

Onsala Space Observatory, Chalmers

Publication list 2008

Compiled by Magnus Thomasson

Publications in refereed journals 2008 enabled by the Onsala infrastructure are recorded below. For astronomy, publications in the following refereed astronomical journals are listed: *Advances in Space Science*, *Astronomy & Astrophysics* (including Letters), *Astronomical Journal*, *Astronomy Reports*, *Astrophysical Journal* (including Letters and Supplement Series), *Icarus*, *Monthly Notices of the Royal Astronomical Society* (including Letters), *Planetary and Space Science*, and *Publications of the Astronomical Society of the Pacific*. In addition, technical publications related to the telescopes in other journals and in conference proceedings are also listed.

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

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

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

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

[Astronomy: VLBI](#)

[Geodesy: VLBI](#)

[Geodesy: GNSS](#)

[Aeronomy: Odin](#)

[Technology: receiver development etc.](#)

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

Star formation around the H ii region Sh2-235

M. S. Kirsanova, A. M. Sobolev, M. Thomasson, D. S. Wiebe, L. E. B. Johansson, A. F. Seleznev

Monthly Notices of the Royal Astronomical Society, Volume 388, Issue 2, Pages: 729-736 (2008)

Circumstellar water vapour in M-type AGB stars: radiative transfer models, abundances, and predictions for HIFI

M. Maercker, F. L. Schöier, H. Olofsson, P. Bergman, S. Ramstedt

Astronomy and Astrophysics 479 3, 779-791 (2008)

On the reliability of mass-loss-rate estimates for AGB stars

S. Ramstedt, F. L. Schöier, H. Olofsson, A. A. Lundgren

Astronomy and Astrophysics 487 2, 645-657 (2008)

The RMS survey - 13CO observations of candidate massive YSOs in the northern Galactic plane

J. S. Urquhart et al.

Astronomy & Astrophysics 487 1, 253-264 (2008)

Astronomy: APEX (single-dish)

MWC 297: a young high-mass star rotating at critical velocity

B. Acke et al.

Astronomy & Astrophysics 485 1, 209-221 (2008)

First 450 μm dust continuum mapping of the massive star-forming region NGC 3576 with the P-ArTéMiS bolometer camera

Ph. André et al.

Astronomy and Astrophysics 490 3, L27-L30 (2008)

Submillimeter observations of the J2142-4423 Ly α protocluster at $z = 2.38$

A. Beelen et al.

Astronomy & Astrophysics 485 3, 645-655 (2008)

Discovery of an Extremely High Velocity, Massive, and Compact Molecular Outflow in Norma

Leonardo Bronfman, Guido Garay, Manuel Merello, Diego Mardones, Jorge May, Kate J. Brooks, Lars-Åke Nyman, and Rolf Güsten

The Astrophysical Journal 672 No 1, 391-397 (2008)

Detection of “parent” molecules from the inner wind of AGB stars as tracers of non-equilibrium chemistry

L. Decin, I. Cherchneff, S. Hony, S. Dehaes, C. De Breuck, K. M. Menten

Astronomy and Astrophysics 480 2, 431-438 (2008)

(APEX)

An enigmatic HI cloud

L. Dedes, C. Dedes, P. W. M. Kalberla

Astronomy and Astrophysics 491 3, L45-L48 (2008)

*Simultaneous NIR/sub-mm observation of flare emission from Sagittarius A**

A. Eckart et al.

Astronomy and Astrophysics 492 2, 337-344 (2008)

Detection of 6 K gas in Ophiuchus D

J. Harju, M. Juvela, S. Schlemmer, L. K. Haikala, K. Lehtinen, K. Mattila

Astronomy & Astrophysics 482 2, 535-539 (2008)

High-mass star formation in the IRAS 17233-3606 region: a new nearby and bright hot core in the southern sky

S. Leurini, C. Hieret, S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, R. Güsten, L. Zapata

Astronomy & Astrophysics 485 1, 167-175 (2008)

q¹ Eridani: a solar-type star with a planet and a dust belt

R. Liseau, C. Risacher, A. Brandeker, C. Eiroa, M. Fridlund, R. Nilsson, G. Olofsson, G. L. Pilbratt, P. Thébault

Astronomy and Astrophysics 480 3, L47-L50 (2008)

