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1 ABSTRACTS OF RECENTLY ACCEPTED PAPERS

Resumos de artigos aceites recentemente

2MASS wide field extinction maps. II. The Ophiuchus and the Lupus cloud complexes

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We present an extinction map of a 1700 deg sq region that encloses the Ophiuchus, the Lupus, and the Pipe dark complexes using 42 million stars from the Two Micron All Sky Survey (2MASS) point source catalog. The use of a robust and optimal near-infrared method to map dust column density (nicer, described in Lombardi & Alves 2001, A&A, 377, 1023) allow us to detect extinction as low as $A_K = 0.05$ mag with a $2\text{-}\sigma$ significance, and still to have a resolution of 3 arcmin on our map. We also present a novel, statistically sound method to characterize the small-scale inhomogeneities in molecular clouds. Finally, we investigate the cloud structure function, and show that significant deviations from the results predicted by turbulent models are observed.

Accepted by: Astronomy & Astrophysics, Volume 489, Issue 1, 2008, pp.143-156

<http://arxiv.org/abs/0809.3740>

Misaligned spin-orbit in the XO-3 planetary system?

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The transiting extrasolar planet XO-3b is remarkable, with a high mass and eccentric orbit. These unusual characteristics make it interesting to test whether its orbital plane is parallel to the equator of its host star, as it is observed for other transiting planets. We performed radial velocity measurements of XO-3 with the SOPHIE spectrograph at the 1.93 m telescope of Haute-Provence Observatory during a planetary transit and at other orbital phases. This allowed us to observe the Rossiter-McLaughlin effect and, together with a new analysis of the transit light curve, to refine the parameters of the planet. The unusual shape of the radial velocity anomaly during the transit provides a hint of a nearly transverse Rossiter-McLaughlin effect. The sky-projected angle between the planetary orbital axis and the stellar rotation axis should be $\lambda = 70^\circ \pm 15^\circ$ to be compatible with our observations. This suggests that some close-in planets might result from gravitational interaction between planets and/or stars rather than migration due to interaction with the accretion disk. This surprising result requires confirmation by additional observations, especially at lower airmass, to fully exclude the possibility that the signal is due to systematic effects.

Based on observations collected with the SOPHIE spectrograph on the 1.93 m telescope at Observatoire de Haute-Provence (CNRS), France, by the SOPHIE Consortium (program 07A.PNP.CONNS).

The structures of embedded clusters in the Perseus, Serpens and Ophiuchus molecular clouds

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The young stellar population data of the Perseus, Ophiuchus and Serpens molecular clouds are obtained from the Spitzer Cores to Discs (c2d) legacy survey in order to investigate the spatial structure of embedded clusters using the nearest-neighbour (NN) and minimum-spanning tree method. We identify the embedded clusters in these clouds as density enhancements and analyse the clustering parameter with respect to source luminosity and evolutionary stage. This analysis shows that the older Class 2/3 objects are more centrally condensed than the younger Class 0/1 protostars, indicating that clusters evolve from an initial hierarchical configuration to a centrally condensed one. Only IC 348 and the Serpens core, the older clusters in the sample, show signs of mass segregation (indicated by the dependence of on the source magnitude), pointing to a significant effect of dynamical interactions after a few Myr. The structure of a cluster may also be linked to the turbulent energy in the natal cloud as the most centrally condensed cluster is found in the cloud with the lowest Mach number and vice versa. In general, these results agree well with theoretical scenarios of star cluster formation by gravoturbulent fragmentation.

Accepted by: Monthly Notices of the Royal Astronomical Society, Volume 389, Issue 3, pp. 1209-1217

<http://arxiv.org/abs/0805.2049>

2 NEW JOB AND SCHOLARSHIP OFFERS

Anúncios recentes de empregos e bolsas

Post-Doc position in Orsay on Darwin's instrumentation

In the frame of direct detection of telluric planets, we propose a 1 yr Post-Doc position in laboratory instrumentation at IAS (Orsay).

