## Contents

1 Editorial

2 Abstracts of refereed papers

- Searching for Star-Planet interactions within the magnetosphere of HD 189733  *R. Fares et al.* .... 3
- Transiting exoplanets from the CoRoT space mission IX. CoRoT-6b: a transiting ‘hot Jupiter’ planet in an 8.9d orbit around a low-metallicity star  *Fridlund et al.* ................. 4
- Enstatite-rich Warm Debris Dust around HD165014  *Fujiiwa et al.* .......................... 5
- Dynamics of two planets in co-orbital motion  *Giuppone, et al.* ............................... 5
- Formation of Terrestrial Planets from Protoplanets under a Realistic Accretion Condition  *Kokubo & Genda* .......................................................... 6
- Debris Disks: Seeing Dust, Thinking of Planetesimals and Planets (review paper)  *Krivov* ............................. 6
- Evaporation of the planet HD 189733b observed in H I Lyman-α  *Lecavelier des Etangs et al.* .... 7
- Warm dusty discs: Exploring the A star 24 μm debris population  *Smith & Wyatt* .............. 7

3 Conference announcements

- In the spirit of Bernard Lyot 2010 – Direct Detection of Exoplanets and Circumstellar Disks  *Paris* – France ................................................................. 8

4 Jobs and positions

- PhD positions in the field of extra-solar planets  *Centro de Astrofísica da Universidade do Porto* .... 9

5 As seen on astro-ph


1 Editorial

Welcome to the twenty-eighth edition of ExoPlanet News, an electronic newsletter reporting the latest developments and research outputs in the field of exoplanets.

Even though we have a rather slimmer edition this month, we hope you enjoy catching up with recent developments in the field. Remember that past editions of this newsletter, submission templates and other information can be found at the ExoPlanet News website: http://exoplanet.open.ac.uk.

Please send anything relevant to exoplanet@open.ac.uk, and it will appear in the next edition which we plan to send out at the beginning of May 2010. As for this issue, if you wish to include ONE .eps figure per abstract, please do so.

Best wishes
Andrew Norton & Glenn White
The Open University

2 Abstracts of refereed papers

Searching for Star-Planet interactions within the magnetosphere of HD 189733

R. Fares1,2, J.-F. Donati1, C. Moutou2, M.M. Jardine3, J.-M. Grießmeier4, P. Zarka5, E. L. Shkolnik6, D. Bohlender7, C. Catala5, A.C. Cameron3

1 LATT–UMR 5572, CNRS & Univ. P. Sabatier, 14 Av. E. Belin, F–31400 Toulouse, France
2 LAM–UMR 6110, CNRS & Univ. de Provence, 38 rue Frédéric Juliet-Curie, F–13013 Marseille, France
3 School of Physics and Astronomy, Univ. of St Andrews, St Andrews, Scotland KY16 9SS, UK
4 Netherlands Institute for Radio Astronomy, Postbus 2, 7990 AA, Dwingeloo, The Netherlands
5 LESIA–UMR 8109, CNRS & Univ. Paris VII, 5 Place Janssen, F–92195 Meudon Cedex, France
6 DTM, Carnegie Institution of Washington, 5241 Broad Branch Road, NW, Washington, DC 20015-130, USA
7 HIA/NRC, 5071 West Saanich Road, Victoria, BC V9E 2E7, Canada

Monthly Notices of the Royal Astronomical Society, in press (arXive-1003.6027)

HD 189733 is a K2 dwarf, orbited by a giant planet at 8.8 stellar radii. In order to study magnetospheric interactions between the star and the planet, we explore the large-scale magnetic field and activity of the host star.

We collected spectra using the ESPaDOnS and the NARVAL spectropolarimeters, installed at the 3.6-m Canada-France-Hawaii telescope and the 2-m Telescope Bernard Lyot at Pic du Midi, during two monitoring campaigns (June 2007 and July 2008).

HD 189733 has a mainly toroidal surface magnetic field, having a strength that reaches up to 40 G. The star is differentially rotating, with latitudinal angular velocity shear of \( \frac{d\Omega}{d\phi} = 0.146 \pm 0.049 \ \text{rad d}^{-1} \), corresponding to equatorial and polar periods of 11.94 ± 0.16 d and 16.53 ± 2.43 d respectively. The study of the stellar activity shows that it is modulated mainly by the stellar rotation (rather than by the orbital period or the beat period between the stellar rotation and the orbital periods). We report no clear evidence of magnetospheric interactions between the star and the planet.

We also extrapolated the field in the stellar corona and calculated the planetary radio emission expected for HD 189733b given the reconstructed field topology. The radio flux we predict in the framework of this model is time variable and potentially detectable with LOFAR.