Submillimeter water and ammonia absorption by the peculiar $z \approx 0.89$ interstellar medium in the gravitational lens of the PKS 1830-211 system

K. M. Menten, R. Güsten, S. Leurini, S. Thorwirth, C. Henkel, B. Klein, C. L. Carilli, M. J. Reid

Astronomy and Astrophysics 492 3, 725-730 (2008)

A multi-transition submillimeter water maser study of evolved stars. Detection of a new line near 475 GHz

K. M. Menten, A. Lundgren, A. Belloche, S. Thorwirth, M. J. Reid

Astronomy and Astrophysics 477 1, 185-192

Detection of 6.7 GHz methanol absorption towards hot corinos

J. D. Pandian, S. Leurini, K. M. Menten, A. Belloche, P. F. Goldsmith

Astronomy and Astrophysics 489 3, 1175-1182 (2008)

LABOCA and MAMBO-2 imaging of the dust ring of the Sombrero galaxy (NGC 4594)

C. Vlahakis, M. Baes, G. Bendo, A. Lundgren

Astronomy & Astrophysics 485 3, L25-L28 (2008)

Astronomy: Odin (single-dish)

Observations of water vapor in the stratosphere of Jupiter with the Odin space telescope

Cavalié, T.; Billebaud, F.; Biver, N.; Dobrijevic, M.; Lellouch, E.; Brillet, J.; Lecacheux, J.; Hjalmarson, A.; Sandqvist, A.; Frisk, U.; Olberg, M.; Odin, E. & Bergin, E. A.

Planetary and Space Science 56 (12), 1573-1584 (2008)

An upper limit of gaseous water abundance in Chamaeleon-MMS1 as observed with ODIN

A. Klotz, J. Harju, I. Ristorcelli, M. Juvela, N. Boudet, L. K. Haikala

Astronomy and Astrophysics 488 2, 559-564 (2008)

An upper limit of gaseous water abundance in Chamaeleon-MMS1 as observed with ODIN

A. Klotz, J. Harju, I. Ristorcelli, M. Juvela, N. Boudet, L. K. Haikala

Astronomy and Astrophysics 492 3, 767 (2008)

Statistical Image Deconvolution with Uncertainties of Observed Maps of Spectra

G. Rydbeck

The Astrophysical Journal 675 No 2, 1304-1318 (2008)

Odin observations of the Galactic centre in the 118-GHz band - Upper limit to the O₂ abundance

Aa. Sandqvist, B. Larsson, Å. Hjalmarson, P. Bergman, P. Bernath, U. Frisk, M. Olberg, L. Pagani, L. M. Ziurys

Astronomy & Astrophysics 482 3, 849-853 (2008)

Astronomy: SEST (single-dish)

Dense gas in luminous infrared galaxies

W. A. Baan, C. Henkel, A. F. Loenen, A. Baudry, T. Wiklind

Astronomy and Astrophysics 477 3, 747-762 (2008)

The large-scale atomic and molecular gas in the Circinus galaxy

S. J. Curran, B. S. Koribalski, I. Bains

Monthly Notices of the Royal Astronomical Society, Volume 389, Issue 1, Pages: 63-74 (2008)

^{12}CO 4–3 and [CI] 1–0 at the centers of NGC 4945 and Circinus

M. Hitschfeld et al.

Astronomy and Astrophysics 479 1, 75-82 (2008)

Wavelet analysis of a large sample of AGN at high radio frequencies

T. Hovatta, H. J. Lehto, M. Tornikoski

Astronomy and Astrophysics 488 3, 897-903 (2008)

Long-term radio variability of AGN: flare characteristics

T. Hovatta, E. Nieppola, M. Tornikoski, E. Valtaoja, M. F. Aller, H. D. Aller

Astronomy & Astrophysics 485 1, 51-61 (2008)

The millimeter-wave continuum spectrum of Centaurus A and its nucleus

F. P. Israel, D. Raban, R. S. Booth, F. T. Rantakyro

Astronomy & Astrophysics 483 3, 741-748 (2008)

