THE MAGELLANIC CLOUDS NEWSLETTER
An electronic exchange on Magellanic Clouds research

Edited by Bryan C. Dunne
Co-Editors Eva K. Grebel and You-Hua Chu
mcnews@astro.uiuc.edu

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Letter From The Editor

Dear Colleagues,

The Magellanic Clouds Working Group is pleased to bring you issue 69 of the Magellanic Clouds Newsletter. This month, we present 9 submitted abstracts, a dissertation summary from Charles Danforth, an announcement for an upcoming ESO Workshop, a new postdoctoral job opening at the University of Basel, and a collection of recent astro-ph listings of interest to Magellanic Clouds researchers. As always, this month’s issue is available from the MCWG Website in a variety of formats (PDF, HTML, PostScript, and \LaTeX{}). In addition, we’d like to remind you that the latest information on upcoming meetings and job listings can be found on the MC News website (www.astro.uiuc.edu/projects/mcnews/MCNews.shtml).

Best Wishes,
Bryan Dunne
Editor, MC News
Abstracts of Refereed Papers

VLT observations of the highly ionized nebula around Brey2
Y. Nazé (1), G. Rauw (1), J. Manfroid (1), Y.-H. Chu (2), and J.-M. Vreux (1)

(1) Institut d' Astrophysique et de Géophysique, Université de Liège, Belgium
(2) Astronomy Department, University of Illinois at Urbana-Champaign, USA

We present the first high resolution HeII λ4686 images of the high excitation nebula around the WR star Brey 2 in the LMC. This nebula presents a striking morphology: a small arc-like feature some 3.6 pc in radius is particularly prominent in the HeII λ4686 line. We further discover a previously unknown faint HeII emission that extends over an area of 22×17 pc². An even fainter HeII emission is apparently associated with the interstellar bubble blown by the progenitor of Brey2. The total HeII flux corresponds to an ionizing flux of 4×10⁴⁷ photons s⁻¹. Ha, [OIII], and HeI λ5876 images and long-slit spectra are also examined in this letter, enabling us to investigate the detailed physical properties at various locations of the nebula.

Comments: Accepted by A&A Letters, also available as astroph/0302515
WWW: http://vela.astro.ulg.ac.be/Preprints/P80/index.html
e-mail: naze@astro.ulg.ac.be

XMM-Newton observations of High Mass X-ray Binaries in the SMC
Manami Sasaki (1,2), Wolfgang Pietsch (2), and Frank Haberl (2)

(1) Harvard-Smithsonian CfA
(2) Max-Planck-Institut für extraterrestrische Physik

Based on XMM-Newton EPIC data of four pointings towards the Small Magellanic Cloud (SMC), results on timing and spectral analyses of 16 known high mass X-ray binaries (HMXBs) and HMXB candidates in the SMC are presented. We confirm the pulse periods of four sources which were known to show pulsations. In addition, two new X-ray pulsars are discovered: XMMU J005605.2-722200 with P_pulse = 140.1 ± 0.3 s and RX J0057.8-7207 with P_pulse = 152.34 ± 0.05 s. Due to the low Galactic foreground absorption, X-ray binary systems in the Magellanic Clouds are well suited for studies of the soft component in their X-ray spectrum. Spectral analysis reveals soft emission besides a power law component in the spectra of three sources. The existence of emission lines in at least one of them corroborates the thermal nature of this emission with temperatures of 0.2–0.3 keV and heavy element abundances lower than solar. For the HMXB SMC X-2 which was in a low luminosity state, we determine a flux upper limit of 1.5×10⁻¹⁴ erg cm⁻² s⁻¹ (0.3–10.0 keV). Furthermore, two new sources (XMMU J005735.7-721932 and XMMU J010030.2-722035) with hard spectrum and emission line objects as likely optical counterparts are proposed as new X-ray binary candidates.