Download/Website: http://arxiv.org/abs/1003.6027
Contact: rim.fares@ast.obs-mip.fr
Transiting exoplanets from the CoRoT space mission IX. CoRoT-6b: a transiting 'hot Jupiter' planet in an 8.9d orbit around a low-metallicity star

M. Fridlund\textsuperscript{1}, G. Hébrard\textsuperscript{2}, R. Alonso\textsuperscript{3,15}, M. Deleuil\textsuperscript{3}, D. Gandolfi\textsuperscript{10}, M. Gillon\textsuperscript{15,19}, H. Bruntr\textsuperscript{5}, A. Alapini\textsuperscript{6}, Sz. Csizmadia\textsuperscript{11}, T. Guillot\textsuperscript{10}, H. Lammer\textsuperscript{13}, S. Aigrain\textsuperscript{6,24}, J.M. Almenara\textsuperscript{9,23}, M. Auvergne\textsuperscript{5}, A. Baglin\textsuperscript{5}, P. Barge\textsuperscript{3}, P. Bordé\textsuperscript{6}, F. Bouchy\textsuperscript{2,22}, J. Cabrera\textsuperscript{11}, L. Carone\textsuperscript{12}, S. Carpano\textsuperscript{1}, H. J. Deeg\textsuperscript{9,23}, R. De la Reza\textsuperscript{17}, R. Dvorak\textsuperscript{18}, A. Erikson\textsuperscript{11}, S. Ferraz-Mello\textsuperscript{20}, E. Guenther\textsuperscript{10,9}, P. Gondoin\textsuperscript{1}, R. den Hartog\textsuperscript{1}, A. Hatzes\textsuperscript{10}, L. Jorda\textsuperscript{3}, A. Léger\textsuperscript{4}, A. Llebaria\textsuperscript{3}, P. Magain\textsuperscript{19}, T. Mazeh\textsuperscript{8}, C. Moutou\textsuperscript{6}, M. Ollivier\textsuperscript{4}, M. Pätzold\textsuperscript{12}, D. Queloz\textsuperscript{15}, H. Rauer\textsuperscript{11,21}, D. Rouan\textsuperscript{3}, B. Samuel\textsuperscript{6}, J. Schneider\textsuperscript{14}, A. Shporer\textsuperscript{6}, B. Stecklum\textsuperscript{10}, B. Tingley\textsuperscript{9,23}, J. Weingrill\textsuperscript{13}, G. Wuchterl\textsuperscript{10}

1 RSSD, European Space Agency, Keplerlaan1, NL-2200AG, Noordwijk, The Netherlands
2 IAP, UMR7095 CNRS, Université Pierre & Marie Curie, 98bis boulevard Arago, 75014 Paris, France
3 LAM, UMR 6110, CNRS/Univ. de Provence, 38 rue F. Joliot-Curie, 13388 Marseille, France
4 Institut d’Astrophysique Spatiale, Université Paris XI, F-91405 Orsay, France
5 School of Physics, University of Exeter, Exeter, EX4 4QL
6 Netherlands Institute for Space Research, SRON, Sorbonnelaan 2, 3584 CA, Utrecht, The Netherlands
7 Wise Observatory, Tel Aviv University, Tel Aviv 69978, Israel
8 Instituto de Astrofísica de Canarias , E-38205 La Laguna, Tenerife, Spain
9 Thüringer Landessternwarte, 07778 Tautenburg, Germany
10 Institute of Planetary Research, DLR, 12489 Berlin, Germany
11 Rheinischs Institut für Umweltforschung an der Universität zu Köln, Aachener Strasse 209, 50931, Köln, Germany
12 Space Research Institute, Austrian Academy of Science, Schmiedlstr. 6, A-8042 Graz, Austria
13 LUTH, Observatoire de Paris-Meudon, 5 place Jules Janssen, 92195 Meudon, France
14 Observatoire de Genève, Université de Genève, 51 chemin des Maillettes, 1290 Sauverny, Switzerland
15 Université de Nice Sophia Antipolis, CNRS, Observatoire de la Côte d’Azur, BP 4229, 06304 Nice, France
16 Observatório Nacional, Rio de Janeiro, RJ, Brazil
17 Institute for Astronomy, University of Vienna, Vienna, Austria
18 IAG Universidade de Sao Paulo, Sao Paulo, Brasil
19 TU Berlin, Zentrum für Astronomie und Astrophysik, Hardenbergstr. 17, 1180, Vienna, Austria
20 IAG Université de la Laguna, Tenerife, Spain
21 Oxford Astrophysics, University of Oxford, Keble Road, Oxford OX1 3RH, UK

Astronomy & Astrophysics, in press (2010arXiv1001.1426F)

The CoRoT satellite exoplanetary team announces its sixth transiting planet in this paper. We describe and discuss the satellite observations as well as the complementary ground-based observations – photometric and spectroscopic – carried out to assess the planetary nature of the object and determine its specific physical parameters. The discovery reported here is a 'hot Jupiter' planet in an 8.9d orbit, 18 stellar radii, or 0.08 AU, away from its primary star, which is a solar-type star (F9V) with an estimated age of 3.0 Gyr. The planet mass is close to 3 times that of Jupiter. The star has a metallicity of 0.2 dex lower than the Sun, and a relatively high \(\text{[Li]}\) abundance. While the light curve indicates a much higher level of activity than, e.g., the Sun, there is no sign of activity spectroscopically in e.g., the \(\text{[Ca II]}\) H&K lines.