Clumpy photon-dominated regions in Carina - I. [C I] and mid-J CO lines in two 4'x4' fields

C. Kramer et al.

Astronomy and Astrophysics 477 2, 547-555 (2008)

Star formation in the Trifid Nebula - Cores and filaments

B. Lefloch, J. Cernicharo, J. R. Pardo

Astronomy and Astrophysics 489 1, 157-171 (2008)

H I and CO in the circumstellar environment of the oxygen-rich AGB star RX Leporis

Y. Libert, T. Le Bertre, E. Gérard, J. M. Winters

Astronomy and Astrophysics 491 3, 789-796 (2008)

Circumstellar water vapour in M-type AGB stars: radiative transfer models, abundances, and predictions for HIFI

M. Maercker, F. L. Schöier, H. Olofsson, P. Bergman, S. Ramstedt

Astronomy and Astrophysics 479 3, 779-791 (2008)

Submillimeter Observations of Giant Molecular Clouds in the Large Magellanic Cloud: Temperature and Density as Determined from $J = 3-2$ and $J = 1-0$ Transitions of CO
Tetsuhiro Minamidani, Norikazu Mizuno, Yoji Mizuno, Akiko Kawamura, Toshikazu Onishi, Tetsuo Hasegawa, Ken'ichi Tatematsu, Masafumi Ikeda, Yoshiaki Moriguchi, Nobuyuki Yamaguchi, Jürgen Ott, Tony Wong, Erik Muller, Jorge L. Pineda, Annie Hughes, Lister Staveley-Smith, Ulrich Klein, Akira Mizuno, Silvana Nikolić, Roy S. Booth, Arto Heikkilä, Lars-Åke Nyman, Mikael Lerner, Guido Garay, Sungeun Kim, Motosuji Fujishita, Tokuichi Kawase, Monicá Rubio, and Yasuo Fukui
The Astrophysical Journal Supplement Series 175 No 2, 485-508 (2008)

Multi-wavelength observations of a nearby multi-phase interstellar cloud
C. Nehmé, C. Gry, F. Boulanger, J. Le Bourlot, G. Pineau des Forêts, E. Falgarone
Astronomy & Astrophysics 483 2, 471-484 (2008)

High-resolution CO observations towards the bright eastern knot of the SNR Puppis A
S. Paron, G. Dubner, E. Reynoso, M. Rubio
Astronomy and Astrophysics 480 2, 439-443 (2008)

The multiwavelength variability of 3C 273
S. Soldi et al.
Astronomy & Astrophysics 486 2, 411-425 (2008)

Astronomy: VLBI

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

Shell Revealed in SN 1979C
N. Bartel and M. F. Bietenholz
The Astrophysical Journal 682 No 2, 1065-1069 (2008)

A multi-epoch VLBI survey of the kinematics of CJF sources. II: analysis of the kinematics
Britzen, S., Vermeulen, R.C., Campbell, R.M., Taylor, G.B., Pearson, T.J., Readhead, A.C.S., Xu, W., Browne, I.W.A., Henstock, D.R., & Wilkinson, P.
Astronomy and Astrophysics, 484, 119 (2008)

The VSOP 5 GHz Active Galactic Nucleus Survey. V. Imaging Results for the Remaining 140 Sources
R. Dodson, E. B. Fomalont, K. Wiik, S. Horiuchi, H. Hirabayashi, P. G. Edwards, Y. Murata, Y. Asaki, G. A. Moellenbrock, W. K. Scott, A. R. Taylor, L. I. Gurvits, Z. Paragi, S. Frey, Z.-Q. Shen, J. E. J. Lovell, S. J. Tingay, M. J. Rioja, S. Fodor, M. L. Lister, L. Mosoni, G. Coldwell, B. G. Piner, and J. Yang
The Astrophysical Journal Supplement Series 175, 314-355 (2008)

High-resolution double morphology of the most distant known radio quasar at $z = 6.12$
S. Frey, L. I. Gurvits, Z. Paragi, K. É. Gabányi
Astronomy & Astrophysics 484 3, L39-L42 (2008)