Comments: Accepted by A&A
e-mail: msasaki@cfa.harvard.edu
The superwind mass-loss rate of the metal-poor carbon star
LI-LMC 1813 in the LMC cluster KMHK 1603

Jacco Th. van Loon (1), Jonathan R. Marshall (1), Mikako Matsuura (2), and Albert A. Zijlstra (2)

(1) Astrophysics Group, School of Chemistry & Physics, Keele University, Staffordshire, UK
(2) UMIST, Department of Physics, P.O. Box 88, Manchester, UK

LI-LMC 1813 is a dust-enshrouded Asymptotic Giant Branch (AGB) star, located in the small open cluster KMHK 1603 near the rim of the Large Magellanic Cloud (LMC). Optical and infrared photometry between 0.5 and 60 μm is obtained to constrain the spectral energy distribution of LI-LMC 1813. Near-infrared spectra unambiguously show it to be a carbon star. Modelling with the radiation transfer code Dusty yields accurate values for the bolometric luminosity, \( L = 1.5 \times 10^4 \, L_\odot \), and mass-loss rate, \( \dot{M} = 3.7(\pm1.2) \times 10^{-5} \, M_\odot \, yr^{-1} \). On the basis of colour-magnitude diagrams, the age of the cluster KMHK 1603 is estimated to be \( t = 0.9-1.0 \, Gyr \), which implies a Zero-Age Main Sequence mass for LI-LMC 1813 of \( M_{\text{ZAMS}} = 2.2 \pm 0.1 \, M_\odot \). This makes LI-LMC 1813 arguably the object with the most accurately and reliably determined (circum)stellar parameters amongst all carbon stars in the superwind phase.

Comments: Accepted for publication in MNRAS

E-mail: acco@astro.keele.ac.uk

Eclipsing binaries in the Magellanic Clouds. uvby CCD light curves and photometric analyses for HV982 (LMC), HV12578 (LMC), HV1433 (SMC), and HV11284 (SMC)

J.V. Clausen (1), J. Storm (2), S.S. Larsen (3), and A. Gimenez (4)

(1) Niels Bohr Institute for Astronomy, Physics, and Geophysics, Astronomical Observatory, Copenhagen University, Denmark
(2) Astrophysicalisches Institut Potsdam, Germany
(3) European Southern Observatory, Garching, Germany
(4) Research and Scientific Support Department, ESA, ESTEC, Nordwijk, The Netherlands

We present new accurate CCD uvby light curves for the LMC eclipsing binaries HV982 and HV12578, and for the SMC systems HV1433 and HV11284 obtained at the Danish 1.5m telescope at ESO, La Silla. The light curves were derived from DoPHOT photometry, and typical accuracies are between 0.007 and 0.012 mag per point. Standard uvby indices have also been established for each binary, primarily for determination of interstellar reddening and absorption. For HV982 and HV12578, accurate photometric elements have been established. Both systems consist of two detached components of comparable sizes in an eccentric orbit. Adopting the spectroscopic elements given by Fitzpatrick et al. 2002 for HV982, we derive absolute dimensions of its components which agree well with their results. A distance modulus of \( V_0-M_V = 18.63 \pm 0.08 \) is obtained, corresponding to a distance of \( 52.6 \pm 2.0 \, \text{kpc} \), which is in formal agreement with (although slightly larger than) their determination. HV1433 and HV11284 both consist of two rather close, deformed and quite different stars. As the mass ratios between the components (and their rotation rates) are not known, definitive
photometric elements can not yet be obtained, but we present a sample of possible photometric solutions. In a series of forthcoming papers we will combine our uvby observations with high-dispersion spectra from the UVES spectrograph on the ESO Very Large Telescope (VLT) and present absolute dimensions, chemical abundances and distances for selected LMC and SMC systems, including HV12578 and refined results for HV982.