Download/Website: http://arxiv.org/abs/1001.1426

Contact: malcolm.fridlund@esa.int
Enstatite-rich Warm Debris Dust around HD165014

H. Fujiwara¹, T. Onaka¹, D. Ishihara², T. Yamashita³, M. Fukagawa⁴, T. Nakagawa⁵, H. Kataza⁶, T. Ootsubo⁶, H. Murakami⁷

¹ Department of Astronomy, School of Science, University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan
² Graduate School of Science, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8602, Japan
³ National Astronomical Observatory of Japan, 2-21-1 Osawa, Mitaka, Tokyo 181-0015, Japan
⁴ Graduate School of Science, Osaka University, 1-1 Machikaneyama, Toyonaka 560-0043, Osaka, Japan
⁵ Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, 3-1-1 Yoshinodai, Chuo-ku, Sagamihara, Kanagawa 252-5210, Japan
⁶ Astronomical Institute, Graduate School of Science, Tohoku University, Aramaki, Aoba-ku, Sendai, 980-8578, Japan

Astrophysical Journal Letters, in press (arXiv:1004.0560)

We present the Spitzer/Infrared Spectrograph spectrum of the main-sequence star HD165014, which is a warm (> 200 K) debris disk candidate discovered by the AKARI All-Sky Survey. The star possesses extremely large excess emission at wavelengths longer than 5 µm. The detected flux densities at 10 and 20 µm are ~ 10 and ~ 30 times larger than the predicted photospheric emission, respectively. The excess emission is attributable to the presence of circumstellar warm dust. The dust temperature is estimated as 300–750 K, corresponding to the distance of 0.7–4.4 AU from the central star. Significant fine-structured features are seen in the spectrum and the peak positions are in good agreement with those of crystalline enstatite. Features of crystalline forsterite are not significantly seen. HD165014 is the first debris disk sample that has enstatite as a dominant form of crystalline silicate rather than forsterite. Possible formation of enstatite dust from differentiated parent bodies is suggested according to the solar system analog. The detection of an enstatite-rich debris disk in the current study suggests the presence of large bodies and a variety of silicate dust processing in warm debris disks.

Download/Website: http://arxiv.org/abs/1004.0560
Contact: hideaki@ir.isas.jaxa.jp

Dynamics of two planets in co-orbital motion

C.A. Giuppone¹, C. Beaugé¹, T.A. Michtchenko² and S. Ferraz-Mello²
¹ Observatorio Astronómico, Universidad Nacional de Córdoba, Laprida 854, (X5000BGR) Córdoba, Argentina
² Instituto de Astronomía, Geofísica e Ciências Atmósfericas, USP, Rua do Matão 1226, 05508-900 São Paulo, Brazil

Monthly Notices of the Royal Astronomical Society, in press (arXiv-Code)

We study the stability regions and families of periodic orbits of two planets locked in a co-orbital configuration. We consider different ratios of planetary masses and orbital eccentricities, also we assume that both planets share the same orbital plane. Initially we perform numerical simulations over a grid of osculating initial conditions to map the regions of stable/chaotic motion and identify equilibrium solutions. These results are later analyzed in more detail using a semi-analytical model.

Apart from the well known quasi-satellite (QS) orbits and the classical equilibrium Lagrangian points $L_4$ and $L_5$, we also find a new regime of asymmetric periodic solutions. For low eccentricities these are located at $(\sigma, \Delta \varpi) = (\pm 60^\circ, \mp 120^\circ)$, where $\sigma$ is the difference in mean longitudes and $\Delta \varpi$ is the difference in longitudes of pericenter. The position of these Anti-Lagrangian solutions changes with the mass ratio and the orbital eccentricities, and are found for eccentricities as high as ~ 0.7.

Finally, we also applied a slow mass variation to one of the planets, and analyzed its effect on an initially asymmetric periodic orbit. We found that the resonant solution is preserved as long as the mass variation is adiabatic, with practically no change in the equilibrium values of the angles.