We are working on a laboratory qualification of a nulling interferometer, a necessary technique to allow astronomical missions as Darwin. The goal of such missions is the direct detection of telluric exoplanets and performing their spectroscopy searching, in particular, for biosignatures.

The proposed work consist in laboratory experimental work on an IR nulling interferometer with the goal of getting a rejection factor of about 10^5 and testing different Achromatic Phase Shifters.

Desired Candidate's experience: The candidate should have an experience and appeal for optical and software experimental work in laboratory.

The position will star this Fall for about 1 yr. The salary will be 1900 Euros "net" or higher according to the applicant experience.

There is no limitation on Candidate's nationality.

Applications (including letter of motivation, CV, description of previous research projects, publication list, possibly copies of papers, and 2 recommendation letters) received before the 10th of Oct will receive full consideration.

Contact:

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F-91405 Orsay, France

Job as teaching fellow - St. Andrews, Edinburgh

To Academic and Research Staff, SSO and Postgraduate Students

We are currently advertising for a second teaching fellow in the School. If you know of any good people for such a post, please would you alert them? More information is at

<http://www.st-andrews.ac.uk/employment/Code,23741,en.html>

Those candidates who are shortlisted will each be invited to give a short lecture in Theatre B on the afternoon of Tuesday 21 October, commencing at 2 pm. If you were able to come along to these presentations that would be much appreciated, please and thanks.

Best regards, Bruce

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Our School www.st-andrews.ac.uk/physics

Postdoctoral Research Position at ASTRON (Dwingeloo)

Job Advertisement: Closing Date 31st October 2008

The Netherlands Institute for Radio Astronomy (ASTRON) has several positions available for postdoctoral level research in astronomy. These offer exciting opportunities for innovative research with the LOFAR, WSRT, and e-MERLIN/e-EVN telescopes. The successful candidates will be expected to carry out innovative research in areas that include: (i) High resolution, deep field surveys, (ii) Gravitational Lensing, (iii) advanced techniques in low-frequency VLBI, (iv) e-VLBI, compact objects and transients, including SETI studies. The successful candidates are expected to work and collaborate closely with the General Director of ASTRON, Prof. Michael Garrett, as part of a special research programme funded by NWO. As well as participating in the general research carried out by the Astronomy Group, candidates also have the opportunity to collaborate with staff at JIVE (the Joint Institute for VLBI in Europe, also hosted by ASTRON). For more information see <http://www.astron.nl>.

ASTRON is building LOFAR, with first science from the array expected to flow around mid-2009. LOFAR will explore a new region of the e-m spectrum with unprecedented sensitivity and resolution - it offers an unprecedented opportunity for young researchers. ASTRON also operates the WSRT, and is a major contributor to the e-EVN.20

Appointments are initially for two years and may be renewed for a third year. Letters of application (including a CV & research plan), plus 3 letters of reference should be sent to personnel@astron.nl before the deadline: 31 October 2008. For further information contact: Prof. Michael A. Garrett (garrett@astron.nl).

PhD Positions in Astronomy available at International Max Planck Research School (IMPRS) For Astronomy and Astrophysics

PhD POSITIONS IN ASTRONOMY

Call for Applications

Deadline: November 15th, 2008

PLEASE DOWNLOAD AND POST IN YOUR INSTITUTION THE POSTER FOR THIS CALL FOR APPLICATIONS, FROM http://www.mpifr.de/pdf/imprs_2009.pdf

The International Max Planck Research School (IMPRS) for Astronomy and Astrophysics (earlier for Radio and Infrared Astronomy)), funded by the German Max Planck Society, invites applications for its doctoral program. Located in Bonn and Cologne, Germany, the school offers a unique environment for graduate students in astronomy due to the proximity of the Max-Planck Institut fuer Radioastronomie (MPIfR), the Argelander-Institut fuer Astronomie (AIfA) of the University of Bonn, and the I. Physikalisches Institut at the University of Cologne.