Comments: Accepted for publication in Astronomy & Astrophysics
e-mail: jve@astro.ku.dk

Variable Stars in the Small Magellanic Cloud: Results from OGLE and SIRIUS

Yoshifusa Ita (1), Toshihiko Tanabe (1), Noriyuki Matsunaga (1), Yasushi Nakajima (1), Chie Nagashima (2), Takahiro Nagayama (2), Daisuke Kato (2), Mikio Kurita (2), Tetsuya Nagata (2), Shuji Sato (2), Motohide Tamura (3), Hidehiko Nakaya (4), and Yoshikazu Nakada (1,5)

(1) Institute of Astronomy, School of Science, The University of MITA, Tokyo, Japan
(2) Department of Astrophysics, Nagoya University, Chikusa-ku, Nagoya, Japan
(3) National Astronomical Observatory of Japan, Mitake, Tokyo, Japan
(4) Subaru Telescope, National Astronomical Observatory of Japan, Hilo, HI, USA
(5) Kiso Observatory, School of Science, The University of Tokyo, Mitake, Kiso, Nagano, Japan

We have performed a cross-identification between OGLE-II data and single-epoch SIRIUS near-infrared (NIR) survey data in the 1 square degree area of the central part of the SMC, and found 6,103 matches. After eliminating obvious spurious variables, variables with too few good data and variables that seem to have periods longer than the available baseline of the OGLE-II data, we determined the pulsation periods for 2,927 variables. We found that the variable red giants in the SMC form four parallel sequences in the period-K magnitude plane, just like those found by Wood (2000) in the LMC. Because the K magnitude distribution of variable red giants in the Magellanic Clouds have two peaks (Ita et al. 2002), we subdivided them into two groups; one is with luminosities brighter than those of the tip of the first giant branch (TRGB) and the other is fainter than that. The latter variables showed irregular or semi-regular light variations with short periods and small amplitudes. The colour-magnitude diagram showed that they accumulate at the exact location of the TRGB. The former group showed the general tendency that as the periods get longer, the amplitudes get larger, the colours get redder and the light variations get more regular along the Whitelock's evolutionary path (Whitelock 1986).

Comments: Submitted to MNRAS
e-mail: yita@ioa.s.u-tokyo.ac.jp
Obscured Asymptotic Giant Branch Variables in the Large Magellanic Cloud and the Period-Luminosity Relation

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(2) Astronomy Department, University of Cape Town, South Africa
(3) Astrophysics Group, School of Chemistry & Physics, Keele University, Staffordshire, UK
(4) Department of Physics, UMIST, Manchester, UK

The characteristics of oxygen-rich and carbon-rich, large amplitude ($\Delta K > 0.4$ mag), asymptotic giant branch variables in the Large Magellanic Clouds are discussed, with an emphasis on those obscured by dust. Near-infrared photometry, obtained over about 8 years, is combined with published mid-infrared observations from IRAS and ISO to determine bolometric magnitudes for 42 stars. Pulsation periods of the O-rich stars are in the range $116 < P < 1393$ days, while those for C-rich stars have $298 < P < 939$ days. In addition to the regular pulsations, one O-rich star and four C-rich stars show large amplitude, $\Delta K > 0.6$ mag, secular or very long period variations which may be associated with changes in their mass-loss rates. We discuss and compare various methods of determining the bolometric magnitudes and show, perhaps surprisingly, that most of the very long period stars seem to follow an extrapolation of the period-luminosity relation determined for stars with shorter periods - although the details do depend on how the bolometric magnitudes are calculated.

Three stars with thin shells, which are clearly more luminous than the obscured AGB stars, are undergoing hot bottom burning, while other stars with similar luminosities have yet to be investigated in sufficient detail to determine their status in this regard. We suggest that an apparent change in slope of the period luminosity relation around 400-420 days is caused by variables with luminosities brighter than the predictions of the core-mass luminosity relation, due to excess flux from hot bottom burning.