Contact: cristian@oac.uncor.edu
Formation of Terrestrial Planets from Protoplanets under a Realistic Accretion Condition

E. Kokubo\textsuperscript{1}, H. Genda\textsuperscript{2}

\textsuperscript{1} National Astronomical Observatory of Japan
\textsuperscript{2} Tokyo Institute of Technology

Astrophysical Journal Letters, in press

The final stage of terrestrial planet formation is known as the giant impact stage where protoplanets collide with one another to form planets. So far this stage has been mainly investigated by $N$-body simulations with an assumption of perfect accretion in which all collisions lead to accretion. However, this assumption breaks for collisions with high velocity and/or a large impact parameter. We derive an accretion condition for protoplanet collisions in terms of impact velocity and angle and masses of colliding bodies, from the results of numerical collision experiments. For the first time, we adopt this realistic accretion condition in $N$-body simulations of terrestrial planet formation from protoplanets. We compare the results with those with perfect accretion and show how the accretion condition affects terrestrial planet formation. We find that in the realistic accretion model, about half of collisions do not lead to accretion. However, the final number, mass, orbital elements, and even growth timescale of planets are barely affected by the accretion condition. For the standard protoplanetary disk model, typically two Earth-sized planets form in the terrestrial planet region over about $10^8$ years in both realistic and perfect accretion models. We also find that for the realistic accretion model, the spin angular velocity is about 30$\%$ smaller than that for the perfect accretion model that is as large as the critical spin angular velocity for rotational instability. The spin angular velocity and obliquity obey Gaussian and isotropic distributions, respectively, independently of the accretion condition.

Contact: kokubo@th.nao.ac.jp

Debris Disks: Seeing Dust, Thinking of Planetesimals and Planets (review paper)

Alexander V. Krivov
Astrophysikalisches Institut und Universitätssternwarte, Friedrich-Schiller-Universität Jena, 07745 Jena, Germany

Research in Astronomy and Astrophysics, in press (arXiv:1003.5229)

Debris disks are optically thin, almost gas-free dusty disks observed around a significant fraction of main-sequence stars older than about 10 Myr. Since the circumstellar dust is short-lived, the very existence of these disks is considered as evidence that dust-producing planetesimals are still present in mature systems, in which planets have formed — or failed to form — a long time ago. It is inferred that these planetesimals orbit their host stars at asteroid to Kuiper-belt distances and continually supply fresh dust through mutual collisions. This review outlines observational techniques and results on debris disks, summarizes their essential physics and theoretical models, and then places them into the general context of planetary systems, uncovering interrelations between the disks, dust parent bodies, and planets. It is shown that debris disks can serve as tracers of planetesimals and planets and shed light on the planetesimal and planet formation processes that operated in these systems in the past.

Download/Website: http://arxiv.org/abs/1003.5229

Contact: krivov@astro.uni-jena.de
Evaporation of the planet HD 189733b observed in H I Lyman-α

A. Lecavelier des Etangs1, D. Ehrenreich2, A. Vidal-Madjar1, G. E. Ballester3, J.-M. Désert4, R. Ferlet1, G. Hébrard1, D. K. Sing1,5, K.-O. Tchakoumegni1, S. Udry6

1 Institut d’astrophysique de Paris, 98 bis boulevard Arago, F-75014 Paris, France
2 Laboratoire d’astrophysique de Grenoble (LAOG), BP 53, 38041 Grenoble cedex 09, France
3 Lunar and Planetary Laboratory, University of Arizona, 1541 E. University Blvd., Tucson, AZ 85721-0063, USA
4 Astrophysics Group, School of Physics, University of Exeter, Stocker Road, Exeter EX4 4QL, UK
5 Lycée Passy Buzenval, 50 avenue Otis Mygatt, 92508 Rueil-Malmaison Cedex, France
6 Observatoire de Genève, Université de Genève, 51 chemin des Maillettes, 1290 Sauverny, Switzerland

Astronomy & Astrophysics, in press (arXiv:1003.2206)

We observed three transits of the extrasolar planet HD 189733b in H I Lyman-α and in a few other lines in the ultraviolet with HST/ACS, in the search for atmospheric signatures. We detect a transit signature in the Lyman-α light curve with a transit depth of 5.05 ± 0.75%. This depth exceeds the occultation depth produced by the planetary disk alone at the 3.5σ level (statistical). Other stellar emission lines are less bright, and, taken individually, they do not show the transit signature, while the whole spectra redward of the Lyman-α line has enough photons to show a transit signature consistent with the absorption by the planetary disk alone. The transit depth’s upper limits in the emission lines are 11.1% for O I λ1305 Å and 5.5% for C II λ1335 Å lines.