Deep extragalactic VLBI-optical survey (DEVOS) - II. Efficient VLBI detection of SDSS quasars

S. Frey, L. I. Gurvits, Z. Paragi, L. Mosoni, M. A. Garrett, S. T. Garrington
Astronomy and Astrophysics 477 3, 781-787 (2008)

The jet of Markarian 501 from millions of Schwarzschild radii down to a few hundreds

M. Giroletti, G. Giovannini, W. D. Cotton, G. B. Taylor, M. A. Pérez-Torres, M. Chiaberge, P. G. Edwards
Astronomy and Astrophysics 488 3, 905-914 (2008)

European VLBI Network observations of 6.7-GHz methanol masers in a candidate circumstellar disc

L. Harvey-Smith, R. Soria-Ruiz
Mon. Not. R. Astron. Soc. 391, 1273–1278 (2008)

Opacity in compact extragalactic radio sources and its effect on astrophysical and astrometric studies

Y. Y. Kovalev, A. P. Lobanov, A. B. Pushkarev, J. A. Zensus
Astronomy & Astrophysics 483 3, 759-768 (2008)

A Global 86 GHz VLBI Survey of Compact Radio Sources

Sang-Sung Lee, Andrei P. Lobanov, Thomas P. Krichbaum, Arno Witzel, Anton Zensus, Michael Bremer, Albert Greve, and Michael Grewing
The Astronomical Journal 136 No 1, 159-180 (2008)

The compact structure of radio-loud broad absorption line quasars

Liu, Y., Jiang, D.R., Wang, T.G., Xie, F.G.
Monthly Notices of the Royal Astronomical Society, 391, 246 (2008)

Geodesy: VLBI

Publications related to VLBI observations including the 20 m telescope in Onsala.

Diurnal and semidiurnal atmospheric tides observed by co-located GPS and VLBI measurements.

Jin, S., Y. Wu, Y., Heinkelmann, R., and Park, J.
Journal of Atmospheric and Solar-Terrestrial Physics, 70, 1366–1372,
doi:10.1016/j.jastp.2008.04.005 (2008)

Estimation of Earth interior parameters from a Bayesian inversion of very long baseline interferometry nutation time series.

Koot, L., Rivoldini, A., de Viron, O., and Dehant, V.
Journal of Geophysical Research, 113, B08414, doi:10.1029/2007JB005409 (2008)

Earth's precession nutation motion: the error analysis of the theories IAU 2000 and IAU 2006 applying the VLBI data of the years 1984–2006.

Krasinsky, G.A.
Celestial Mechanics and Dynamical Astronomy, 101(4), 325–336, doi:10.1007/s10569-008-9150-9 (2008)

On comparison of the Earth orientation parameters obtained from different VLBI networks and observing programs.

Malkin, Z.

Journal of Geodesy, doi:10.1007/s00190-008-0265-2 (2008)

On the accuracy assessment of celestial reference frame realizations.

Malkin, Z.

Journal of Geodesy, 82:325–329, doi:10.1007/s00190-007-0181-x (2008)

Geodesy: GNSS

Long-term trends in the atmospheric water vapor content estimated from ground-based GPS data.

Nilsson, T. and Elgered, G.

Journal of Geophysical Research, 113, D19101, doi:10.1029/2008JD010110 (2008)

Aeronomy: Odin

Aeronomy publications related to Odin.

SASKTRAN: A spherical geometry radiative transfer code for efficient estimation of limb scattered sunlight

Bourassa, A.; Degenstein, D. & Llewellyn, E.

Journal of Quantitative Spectroscopy and Radiative Transfer **109**, 52-73 (2008)

Satellite Limb-Scatter Observations of Stratospheric NO₂ and O₃

Brohede, S.

PhD thesis, Chalmers. (2008)

Odin stratospheric proxy NO_y measurements and climatology

Brohede, S.; McLinden, C. A.; Urban, J.; Haley, C. S.; Jonsson, A. I. & Murtagh, D.

Atmospheric Chemistry and Physics Discussions **8**(2), 5847-5899 (2008)

Satellite measurements of upper tropospheric water

Ekström, M.