Comments: Accepted for MNRAS
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Testing Stellar Population Models with Star Clusters in the Large Magellanic Cloud

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(2) Department of Physics, Drexel University, Philadelphia, PA, USA
(3) Department of Physics, Durham University, South Road, Durham, UK

We present high signal-to-noise ratio integrated spectra of 24 star clusters in the Large Magellanic Cloud (LMC), obtained using the FLAIR spectrograph at the UK Schmidt telescope. The spectra have been placed on to the Lick/IDS system in order to test the calibration of Simple Stellar Population (SSP) models. We have compared the SSP-predicted metallicities of the clusters with those from the literature, predominantly taken from the Ca-triplet spectroscopy of Olszewski et al. (1991). We find that there is good agreement between the metallicities in the range $-2.10 \leq [\text{Fe/H}] \leq 0$. However,
the Mg2 index (and to a lesser degree Mg b) systematically predict higher metallicities (up to +0.5 dex higher) than \(<\text{Fe}\>). Among the possible explanations for this are that the LMC clusters possess \([\text{alpha}/\text{Fe}] > 0\). Metallicities are presented for eleven LMC clusters which have no previous measurements. We compare SSP ages for the clusters, derived from the H$\beta$, H$\gamma$ and H$\delta$ Lick/IDS indices, with the available literature data, and find good agreement for the vast majority. This includes six old globular clusters in our sample, which have ages consistent with their HST colour-magnitude diagram (CMD) ages and/or integrated colours. However, two globular clusters, NGC 1754 and NGC 2005, identified as old (~15 Gyr) on the basis of HST CMDs, have H$\beta$ line-strengths which lead ages that are too low (~8 and ~6 Gyr respectively). These findings are inconsistent with their CMD-derived values at the 3$\sigma$ level. Comparison between the horizontal branch morphology and the Balmer line strengths of these clusters suggests that the presence of blue horizontal branch stars has increased their Balmer indices by up to ~1.0 Å. We conclude that the Lick/IDS indices, used in conjunction with contemporary SSP models, are able to reproduce the ages and metallicities of the LMC clusters reassuringly well. The required extrapolations of the fitting functions and stellar libraries in the models to lower ages and low metallicities do not lead to serious systematic errors. However, owing to the significant contribution of horizontal branch stars to Balmer indices, SSP model ages derived for metal-poor globular clusters are ambiguous without a priori knowledge of horizontal branch morphology.

Comments: Published in MNRAS, June 2002
e-mail: mbeasley@astro.swin.edu.au

On the usefulness of finding charts Or the runaway carbon stars of the Blanco & McCarthy field 37

C. Loup (1), N. Delmotte (2,3), D. Egret (2), M.-R. Cioni (3), and F. Genova (2)

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(2) CDS, Observatoire Astronomique de Strasbourg, Université Louis Pasteur, Strasbourg, France
(2) ESO, Garching bei München, Germany

We have been recently faced with the problem of cross-identifying stars recorded in historical catalogues with those extracted from recent fully digitized surveys (such as DENIS and 2MASS). Positions mentioned in the old catalogues are frequently of poor precision, but are generally accompanied by finding charts where the interesting objects are flagged. Those finding charts are sometimes our only link with the accumulated knowledge of past literature. While checking the identification of some of these objects in several catalogues, we had the surprise to discover a number of discrepancies in recent works. The main reason for these discrepancies was generally the blind application of the smallest difference in position as the criterion to identify sources from one historical catalogue to those in more recent surveys. In this paper we give examples of such misidentifications, and show how we were able to find and correct them. We present modern procedures to discover and solve cross-identification problems, such as loading digitized images of the sky through the Aladin service at CDS, and overlaying entries from historical catalogues and modern surveys. We conclude that the use of good finding charts still remains the ultimate (though time-consuming) tool to ascertain cross-identifications in difficult cases.
Abstracts of Non-Refereed Papers

Microlensing towards the Magellanic Clouds: Nature of the Lenses and Implications for Dark Matter