The presence of an extended exosphere of atomic hydrogen around HD 189733b producing 5% absorption of the full unresolved Lyman-α line flux shows that the planet is losing gas. The Lyman-α light curve is well-fitted by a numerical simulation of escaping hydrogen in which the planetary atoms are pushed by the stellar radiation pressure. We constrain the escape rate of atomic hydrogen to be between $10^{9}$ and $10^{11}$ g s$^{-1}$ and the ionizing extreme UV flux between 2 and 40 times the solar value (1-σ), with larger escape rates corresponding to larger EUV flux. The best fit is obtained for $dM/dt=10^{10}$ g s$^{-1}$ and an EUV flux $F_{EUV}=20$ times the solar value. HD 189733b is the second extrasolar planet for which atmospheric evaporation has been detected.

Download/Website: http://arxiv.org/abs/1003.2206
Contact: lecaveli@iap.fr

Warm dusty discs: Exploring the A star 24μm debris population

R. Smith1,2, M. C. Wyatt2

1 Astrophysics Group, Keele University, Keele, Staffordshire, ST5 5BG
2 Institute of Astronomy, University of Cambridge, Madingley Road, Cambridge, CB3 0AH

Astronomy & Astrophysics, in press

Studies of the debris disc phenomenon have shown that most systems are analogous to the Edgeworth-Kuiper Belt (EKB). In this study we aim to determine how many of the IRAS 25 μm excesses towards A stars, which may be indicative of asteroid belt analogues, are real, and investigate where the dust must lie and so build up a picture of what these systems are like. We observe using ground-based mid-infrared imaging with TIMMI2, VISIR, Michelle and TReCS a sample of A and B-type main sequence stars previously reported as having mid-infrared excess. We combine modelling of the emission spectrum from multi-wavelength photometry with a modelling technique designed to constrain the radial extent of emission in mid-infrared imaging to constrain the possible location of the debris. We independently confirm the presence of warm dust around three of the candidates: HD 3003, HD 80950 and η Tel. For the binary HD3003 a stability analysis indicates the dust is either circumstellar and lying at >14AU with the binary orbiting at >14AU, or the dust lies in an unstable location; there is tentative evidence for temporal evolution of its excess emission on a ~20 year timescale. For 7 of the targets we present quantitative limits on the location of dust around the star based on the unresolved imaging. We demonstrate that the disc around HD71155 must have multiple spatially distinct components at 2 and 60AU. We model the limits of current instrumentation to
resolve debris disc emission and show that most of the known A star debris discs which could be readily resolved at 18\(\mu\)m on 8m instruments have been resolved, but identify several that could be resolved with deep (>8 hours total) integrations (such as HD19356, HD139006 and HD102647). Limits from unresolved imaging can help distinguish between competing models of the disc emission, but resolved imaging is key to an unambiguous determination of the disc location. Modelling of the detection limits for extended emission can be useful for targeting future observational campaigns towards sources most likely to be resolved. MIRI on the JWST will be able to resolve the majority of the known A star debris disc population. METIS on the E-ELT will provide the opportunity to explore the hot disc population more thoroughly by detecting extended emission down to where calibration accuracy limits disc detection through photometry alone, reaching levels below 1 zodi for stars within 10pc.

Contact: rs@astro.keele.ac.uk

3 Conference announcements

In the spirit of Bernard Lyot 2010 – Direct Detection of Exoplanets and Circumstellar Disks

A. Boccaletti et al.

LESIA / CNRS - Paris Observatory

Paris, October 25th to 29th, 2010

The last 15 years have witnessed a rapid development of techniques for the detection and characterization of extrasolar planets. Radial velocity surveys have detected the first bona fide giant planets and are now pushing the limits towards lower masses and longer periods. As of today, the more than 400 known exoplanetary systems and our own Solar System demonstrate a large diversity of physical and chemical properties as various formation mechanisms (core accretion, stellar mechanisms). However, a small fraction of the mass-period diagram has been explored so far.

Recently, two major steps were accomplished with the first direct images of massive giant planets around young stars and the first low resolution spectra of transiting hot-Jupiters, preluding the era of “spectral characterization”. This field will undergo significant breakthroughs in the next couple of years with the installation of the first ground-based “planet finders” (SPHERE/VLT, GPI/Gemini, HiCIAO/Subaru) and with the launch of JWST in 2014. In addition to spectral analysis, direct imaging will participate to a more general picture of the planetary systems while exploring longer periods. Observations of giant planets close or beyond the snow line will allow to investigate how they form and evolve.

For the longer term, many ambitious ground-based and space-based projects using smart concepts compete for a major goal, the search and characterization of telluric planets and ultimately the quest for Earth analogs. Improving the understanding of planet formation and evolution in the telluric regime will require new technologies. In that context, many progress have been accomplished in the last years.

In the 1930’s, Bernard Lyot was a pioneer in this field and many of the techniques used today for high contrast imaging derive from his coronagraph concept. In 2007, the ”Lyot Conference” held in Berkeley confronted technological developments with astrophysical requirements. Since then, this field has experienced enough astrophysical and instrumental advances to motivate a second conference. ”In the Spirit of Bernard Lyot 2010” will be held in Paris, in the city where Lyot led his career.

