

The physics of the interstellar medium MN1
Essay and Presentation
HT 2004

- Suggestions for topics
 - Organic molecules in interstellar space
 - Generation of interstellar magnetic fields
 - Structure and dynamics of giant molecular clouds
 - Hydrodynamics in the interstellar medium
 - The star formation process
 - Spallation processes and the formation of light elements
 - The fundamental seed molecule H_3^+
 - H_2 formation
 - What is an ultra compact HII region (UCHR)?
 - Origin and evolution of the intergalactic medium
 - Interactions between stars and the interstellar medium
 - Formation of natural masers (lasers)
 - Cosmic recycling and the chemical evolution of elements
 - Chemical composition of the ISM
 - ISM in other galaxies
 - Your own ideas...
- 2 – 5 pages (work load $\sim$ 4 days)
- Oral presentation 5+5 minutes
- Suggestions for sources: A&A, ApJ, MNRAS, Nature, Science, New Scientist, the web etc.;
http://cdsads.u-strasbg.fr/abstract_service.html;
<http://arxiv.org/archive/astro-ph/>; for most recent works e.g. list of accepted papers from astro-ph on next pages

2002MNRAS.335L..45K

Authors: Kamp, Inga; Paunzen, Ernst

Title: The lambda Bootis phenomenon: interaction between a star and a diffuse interstellar cloud

2003ApJ...584..331G

Authors: Glover, Simon C. O.

Title: Comparing Gas-Phase and Grain-catalyzed H₂ Formation

astro-ph/0408249

Title: A reappraisal of the chemical composition of the Orion nebula based on VLT echelle spectrophotometry

Authors: C. Esteban, M. Peimbert, J. Garcia-Rojas, M.T. Ruiz, A. Peimbert, M. Rodriguez

Comments: 21 pages, 15 tables, 5 figures. Accepted for publication in MNRAS

astro-ph/0408309

Title: Small-Scale Structure of O VI Interstellar Gas in the Direction of the Globular Cluster NGC 6752

Authors: N. Lehner (UW-Madison), & J. C. Howk (UC-San Diego)

Comments: Accepted for publication in the PASP (to appear in the October 2004 issue)

astro-ph/0408325

Title: Properties and environment of the molecular complex near Holmberg IX

Authors: F. Boone (1), N. Brouillet (2), S. Huettemeister (1), C. Henkel (3), J. Braine (2), D. J. Bomans (1), F. Herpin (2), Z. Banhidi (1), M. Albrecht (1) ((1) AIRUB, (2) Observatoire de Bordeaux, (3) MPIfR)

Comments: 13 pages, 11 figures, accepted for publication in A&A

astro-ph/0408433

Title: On the Origin of the Wide HI Absorption Line Toward Sgr A*

Authors: K. S. Dwarakanath (RRI), W. M. Goss (NRAO), J. H. Zhao (CfA), C. C. Lang (U. Iowa)

Comments: LaTeX, 12 pages and 9 figures, accepted for publication in J. Astrophys. Astr

astro-ph/0408501

Title: The gas temperature in the surface layers of protoplanetary disks

Authors: I. Kamp, C.P. Dullemond

Comments: 28 pages, 8 figures, accepted for publication in ApJ

astro-ph/0409014

Title: An optical absorption study of the Helix Planetary Nebula: NaI and CaII lines, and a search for diffuse bands

Authors: N. Maunon and T.R. Kendall

Comments: 9 pages, 4 figs (1 available by ftp); accepted by Astron. Astrophys

astro-ph/0409153

Title: HI Observations of an Ultra-Compact High-Velocity Cloud

Authors: C. Bruens, T. Westmeier

Comments: 5 pages, 3 figures, accepted for publication in A&A Letters

astro-ph/0409164

Title: Intermediate-velocity gas observed towards the Shajn 147 SNR

Authors: S. Sallmen (UWisc-La Crosse) and B.Y. Welsh (SSL, UC Berkeley)

Comments: 11 pages, 5 figures, Latex, accepted for publication in A&A

astro-ph/0409271

Title: The Nature of the Molecular Environment within 5 pc of the Galactic Center

Authors: R. M. Herrnstein and P. T. P. Ho

Comments: 51 pages, 16 figures, accepted for publication in ApJ. Due to size limitations, some of the images have been cut from this version. A complete, color PS or PDF version can be downloaded from <http://www.astro.columbia.edu/~herrnstein/NH3/paper/>

astro-ph/0409334

Title: ISO observations of the Galactic center Interstellar Medium: ionized gas

Authors: N. J. Rodriguez-Fernandez (LERMA, Obs.Paris, France), J. Martin-Pintado (DAMIR, CSIC, Spain)