IMPRS offers a competitive PhD program, including lectures, seminars, and research projects supervised by scientists of the participating institutions. Individual thesis committees monitor the progress of the students. Successful completion of the IMPRS program will be honored with an IMPRS certificate which supplements the doctoral degree (PhD). The working language of the school is English.

PhD projects can be in both observational and theoretical astrophysics, covering a wide range of topics from observational radio interferometry to theoretical cosmology.

Students have access to a wide range of ground- and space-based observatories, including the unique 100-m radio telescope in Bad Muenstereifel-Effelsberg and world class instruments in sub-millimetre astronomy. The MPIfR is one of the world centres for Very-Long-Baseline Interferometry, which uses a global network of radio telescopes. This call for applications is open, with closing date on November 15, 2008, for the program starting in mid 2009. An earlier start is possible in exceptional cases. Applications for the program are open to students from all countries. The applicants should have a master's degree or diploma (preferably including a thesis) in physics or closely related subjects. Candidates with a solid foundation in astrophysics will be favoured in the selection process.

More details on the IMPRS program and the admission requirements can be found at the IMPRS website:

<http://www.mpifr.de/IMPRS/>

IMPRS

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IMPRS Speaker: Prof. Dr. J. Anton Zensus

IMPRS Coordinator: Dr. Eduardo Ros

IMPRS Secretariat: Ms Gabriele Breuer

3 MEETINGS AND CONFERENCES

Reuniões e encontros

VO Workshop in Lisbon

The webpage for the Virtual Observatory Workshop, which will take place in FCUL, from 23 to 24 October, is already online:

<http://www.sim.ul.pt/WorkshopVO-pt2008>

2nd PASC Winter School

17-19 December 2008, Sesimbra-Portugal

1st Announcement

The 2nd PASC Winter School is organized by PASC (<http://pasc.ist.utl.pt>) and is intended to provide an introduction to Particle Physics, Astrophysics and Cosmology. Therefore, the main courses of the School are at the basic level, aimed at students of the 3rd Bologna cycle and Post-docs. We also encourage students of the 2nd Bologna cycle, who have already attended introductory courses in these fields, to come to the school. Detailed information about the program and registration is available at <http://pasc.ist.utl.pt/winterschool2008>.

PASC- Particles Astrophysics and Cosmology itself, is an initiative of the three well known Portuguese research centres in these areas: Centro de Física Teórica de Partículas (CFTP), Laboratório de Instrumentação e Física de Partículas (LIP) and Centro Multidisciplinar de Astrofísica (CENTRA) .

With the PASC initiative, LIP, CFTP and CENTRA have joined efforts in order to increase the offer of courses and post-graduate studies of Physics Engineering in Particle, Astrophysics and Cosmology, at the level of Master of Science (2nd Bologna cycle) and PhD (3rd Bologna cycle). CENTRA, LIP and CFTP, have intense theoretical and experimental research activity in Astrophysics, Cosmology and Particle Physics, including instrumentation. There is a strict relationship between these areas of research. Indeed, some of the most important questions in Cosmology (for example, the question of dark matter and dark energy, as well as inflation) find their answers in Particle Physics, in addition, data coming from Astrophysics impose important restrictions on models in Particle Physics. PASC has about one hundred researchers with PhD. The three Centers maintain also intense international collaboration with the world's leading scientific institutions in these areas, such as CERN (European Laboratory in Particle Physics), ESA (European Space Agency) and ESO (European Southern Observatory), as well as with a great number of European, American and Japanese universities, participating also in important Networks financed by the European Union.