The conference will be focused on direct detection and characterization of exoplanets and circumstellar disks with the following main goals : to cover the astrophysical interests of direct imaging; to provide the status of the current and the next generation of direct imaging instruments (Planet finders, JWST,...); to build up on this experience for
the planning of new instruments for the next decade (ELTs, space based telescopes, interferometers ...); to explore the synergies with other direct detection techniques, in particular transit spectroscopy. We encourage students and postdoc to participate and some limited grants will be made available.

Important deadlines:
- 1st announcement: March 9th, 2010
- 2nd announcement: late April, 2010
- abstract submission: June 4th, 2010
- early registration: September 6th, 2010
- late registration: anytime before the conference

SOC:
Anthony Boccaletti (chair): LESIA / CNRS - Paris Observatory; Paul Kalas: University of California, Berkeley; Motohide Tamura: National Astronomical Observatory of Japan; Claude Aime: FIZEAU / CNRS - University of Nice; Anne-Marie Lagrange: LAOG / CNRS - University Joseph Fourier; Laurent Mugnier: DOTA / ONERA; Markus Kasper: ESO; Ren Doyon: University of Montral; Hans Martin Schmid: ETH Zurich; Giovanna Tinetti: University College of London.

LOC:
Pierre Baudoz: LESIA / CNRS - Paris Observatory; Daniel Rouan: LESIA / CNRS - Paris Observatory; Jean-Luc Beuzit: LAOG / CNRS - University Joseph Fourier; Gal Chauvin: LAOG / CNRS - University Joseph Fourier; Anthony Boccaletti: LESIA / CNRS - Paris Observatory; Grard Rousset: LESIA / CNRS - Paris Observatory; Florence Henry: LESIA / CNRS - Paris Observatory; Sylvain Cnudde: LESIA / CNRS - Paris Observatory; Christle Carette: ONERA.

Download/Website: http://lyot2010.lesia.obspm.fr

4 Jobs and positions

PhD positions in the field of extra-solar planets

Nuno Santos
Centro de Astrofisica da Universidade do Porto (CAUP), Portugal

Porto, Deadline for application 31th May 2010

The Centro de Astrofisica da Universidade do Porto (CAUP) opens a call for 3 PhD student positions. The positions are offered in the context of the Starting Grant "Extra-solar planets and stellar astrophysics: towards the detection of Other Earths" funded by the European Community/European Research Council under the FP7 Ideas programme. The positions, with a maximum duration of 4 years, are open in the field of extra-solar planets, and are to be started from the 1st of October 2010. The PhD fellowship (according to the rules of the National Science Foundation FCT) have an yearly income of nearly 12000 euros, tax free. Funds for travelling (conferences, collaborations, observing missions) are also available. The above mentioned research is to be seen in the context of the participation in the project of the ESPRESSO@VLT instrument (http://espresso.astro.up.pt), a new high resolution ultra stable spectrograph for the VLT/ESO.

Download/Website: http://www.astro.up.pt/caup/index.php?WID=141&Lang=uk&CID=1&ID=56

Contact: olofsson@astro.su.se, garrelt@astro.su.se
5 As seen on astro-ph

The following list contains all the entries relating to exoplanets that we spotted on astro-ph during March 2010. If you spot any that we missed, please let us know and we’ll include them in the next issue. And of course, the best way to ensure we include your paper is to send us the abstract.