Kailash C. Sahu
Space Telescope Science Institute, Baltimore, MD, USA

A close scrutiny of the microlensing results towards the Magellanic Clouds reveals that the stars within the Magellanic Clouds are major contributors as lenses, and the contribution of MACHOs to dark matter is 0–5%. The principal results which lead to this conclusion are the following. (i) Out of the ~17 events detected so far towards the Magellanic Clouds, the lens locations have been determined for four events where the lenses are most likely within the Magellanic clouds. (ii) If caused by MACHOs, the event timescales would imply that the MACHOs in the direction of the LMC and the SMC have masses of the order of 0.5–2 M⊙, respectively. This is inconsistent with even the most flattened model of the Galaxy. If caused by stars within the Magellanic Clouds, the masses of the lenses are of the order of 0.2 M⊙, for both the LMC as well as the SMC. (iii) The fact that the two observed binary events are caused by lenses within the Magellanic Clouds would suggest that there should be a total of ~20 events caused by lenses within the Magellanic Clouds. This implies that most of the microlensing events observed so far are probably caused by stars within the Magellanic Clouds. (iv) If the microlensing events are caused by MACHOs of 0.5 M⊙, ~15 events should have been detected by now towards the SMC, with timescales of ~40 days. The fact that both the events detected towards the SMC have been shown to be due to self-lensing places severe constraints on the MACHO contribution and suggests that the contribution of MACHOs to dark matter is consistent with zero, with an upper limit of 5%.

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Dissertation Summaries

Interstellar Matter Kinematics in the Magellanic Clouds

Charles W. Danforth
Johns Hopkins University

I study the ISM of the Magellanic Clouds using three different and complimentary datasets. The first is a set of 141 far-ultraviolet (FUV) spectra taken by the Far Ultraviolet Spectroscopic Explorer (FUSE) satellite of sight lines toward hot, OB stars in the Magellanic Clouds. I use these stars as background sources and study the absorption in the intervening ISM. Secondly, I use a collection of emission-line images of the Magellanic Clouds in Hα and red continuum light to provide a morphological context for the FUV absorption data. Finally, I present a set of 99 longslit echelle optical emission spectra to act as a bridge between the kinematics seen in the absorption spectra and the morphology seen in the images. I use the combination of optical images and optical spectra to classify each sight line into a set of morphological categories. The diagnostic power of this combined dataset is immense. I use these datasets to search for global patterns in the Magellanic ISM. In particular, I measure the velocities, widths, and column depths of the absorption features in five different FUV transitions and two optical transitions. Various other data from the literature is added to this and I search for correlations. The picture that emerges is one of a three-phase ISM with cold, warm, and hot phases. The kinematics and distribution of each phase bear little resemblance to each other. Additionally, I use the high resolution spectral data to perform two more focussed investigations on the global dataset. First, I study the ionization structure along sight lines, a good probe of temperature and radiation properties in the ISM. I find that the different morphological classes of objects exhibit different ionization characteristics and that the LMC and SMC show different ranges of ionization. I undertake a similar project to study dust depletion in the ISM of the Magellanic Clouds. Again, different classes of objects display different characteristic profiles and depletion values. Finally, I carry out two investigations of specific ISM structures using small subsets of the emission and absorption data. These show how detailed analysis of the data can shed unprecedented light on the structure and properties of the ISM at smaller scales. In the first case, I investigate the interaction between the ISM and the wind of the luminous blue variable S119 and determine that it is moving through the disk of the LMC at a high speed. In the second case, I use several emission and absorption spectra to probe the properties of the bright HII region N66 in the SMC and the supernova remnant (SNR-57-7226) which lies in front of it. I determine the three-dimensional geometry of the region, determine key shock parameters of the SNR, and find that the nebular ISM is fairly quiescent despite the many UV-bright, hot stars in the volume. The FUV flux from the many massive stars within the HII region photoionize the material in the SNR and make optical investigation very difficult. I discuss the implications of SNRs in HII regions and what effect this might have on the search for more distant objects.

Comments: Thesis Advisor: Dr. William P. Blair
WWW: http://fuse.pha.jhu.edu/~danforth/thesis/
e-mail: danforth@pha.jhu.edu
Meeting Announcements

ESO Workshop: Science with Adaptive Optics
September 16-19, 2003
Garching (near Munich), Germany

Over the past ten years, the concept of adaptive optics has matured from early experimental stages to a standard observing tool now available at many large optical and near-infrared telescope facilities. Indeed, adaptive optics has become an integral part of all present and future large telescope initiatives, and will be essential in exploiting the full potential of the large optical interferometers currently under construction. Adaptive optics has been identified as one of the key technologies for astronomy in the 21st century. Adaptive optics has already delivered exciting results covering areas from solar system astronomy (both the sun and the planetary system) over the star forming regions in the solar neighbourhood to Local Group galaxies and objects at cosmological distances. Recent highlights include:

○ Evolution of small scale structures on the solar surface
○ Discovery of binary asteroids and asteroids moons
○ High-resolution studies of circumstellar disks around young stars
○ Precise mass determination of the black hole in the Galactic Center
○ Spatially resolved studies of extragalactic stellar populations

The present meeting intends to bring together users of adaptive optics from all fields of astronomy to discuss the latest scientific results obtained with diverse adaptive optics systems and to exchange ideas on how to reduce and analyse such observations. This ESO workshop aims also at educating the general astronomical community in Europe on the unique science potential of adaptive optics for all branches of astronomy. We want to bring together researchers working in many different areas of astronomy in order to provide a comprehensive picture of the utilisation of adaptive optics in astronomy. Synergy effects are expected from the comparison of different observing and data analysis strategies.

Scientific Organizing Committee:
Co-chairs: Wolfgang Brandner (MPIA), Markus Kasper (ESO)
Danielle Alloin (ESO), Laird Close (Steward Obs., Tucson, USA), Tim Davidson (Herzberg Inst., Victoria, Canada), Reinhard Genzel (MPE, Germany), Thomas Henning (MPIA, Germany), Christoph Keller (NSO Tucson, USA), Anne-Marie Lagrange (LAOG, France), Simon Morris (Durham, UK), Francois Rigaut (Gemini, USA), Daniel Rouan (Obs. de Paris, France), Hans Zinnecker (AIP, Germany)

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Job Postings

Postdoctoral Research Position at the University of Basel

The Astronomical Institute of Basel University (www.astro.unibas.ch) invites applications for a postdoctoral research position with Prof. Eva K. Grebel to work on projects in one or several of the following areas: Galactic structure, stellar populations, chemical abundances and evolution, or the overall evolution of low-redshift galaxies. A publication record in one of the above areas and overlap with the research interests of other faculty members will be an asset. Existing large projects include an approved key project with the Space Interferometry Mission (SIM) for Galactic structure, participation in the RAdial Velocity Experiment (RAVE) for Galactic structure and chemical evolution, an ESO/VLT Large Programme for the kinematics and chemical evolution of Milky Way satellites, and a 200-orbit HST snapshot survey of nearby galaxies out to 5 Mpc. The successful applicant would be closely involved with these projects.

The appointment is for two years (contingent on grant renewal) with a possible extension based on performance and availability of funding. The starting date is negotiable but no earlier than October 1, 2003. The salary will be approximately CHF 60,000 - 65,000 (ca. USD 43,000 - 47,000) depending on research experience.

Basel is an international city in the German-speaking part of Switzerland, bordering both France and Germany, and is within easy reach of most European centers. The successful applicant will have access to ESO and ESA observatories. Funds will be available for travel.

Applicants should send a CV, a brief description of research experience, a statement of research interests, and a bibliography, and arrange for three letters of reference. There are no constraints on nationality, but the conditions of the funding agency require that applicants should be younger than 33 years. The search will remain open until the position is closed or filled.

Application Deadline: April 15th, 2003

Send Application Materials to:
Dr. Eva Grebel  
MPI for Astronomy  
Königstuhl 17  
D-69117 Heidelberg, Germany