PhD thesis, Chalmers. (2008)

Comparison of satellite limb-sounding humidity climatologies of the uppermost tropical troposphere

Ekström, M.; Eriksson, P.; Read, W. G.; Milz, M. & Murtagh, D. P.

Atmospheric Chemistry and Physics **8**(2), 309-320 (2008)

Comparison between early Odin-SMR, Aura MLS and CloudSat retrievals of cloud ice mass in the upper tropical troposphere

Eriksson, P.; Ekström, M.; Rydberg, B.; Wu, D. L.; Austin, R. T. & Murtagh, D. P.

Atmospheric Chemistry and Physics **8**(7), 1937-1948 (2008)

Noctilucent Clouds in a Coupled Atmosphere

Karlsson, B.

PhD thesis, Department of Meteorology, Stockholm University (2008)

Inter-hemispheric mesospheric coupling in a comprehensive middle atmosphere model.

Journal of Atmospheric and Solar-Terrestrial Physics

Karlsson, B.; McLandress, C. & Shepherd, T., G.

Journal of Atmospheric and Solar-Terrestrial Physics (2008)

On Numerical Tracer Advection in the Stratosphere and Assimilation of Data from Satellites

Rösevall, J. D.

PhD thesis, Chalmers. (2008)

Pressure broadening coefficients of the water vapor lines at 556.936 and 752.033 GHz

Seta, T.; Hoshina, H.; Kasai, Y.; Hosako, I. and Otani, C.; Loßow, S.; Urban, J.; Ekström, M.; Eriksson, P. & Murtagh, D.

Journal of Quantitative Spectroscopy and Radiative Transfer **109**, 144-150 (2008)

Validation of the Atmospheric Chemistry Experiment (ACE) version 2.2 temperature using ground-based and space-borne measurements

Sica, R. J.; Izawa, M. R. M.; Walker, K. A.; Boone, C.; Petelina, S. V.; Argall, P. S.; Bernath, P.; Burns, G. B.; Catoire, V.; Collins, R. L.; Daffer, W. H.; De Clercq, C.; Fan, Z. Y.;

Firanski, B. J.; French, W. J. R.; Gerard, P.; Gerding, M.; Granville, J.; Innis, J. L.; Keckhut, P.; Kerzenmacher, T.; Klekociuk, A. R.; Kyrö, E.; Lambert, J. C.; Llewellyn, E. J.; Manney, G. L.;

McDermid, I. S.; Mizutani, K.; Murayama, Y.; Piccolo, C.; Raspollini, P.; Ridolfi, M.; Robert, C.; Steinbrecht, W.; Strawbridge, K. B.; Strong, K.; Stübi, R. & Thurairajah, B.

Atmospheric Chemistry and Physics **8**(1), 35-62 (2008)

Description and validation of a limb scatter retrieval method for Odin/OSIRIS

Tukiainen, S.; Hassinen, S.; Seppälä, A.; Auvinen, H.; Kyrölä, E.; Tamminen, J.; Haley, C. S.; Lloyd, N. & Verronen, P. T.

Journal of Geophysical Research **113**, D04308 (2008)

Technology: receiver development etc.

Al/Nb Interface Study Based on the Analysis of the Energy Spectra of Reflected Electrons

V. P. Afanas'ev, A. V. Lubenchenko, A. B. Pavolotskii

Journal of Surface Investigation. X-ray, Synchrotron and Neutron Techniques, Vol. 2, No. 5 (2008), pp. 790–795 (2008)

ALMA Band 5 (163-211 GHz) Sideband Separating Mixer Design

B. Billade, I. Lapkin, R. Monje, A. Pavolotsky, V. Vassilev, J.Kooi, and V. Belitsky

Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 250-252 (2008)

Microfabrication Technology for All-Metal Sub-mm and THz Waveguide Receiver Components

V. Desmaris, D. Meledin, A. Pavolotsky, and V. Belitsky
the Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 343-345 (2008)

All-metal micromachining for the fabrication of sub-millimetre and THz waveguide components and circuits

