
Urban, J., Lantié, N., Le Flochmoën, E., Ricaud, P., de La Nöe, J., Dupuy, E., Drouin, A., El Amraoui, L., Eriksson, P., Frisk, U., Jiménez, C., Kyrölä, E., Llewellyn, E. J., Mégie, G., Murtagh, D., Nordh, L., and Olberg, M.  
Geophys. Res. Lett., 31 (7), L07103, 2004. doi:10.1029/2003GL019089 (2004)

*Pressure broadening measurement of submillimeter-wave lines of O<sub>3</sub>*  
Yamada, M. M. and Amano, T.  
J. Quant. Spectrosc. Radiat. Transfer, accepted 14 October 2004, 2005.  
doi:10.1016/j.jqsrt.2004.10.007 (2004)