PASC (<http://pasc.ist.utl.pt>)

CENTRA (<http://centra.ist.utl.pt>) , CFTP (<http://cftp.ist.utl.pt>) and LIP (<http://www.lip.pt>)

4 CALLS FOR PROPOSALS

Chamadas para propostas

European VLBI Network

Call for Proposals Deadline 1 October 2008

This text is also available on the web at http://www.ira.inaf.it/evn_doc/call.txt

ALL EVN, GLOBAL and e-VLBI PROPOSALS must now be submitted with the ONLINE PROPOSAL SUBMISSION tool Northstar

<http://proposal.jive.nl>

Email submission is no longer accepted

Observing proposals are invited for the EVN, a VLBI network of radio telescopes spread throughout Europe and beyond, operated by an international Consortium of institutes (<http://www.evlbi.org/>).

The observations may be conducted with disk recording (standard EVN) or in real-time (e-VLBI).

The EVN facility is open to all astronomers. Use of the Network by astronomers not specialised in the VLBI technique is encouraged.

The Joint Institute for VLBI in Europe (JIVE) can provide support and advice on project preparation, scheduling, correlation and analysis. See EVN User Support at <http://www.jive.nl>.

Announcement of Opportunity - Suzaku

Suzaku (previously called Astro-E2) was successfully launched on 2005 July 10 by the Japan Aerospace Exploration Agency (JAXA) in collaboration with U.S. (NASA/GSFC and MIT) and Japanese institutes. Suzaku covers the energy range 0.3-600 keV and is currently performing astronomical observations using imaging CCD cameras (XIS) and a hard X-ray detector (HXD).

Suzaku brings new capabilities to observe all classes of astronomical objects including active galactic nuclei, clusters of galaxies, stars, supernova remnants, X-ray binaries and solar system objects. After a nine month performance verification phase, Suzaku began operating as an observatory, open to the world-wide astronomical community.

Scientists from institutes located in ESA Member States have participated in all of the AOs. The current announcement, AO-4 is for observations to be performed between April 2009 and March 2010. The deadline for submission of proposals to ESA is 5 December 2008 at 16:30 CET.

For more informations see:

http://www.rssd.esa.int/SYS/include/pubs_display.php?id=2852431

XMM-Newton Eighth Announcement of Opportunity (AO-8)

Announcement of Opportunity

Effective 26 August, 2008, XMM-Newton observing proposals are solicited in response to the Eighth Announcement of Opportunity, AO-8.

A letter from ESA's Director of Science and Robotic Exploration, inviting you to participate in the Eighth Call for Proposals, is available in electronic form (pdf): ftp://xmm2.esac.esa.int/pub/A08/A08_Invitation.pdf

The Deadline for XMM-Newton AO-8 submission is 10 October, 2008, 12:00 UT.

For more informations see also:

http://xmm.esac.esa.int/external/xmm_science/A08/

The European Extremely Large Telescope (E-ELT) - needs your input

Dear Colleague,

We would like to kindly solicit your help on the E-ELT project.

The European Extremely Large Telescope (<http://www.eso.org/sci/facilities/eelt/>) is in its detailed design phase. As part of this phase, we are preparing a Design Reference Science Plan (DRSP).

The DRSP is a collection of science cases provided directly by the future users of the E-ELT. The DRSP aims at exploring the full range of science cases for which the E-ELT will be used. Ultimately, it will help to define the

boundaries of the parameter space over which the E-ELT will operate. It will be used to guide the performance optimisation of the telescope, the prioritisation of the instruments, as well as to plan the science operations modes.

In order for the E-ELT to be a success and to optimally serve its community, we need your feedback. Please visit <http://www.eso.org/sci/facilities/eelt/science/drsp/> and submit a science case.

To help you assessing the expected performance on the E-ELT, we provided two exposure time calculators, as well as a collection of technical data, at the above URL (under 'Design Reference Mission' in the menu on the right hand side). If you require further help, please feel free to contact us.

We are looking forward to your input, and thank you already for helping us making the E-ELT a success.

Markus Kissler-Patig (E-ELT Project Scientist) on behalf of the project