Exoplanets

astro-ph/1003.0277: The Extraterrestrial Life debate in different cultures by Jean Schneider
astro-ph/1003.0340: Orbital period variations of hot-Jupiters caused by the Applegate effect by C. A. Watson, T. R. Marsh
astro-ph/1003.0405: Higher depletion of lithium in planet host stars: no age and mass effect by S. G. Sousa, J. Fernandes, G. Israeli et al
astro-ph/1003.0421: The Mass of HD 38529 c from Hubble Space Telescope Astrometry and High-Precision Radial Velocities by G. Fritz Benedict, Barbara E. McArthur, Jacob L. Bean et al
astro-ph/1003.0457: Lack of Transit Timing Variations of OGLE-TR-111b: A re-analysis with six new epochs by E. R. Adams, M. Lopez-Morales, J. L. Elliot et al
astro-ph/1003.0541: Evaluating the stability of atmospheric lines with HARPS by P. Figueira, F. Pepe, C. Lovis et al
astro-ph/1003.0570: Stable and habitable systems with two giant planets by Vera Dobos, Imre Nagy, Judit Orgovnyi
astro-ph/1003.0633: Pervasive Orbital Eccentricities Dictate the Habitability of Extrasolar Earths by Ryosuke Kita, Frederic A. Rasio, Genya Takeda
astro-ph/1003.1169: Properties of Microlensing Central Perturbations by Planets in BINARY Stellar Systems under the Strong Finite-Source Effect by Sun-Ju Chung, Byeong-Gon Park
astro-ph/1003.1207: Habitable Zones of Host Stars During the POST-MS Phase by Jianpo Guo, Fenghui Zhang, Xianfei Zhao
astro-ph/1003.1222: Habitable Zones and UV Habitable Zones around Host Stars by Jianpo Guo, Fenghui Zhang, Xianfei Zhang et al
astro-ph/1003.1279: Two new variable stars observed in the field of the extrasolar planet host star WASP-3 by M. Damasso, A. Carbognani, P. Calciades et al
astro-ph/1003.1301: Photometric observation of transiting extrasolar planet WASP - 10b by Tereza Krejcova, Jan Budaj, Viktoria Kras
astro-ph/1003.1368: Probability Distribution of Terrestrial Planets in Habitable Zones around Host Stars by Jianpo Guo, Fenghui Zhang, Xuefei Chi
astro-ph/1003.1662: A simple model of the reflection effect for the interacting binaries and extrasolar planets by Jan Budaj
astro-ph/1003.1762: Transit Observations of the WASP-10 System by Jason A Dittmann, Laird M Close, Louis J Scuderi
astro-ph/1003.2137: The Capture of Trojan Asteroids by the Giant Planets During Planetary Migration by P. S. Lykawka, J. Horner
astro-ph/1003.2206: Evaporation of the planet HD189733b observed in HI Lyman-alpha by G. Torres, G. A. Bakos, J. Hartman et al
astro-ph/1003.2211: HAT-P-14b: A 2 Jupiter-mass exoplanet transiting a bright F star by G. Torres, G. A. Bakos, J. Hartman et al
astro-ph/1003.2268: Spin-Orbit Alignment of the TrES-4 Transiting Planetary System and Possible Additional Radial Velocity Variation by Norio Narita, Bun’ei Sato, Teruyuki Hirano et al
astro-ph/1003.2763: On the Orbit of Exoplanet WASP-12b by Christopher J. Campo, Joseph Harrington, Ryan A. Hardy et al
astro-ph/1003.3032: A Common Proper Motion Companion to the Exoplanet Host 51 Pegasi by J. Greaves
astro-ph/1003.3308: The Dynamics of Three-Planet Systems: an Approach from Dynamical System by Bungo Shikita, Hiroko Koyama, Shoichi Yamada
astro-ph/1003.3340: The planetary system host HR 8799: On its $\lambda$ Bootis nature by A. Moya, P. J. Amado, D. Barrado et al
astro-ph/1003.3444: The NASA-UC Eta-Earth Program: II. A Planet Orbiting HD 156668 with a Minimum Mass of Four Earth Masses by Andrew W. Howard, John Asher Johnson, Geoffrey W. Marcy
astro-ph/1003.3445: Retired A Stars and Their Companions IV. Seven Jovian Exoplanets from Keck Observatory by John Asher Johnson, Andrew W. Howard, Brendan P. Bowler et al
astro-ph/1003.3488: The California Planet Survey I. Four New Giant Exoplanets by Andrew W. Howard, John Asher Johnson, Geoffrey W. Marcy et al
astro-ph/1003.3537: Continuation of periodic orbits in two-planet resonant systems by G. Voyatzis, T. Kotoulas, J. D. Hadjidemetriou
astro-ph/1003.3544: Light elements in stars with exoplanets by N.C. Santos, E. Delgado Mena, G. Israelian et al
astro-ph/1003.3561: Evolution of the solar activity over time and effects on planetary atmospheres. II. kappa $1$ Ceti, an analog of the Sun when life arose on Earth by I. Ribas, G. F. Porto de Mello, L. D. Ferreira et al
astro-ph/1003.3617: Structure in the disc of epsilon Aurigae: Spectroscopic observations of neutral Potassium during eclipse ingress by Robin Leadbeater, Robert Sten
astro-ph/1003.3678: Evidence against the young hot-Jupiter around BD +20 1790 by P. Figueira, M. Marmier, X. Bonfils et al
astro-ph/1003.3838: Magnetic Drag on Hot Jupiter Atmospheric Winds by Rosalba Perna, Kristen Menou, Emily Rauscher
astro-ph/1003.4384: Formation of Terrestrial Planets from Protoplanets under a Realistic Accretion Condition by Eichiro Kokubo, Hidenori Genda
astro-ph/1003.4507: The highest resolution near-IR spectrum of the imaged planetary mass companion 2M1207 b by Jenny Patience, Robert R. King, Robert J. De Rosa et al
astro-ph/1003.4512: The HAT-P-13 Exoplanetary System: Evidence for Spin-Orbit Alignment and a Third Companion by Joshua N. Winn, John Asher Johnson, Andrew W. Howard
astro-ph/1003.4738: The Posterior Distribution of $\sin(i)$ Values For Exoplanets With $M_T \sin(i)$ Determined From Radial Velocity Data by Shirley Ho, Edwin L. Turner
astro-ph/1003.4818: Gravity Waves on Hot Extrasolar Planets: I. Propagation and Interaction with the Background by Chris Watkins, James Y-K. Cho
astro-ph/1003.4884: Connecting planets around horizontal branch stars with known exoplanets by Ealeal Bear, Noam Soker
astro-ph/1003.4986: Thermal Infrared MMTAO Observations of the HR 8799 Planetary System by Philip M. Hinz, Timothy J. Rodigas, Matthew A. Kenworthy et al
astro-ph/1003.5121: Asteroseismic determination of the physical characteristics of the planetary system host HR 8799 ($\lambda$ Bootis nature and age) by A. Moya, P. J. Amado, D. Barrado et al
astro-ph/1003.5323: Constraints on Long-Period Planets from an L’ and M band Survey of Nearby Sun-Like Stars: Modeling Results by A. N. Heinze, Philip M. Hinz, Matthew Kenworthy et al
astro-ph/1003.5796: Age determination of the HR8799 planetary system using asteroseismology by A. Moya, P. J. Amado, D. Barrado
astro-ph/1003.5802: Coronal properties of planet-bearing stars by K. Poppenhaeger, J. Robrade, J.H.M.M. Schmitt