Comments: Accepted by A&A

astro-ph/0409352

Title: Nebular and stellar properties of a metal poor HII galaxy at $z=3.36$

Authors: Montse Villar-Martin, Miguel Cervino, Rosa Gonzalez Delgado (IAA-CSIC, Spain)

Comments: 12 pages, 1 figure. Accepted for publication in MNRAS

astro-ph/0409410

Title: Massive Star Formation in the W49 Giant Molecular Cloud: Implications for the Formation of Massive Star Clusters

Authors: N. L. Homeier & J. Alves

Comments: Accepted for publication in Astronomy & Astrophysics

astro-ph/0410029

Title: Detecting cold H₂ globules in the outer Galactic disc by microlensing towards the Maffei 1 elliptical

Authors: R. Fux

Comments: 12 pages, 6 figures. Accepted for publication in A&A

astro-ph/0410033

Title: Deuterated molecular hydrogen in the Galactic ISM. New observations along seven translucent sightlines

Authors: S. Lacour, M. K. Andre, P. Sonnentrucker, F. Le Petit, D. E. Welty, J.-M. Desert, R. Ferlet, E. Roueff and D. G. York

Comments: Accepted in A&A

astro-ph/0410091

Title: The interstellar C¹⁸O/C¹⁷O ratio in the solar neighbourhood: The rho Oph cloud

Authors: J.G.A. Wouterloot (JAC, Hilo), J. Brand (IRA, Bologna), C. Henkel (MPIfR, Bonn)

Comments: 13 pages, 9 figures; accepted for publication in A&A

astro-ph/0410316

Title: Evaluating the Magnetic Field Strength in Molecular Clouds

Authors: Martin Houde

Comments: 10 pages, 1 figure, accepted for publication in the ApJ Letters

astro-ph/0410405

Title: Physics of Outflows: the Binary Protostar L1551 IRS5 and its Jets

Authors: R. Liseau (1), C. V. M. Fridlund (2) and B. Larsson (1) ((1) Stockholm Observatory, (2) ESA-ESTEC)

Comments: 25 pages, 7 Postscript figures (3 in colour). Accepted by the Astrophysical Journal (tentatively scheduled issue ApJ 1 February 2005)

astro-ph/0410415

Title: Expansive components in H II regions

Authors: M. Relano and J. E. Beckman

Comments: 16 pages, 9 figures, accepted for publication in A&A

astro-ph/0410484

Title: The internal dynamical equilibrium of HII regions: a statistical study

Authors: M. Relano, J. E. Beckman, A. Zurita, M. Rozas and C. Giammanco

Comments: 19 pages, 10 figures, accepted for publication in A&A

astro-ph/0410515

Title: Deuterated Thioformaldehyde in the Barnard 1 Cloud

Authors: N. Marcelino, J. Cernicharo, E. Roueff, M. Gerin and R. Mauersberger

Comments: 33 pages, 6 figures, accepted for publication in ApJ

astro-ph/0410577

Title: The OH (1720 MHz) Supernova Remnant Masers in W28: MERLIN and VLBA Polarization Observations

Authors: Ian M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen

Comments: AASTeX, 50 pages, 16 figures (four bitmapped for arXiv), 8 tables; accepted to ApJ

astro-ph/0410598

Title: Probing the Surfaces of Interstellar Dust Grains: The Adsorption of CO at Bare Grain Surfaces

Authors: Helen J. Fraser, Suzanne E. Bisschop, Klaus M. Pontoppidan, Alexander G.G.M. Tielens & Ewine F. van Dishoeck

Comments: 19 pages inc. 3 figures 2 tables, accepted for publication in MNRAS

astro-ph/0410604

Title: Spherical Infall in G10.6-0.4: Accretion Through an Ultracompact HII Region

Authors: Peter K. Sollins, Qizhou Zhang, Eric Keto, Paul T. P Ho

Comments: Accepted for publication in Astrophysical Journal Letters

astro-ph/0410627

Title: A High Galactic Latitude HI 21cm-line Absorption Survey using the GMRT: II. Results and Interpretation

Authors: Rekshesh Mohan, K.S. Dwarakanath and G. Srinivasan

Comments: 19 pages, 19 figures. Accepted for publication in Journal of Astrophysics & Astronomy