E-mail inquiries: grebel@mpia.de

Affirmative Action/Equal Opportunity Employer
Recent astro-ph Listings

astro-ph/0303550:
Title: Light curve solutions for bright detached eclipsing binaries in SMC: absolute dimensions and distance indicators
Authors: Dariusz Graczyk (1) Institute of Astronomy, Zielona Gora, Poland (2) Centre for Astronomy, Nicolaus Copernicus University, Torun, Poland
Comments: 14 pages, 8 figures, LaTeX2e, accepted by MNRAS

astro-ph/0303494:
Title: XMM-Newton observations of High Mass X-ray Binaries in the SMC
Authors: Manami Sasaki (MPE, Harvard-Smithsonian CfA), Wolfgang Pietsch (MPE), Frank Haberl (MPE)
Comments: 17 pages, 16 figures, accepted by A&A

astro-ph/0303133:
Title: The complete Z-diagram of LMC I-2
Authors: A.P. Smale (1,2), J. Homan (3), E. Kuulkers (4) ((1) NASA/GSFC, (2) USRA, (3) Brera Observatory, Italy, (4) ESA/ESTEC)
Comments: 10 pages, 3 figures, accepted for publication in ApJ Main Journal

astro-ph/0303095:
Title: Variable Stars in the LMC: the Photometric Catalogue
Authors: M. Maio, G. Clementini, A. Bragaglia, E. Carretta, R. Gratton, L. Bi Fabrizio

astro-ph/0303091:
Title: The Physics of Supernova Remnant Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud
Authors: Farzad Chavamian, Cara E. Rakowski, John P. Hughes, T. B. Williams
Comments: 21 pages, including 8 postscript figures and 4 tables, LaTeX, accepted to ApJ; see companion paper

astro-ph/0303069:
Title: The Physics of Supernova Remnant Blast Waves. II: Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud
Authors: Cara E. Rakowski (1), Farzad Chavamian (1), John P. Hughes (1) ((1) Rutgers University)
Comments: 22 pages, including 11 postscript figs, LaTeX, accepted to ApJ, see companion paper

astro-ph/0303011:
Title: Distances to Local Group Galaxies
Authors: Alistair R. Walker

astro-ph/0302601:
Title: The red tail of carbon stars in the LMC: Models meet 2MASS and DENIS observations
Authors: P. Marigo, L. Girardi, C. Chiosi
Comments: To appear in A&A. 14 pages, better if printed in colour. A version with high-resolution figures may be found in this http URL

astro-ph/0302595:
Title: Eclipsing binaries in the Magellanic Clouds. uvby CCD light curves and photometric analyses for HV982 (LMC), HV12878 (LMC), HV1483 (SMC), and HV11284 (SMC)
Authors: J.Y. Clausen, J. Storm, S.S. Larsen, A. Gimenez
astro-ph/0302515:
Title: VLT observations of the highly ionized nebula around Brey2
Authors: Y. Naze (IAGL), G. Rauw (IAGL), J. Manfroid (IAGL), Y.-H. Chu (UIUC), J.-M. Vreux (IAGL)
Comments: 4 pages, 3 figures (2 in jpg), accepted by A&A Letters, also available from this http URL

astro-ph/0302458:
Title: The luminosity function of the Large Magellanic Cloud globular cluster NGC 1866
Authors: E. Brocato (1), V. Castellani (2,3), E. Di Carlo (1), G. Raimondo (1,4), A. R. Walker (5) (1) INAF-Ósoservatorio Astronomico di Collurania, Teramo, Italy; (2) INAF-Ósoservatorio Astronomico di Roma, Monte Porzio, Italy; (3) INFN-Ósez. Ferrara, Ferrara, Italy; (4) Univ. Roma "La Sapienza", Italy; (5) Cerro Tololo Inter-American Óbservatory, NOAA, Chile
Comments: AJ accepted, 16 pages, 19 figures, uses aastex.cls

astro-ph/0302325:
Title: Microlensing towards the Magellanic Clouds: Nature of the Lenses and Implications for Dark Matter
Authors: Kailash C. Sahu (Space Telescope Science Institute)

astro-ph/0302252:
Title: Bump Cepheids and the Stellar Mass-Luminosity Relation
Authors: Stefan C. Kellar
Comments: 6 pages, 2 figures, in "3D Stellar Structure" proceedings

astro-ph/0302246:
Title: Obscured Asymptotic Giant Branch Variables in the Large Magellanic Cloud and the Period-Luminosity Relation
Authors: Patricia A. Whitelock (South African Astronomical Óbservatory), Michael W. Feast (University of Cape Town), Jacco Th. van Loon (Kelee University), Albert A. Zijlstra (UMIST)
Comments: 20 pages, 20 figures, accepted for MNRAS