Disks
astro-ph/1003.1756: Long-term Evolution of Protostellar and Protoplanetary Disks. II. Layered Accretion with Infall by Zhaohuan Zhu, Lee Hartmann, Charles Gammie
astro-ph/1003.1759: Long-term Evolution of Protostellar and Protoplanetary Disks. I. Outbursts by Zhaohuan Zhu, Lee Hartmann, Charles F. Gammie et al
astro-ph/1003.2323: Continuum and line modelling of discs around young stars. I. 300000 disc models for Herschel/GASPS by Peter Woitke, Christophe Pinte, Ian Tilling
astro-ph/1003.3002: Gas Accretion onto a Protoplanet and Formation of a Gas Giant Planet by Masahiro N. Machida, Eiichiro Kokubo, Shu-ichiro Inutsuka et al
astro-ph/1003.3791: A Spitzer Survey of Protoplanetary Disk Dust in the Young Serpens Cloud: How do Dust Characteristics Evolve with Time? by Isa Oliveira, Klaus M. Pontoppidan, Bruno Merin et al
astro-ph/1003.3900: Radiative Transfer Models of a Possible Planet in the AB Aurigae Disk by Hannah Jang-Condell, Marc J. Kuchner
astro-ph/1003.4318: Investigating planet formation in circumstellar disks: CARMA observations of RY Tau and DG Tau by Andrea Isella, John M. Carpenter, Anneila I. Sargent
astro-ph/1003.4384: Formation of Terrestrial Planets from Protoplanets under a Realistic Accretion Condition by Eiichiro Kokubo, Hidenori Genda
astro-ph/1003.4749: An automatic pipeline analysing solar-like oscillating targets tested on CoRoT and simulated data by S. Mathur, R.A. Garcia, C. Regulo et al
astro-ph/1003.4791: Dust Concentration at the Boundary Between Steady Super/Sub-Keplerian Flow Created by Inhomogeneous Growth of MRI by Mariko T. Kato, Masaki Fujimoto, Shigeru Ida
astro-ph/1003.5562: X-raying the AU Microscopii debris disk by P. C. Schneider, J. H. M. M. Schmitt

Instrumentation and Techniques
astro-ph/1003.0136: A Near Infrared Laser Frequency Comb for High Precision Doppler Planet Surveys by S. Osterman, S. Diddams, F. Quinlan et al
astro-ph/1003.0427: The SARS algorithm: detrending CoRoT light curves with Sysrem using simultaneous external parameters by Matthew J. Payne, Eric B. Ford, Dimitri Veras
astro-ph/1003.2418: Transit Timing Variations for Inclined and Retrograde Exoplanetary Systems by Matthew J. Payne, Eric B. Ford, Dimitri Veras
astro-ph/1003.3921: Gaia and the Astrometry of Giant Planets by M.G. Lattanzi, A. Sozzetti
astro-ph/1003.4700: New Completeness Methods for Estimating Exoplanet Discoveries by Direct Detection by Robert A. Brown, Remi Soummer
astro-ph/1003.4702: The Synergy of Direct Imaging and Astrometry for Orbit Determination of exo-Earths by Michael Shao, Joseph Catanzarite, Xiaopei Pan