V. Desmaris, D. Meledin, A. Pavolotsky, R. Monje, and V. Belitsky
J. Micromech. Microeng., vol. 18, Art. ID 095004 (2008)

Nb₃Al thin film deposition for low-noise terahertz electronics

D. Dochev, A. B. Pavolotsky, V. Belitsky and H. Olofsson
Journal of Physics: Conference Series 97, 012072 (2008)

Optics Design and Verification for the APEX Single-Pixel Heterodyne Facility Instrument

I. Lapkin, O. Nyström, V. Belitsky, V. Desmaris, D. Dochev, S.-E. Ferm, D. Henke, D. Meledin, R. Monje, M. Strandberg, E. Sundin and V. Vassilev
the Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 351-357 (2008)

Study of Nb/Al interface combining spectroscopy of reflected electrons with ion sputtering

A. V. Lubenchenko, V. P. Afanas'ev, M. V. Lukashevsky, M. Norell, A. B. Pavolotsky and S. D. Fedorovich,
Journal of Physics: Conference Series 97, 012210 (2008)

APEX Band 2 1.25 – 1.39 THz Waveguide Balanced HEB Receiver

D. Meledin, V. Desmaris, S.-E. Ferm, M. Fredrixon, D. Henke, I. Lapkin, O. Nyström, A. Pavolotsky, M. Strandberg, E. Sundin and V. Belitsky
Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 181-185 (2008)

RF Performance of a 600 - 720 GHz Sideband-Separating Mixer with All-Copper Micromachined Waveguide Mixer Block

F.P. Mena, J. Kooi, A.M. Baryshev, C.F.J. Lodewijk, T.M. Klapwijk, W. Wild, V. Desmaris, D. Meledin, A. Pavolotsky, and V. Belitsky
Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 90-92 (2008)

A 0.5 THz Sideband Separation SIS Mixer for APEX Telescope

R. Monje, V. Belitsky, V. Vassilev, A. Pavolotsky, I. Lapkin, V. Desmaris, D. Meledin, D. Henke, D. Dochev
the Proceedings of the 19th International Symposium on Space Terahertz Technology, Groningen, April 28-30, p. 439-443 (2008)

Design and Characterization of a 211-275 GHz Sideband Separating Mixer for the APEX Telescope

Vassilev, V.; Henke, D.; Lapkin, I.; Nyström, O.; Monje, R.; Pavolotsky, A.; Belitsky, V.
IEEE Microwave and Wireless Components Letters, pp.55-60, Vol. 18, Number 1 (2008)

Swedish heterodyne facility instrument for the APEX telescope

V. Vassilev, D. Meledin, I. Lapkin, V. Belitsky, O. Nyström, D. Henke, A. Pavolotsky, R. Monje, C. Risacher, M. Olberg, M. Strandberg, E. Sundin, M. Fredrixon, S.-E. Ferm, V. Desmaris, D. Dochev, M. Pantaleev, P. Bergman, and H. Olofsson
Astronomy and Astrophysics, A&A 490, pp. 1157-1163 (2008)

Physical Optics Analysis of the ALMA Band 5 Front End Optics

M. Whale, N. Trappe, I. Lapkin, V. Belitsky
Proceedings 19th International Symp. on Space Terahertz Technology, Groningen, April, p. 368-372 (2008)

Millimetron - a large Russian-European submillimeter space observatory

W. Wild, N.S. Kardashev, S.F. Likhachev, N.G. Babakin, V.Y. Arkhipov, I.S. Vinogradov, V.V. Andreyanov, S.D. Fedorchuk, N.V. Myshonkova, Y.A. Aleksandrov, I.D. Novokov, G.N. Goltsman, A.M. Cherespaschuk, B.M. Shustov, A.N. Vystavkin, V.P. Koshelets, V.F. Vdovin, Th. de Graauw, F. Helmich, F.F.S. van der Tak, R. Shipman, A. Baryshev, J.R. Gao, P. Khosropanah, P. Roelfsema, P. Barthel, R. Liseau, V. Belitsky
Experimental Astronomy, <http://dx.doi.org/10.1007/s10686-008-9097-6>, p. 17W (2008)