astro-ph/0302163:
Title: Review of Discrete X-Ray Sources in the Small Magellanic Cloud: Summary of the ASCA Results and Implication on the Recent Star Forming Activity
Authors: Jun Yokogawa (1), Kenmuke Imanishi (1), Masahiro Tsujimoto (1), Katsuji Koyama (1), Mamiko Nishiuchi (2) (1)Kyoto University, (2)Japan Atomic Energy Research Institute
Comments: 61 pages, 19 figures, to be published in PASJ. Also available at this http URL (with high-resolution images)

astro-ph/0302134:
Title: The Araucaria Project: Dependence of mean K, J, and I absolute magnitudes of red clump stars on metallicity and age
Authors: G. Pietrzy\{\n\}ski, W. Gieren, A. Udalski

astro-ph/0302083:
Title: The superwind mass-loss rate of the metal-poor carbon star LI-LMC 1813 in the LMC cluster KMM 1603
Authors: Jacco Th. van Loon (Kelee University, UK), Jonathan R. Marshall (Kelee), Mikako Matsura (UMIST, UK), Albert A. Zijlstra (UMIST)
Comments: Accepted for publication in MNRAS (better quality figure 1 on request from jacco)
astro-ph/0302051:
Title: 46B stars in the Magellanic Clouds. I. The C/M ratio
Authors: M.-R.L. Cioni, H.J. Habing
Comments: 9 pages, 8 figures, accepted by A&A

astro-ph/0302020:
Title: Constraining the third dredge-up via carbon stars in the Magellanic Clouds
Authors: L. Girardi, P. Marigo
Comments: in proceedings of the St. Luc conference ' 'CNQ in the Universe', eds. C.
Charbonnel, D. Schaerer, & G. Meynet, ASP Conference Series, in press

astro-ph/0302011:
Title: FUSE Snap-Shot Survey of O VI Variability in the Winds of 66 OB-Type Stars
Authors: N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, J. Zsargo
Comments: Accepted for publication in the ApJ

astro-ph/0301532:
Title: The distance to the LMC cluster NGC 1866 and the surrounding field
Authors: M. Salaris (1), S. Percival (1), E. Brocato (2), G. Raimondo (2,3), A. R. Walker (4)
((1) Liverpool John Moores University, UK; (2) INAF-Osservatorio Astronomico di Collurania,
Teramo, Italy; (3) Univ. Roma "La Sapienza", Italy; (4) Cerro Tololo Inter-American
Observatory, NOAO, Chile.)
Comments: 5 pages, incl. 1 figure, uses emulateapj.sty, ApJ accepted

astro-ph/0301489:
Title: A new clue to the transition mechanism between optical high and low states of the
supersoft X-ray source RX J0513.9-6951, implied from the recurrent nova CI Aquilae 2000
outburst model
Authors: Izumi Hachisu, Mariko Kato
Comments: 9 pages including 5 figures, to appear in the Astrophysical Journal

astro-ph/0301488:
Title: Dust Grain-Size Distributions From MRN to MEM
Authors: Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, K. A. Misselt
Comments: 24 pages, 5 figures, accepted for publication in the Astrophysical Journal

astro-ph/0301456:
Title: [Fe IV] emission in ionized nebulae
Authors: Monica Rodriguez (INAOE)
Comments: 23 pages, 3 figures, accepted for publication in ApJ, a new table and several
comments added

astro-ph/0301451:
Title: Spectroscopic analysis of newborn massive stars in SMC N81
Authors: F. Martins (1,2), D. Schaerer (1,2), M. Heydari-Malayeri (3), ((1) LAT-OMP,
Toulouse, (2) Geneva Observatory, Sauverny, (3) Observatoire de Paris, Paris))
Comments: A massive star odyssey : from main sequence to supernovae, Proc. IAU Symp.
212, K.A. van der Hucht, A. Herrero, C. Esteban eds, ASP conf. series, in press

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