ExoPlanet News
An Electronic Newsletter

No. 13, November 3rd, 2008

Editors: Andrew J. Norton
Glenn J. White
Dept. of Physics & Astronomy, The Open University, Milton Keynes MK7 6AA, UK
exoplanet@open.ac.uk, http://exoplanet.open.ac.uk/

Contents

1 Editorial

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

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 . As ever, we rely on you, the subscribers of the newsletter, to send us your abstracts of recent papers, conference announcements, thesis abstracts, job adverts etc for each edition.

Please send anything relevant to exoplanet@open.ac.uk, and it will appear in the next edition which we plan to send out close to the beginning of each calendar month.

Best wishes
Andrew Norton & Glenn White
The Open University

2 Abstracts of refereed papers

Nulling interferometry: performance comparison between space and ground-based sites for exozodiacal disc detection

D. Defrère[1], *O. Absil*[1,2], *V. Coudé du Foresto*[3], *W.C. Danchi*[4], *R. den Hartog*[5]

[1] Institut d'Astrophysique et de Géophysique, Université de Liège, 17 Allée du Six Août, B-4000 Liège, Belgium
[2] LAOG–UMR 5571, CNRS and Université Joseph Fourier, BP 53, F-38041 Grenoble, France
[3] LESIA, Observatoire de Paris-Meudon, CNRS, 5 place Jules Janssen, F-92195 Meudon, France
[4] NASA Goddard Space Flight Center, 8800, Greenbelt Road, Greenbelt, MD 20771, USA
[5] Science Payloads and Advanced Concepts Office, ESA/ESTEC, postbus 299, NL-2200 AG Noordwijk, The Netherlands

Astronomy & Astrophysics, published (2008A&A...490..435D/arXiv:0808.3713)

Context: Characterising the circumstellar dust around nearby main sequence stars is a necessary step in understanding the planetary formation process and is crucial for future life-finding space missions such as ESA's Darwin or NASA's terrestrial planet finder (TPF). Besides paving the technological way to Darwin/TPF, the space-based infrared interferometers Pegase and FKSI (Fourier-Kelvin Stellar Interferometer) will be valuable scientific precursors. Aims: We investigate the performance of Pegase and FKSI for exozodiacal disc detection and compare the results with ground-based nulling interferometers. Methods: We used the GENIEsim software (Absil et al. 2006, A&A, 448, 787) which was designed and validated to study the performance of ground-based nulling interferometers. The software has been adapted to simulate the performance of space-based nulling interferometers by disabling all atmospheric effects and by thoroughly implementing the perturbations induced by payload vibrations in the ambient space environment. Results: Despite using relatively small telescopes ($\leq$0.5 m), Pegase and FKSI are very efficient for exozodiacal disc detection. They are capable of detecting exozodiacal discs 5 and 1 time respectively, as dense as the solar zodiacal cloud, and they outperform any ground-based instrument. Unlike Pegase, FKSI can achieve this sensitivity for most targets of the Darwin/TPF catalogue thanks to an appropriate combination of baseline length and observing wavelength. The sensitivity of Pegase could, however, be significantly boosted by considering a shorter interferometric baseline length. Conclusions: Besides their main scientific goal (characterising hot giant extrasolar planets), the space-based nulling interferometers Pegase and FKSI will be very efficient in assessing within a few minutes the level of circumstellar dust in the habitable zone around nearby main sequence stars down to the density of the solar zodiacal cloud. These space-based interferometers would be complementary to Antarctica-based instruments in terms of sky coverage and would be ideal instruments for preparing future life-finding space missions.

Download/Website: `http://fr.arxiv.org/abs/0808.3713`

Contact: `defrere@astro.ulg.ac.be`

Direct Imaging and Spectroscopy of a Planetary Mass Candidate Companion to a Young Solar Analog

David Lafrenière, Ray Jayawardhana & Marten H. van Kerkwijk
Department of Astronomy and Astrophysics, University of Toronto, 50 St. George Street, Toronto, ON, M5S 3H4, Canada

Astrophysical Journal Letters, in press (arXiv:0809.1424)

We present Gemini near-infrared adaptive optics imaging and spectroscopy of a planetary mass candidate companion to 1RXS J160929.1-210524, a roughly solar-mass member of the 5 Myr-old Upper Scorpius association. The object, separated by 2.22″ or 330 AU at ∼150 pc, has infrared colors and spectra suggesting a temperature of 1800^{+200}_{-100} K, and spectral type of L4$^{+1}_{-2}$. The H- and K-band spectra provide clear evidence of low surface gravity, and thus youth. Based on the widely used DUSTY models, we infer a mass of 8^{+4}_{-2} $M_{\rm Jupiter}$. If gravitationally bound, this would be the lowest mass companion imaged around a normal star thus far, and its existence at such a large separation would pose a serious challenge to theories of star and planet formation.

Download/Website: `http://arxiv.org/abs/0809.1424`

Contact: `lafreniere@astro.utoronto.ca`

The HARPS search for southern extra-solar planets. XVII. Six long-period giant planets around BD -17 0063, HD 20868, HD 73267, HD 131664, HD 145377, HD 153950

C. Moutou[1]*,M. Mayor*[2]*, G. Lo Curto*[3]*, S. Udry*[2]*, F. Bouchy*[4]*, W. Benz*[5]*, C. Lovis*[2]*, D. Naef*[3]*, F. Pepe*[2]*, D. Queloz*[2]*, N.C. Santos*[6]

[1] Laboratoire d'Astrophysique de Marseille, OAMP, Université Aix-Marseille & CNRS, 38 rue Frédéric Joliot-Curie, 13388 Marseille cedex 13, France
[2] Observatoire de Genève, Université de Genève, 51 ch.des Maillettes, 1290 Sauverny, Switzerland
[3] ESO, Alonso de Cordoba 3107, Vitacura Casilla 19001, Santiago, Chile
[4] Institut d'Astrophysique de Paris, 98bis bd Arago, 75014 Paris, France
[5] Physikalisches Institut Universität Bern, Sidlerstrasse 5, 3012 Bern, Switzerland
[6] Centro de Astrofísica, Universidade do Porto, Rua das Estrelas, 4150-762 Porto, Portugal

Astronomy & Astrophysics, in press (arXiv:0810.4662)

We report the discovery of six new substellar companions of main-sequence stars, detected through multiple Doppler measurements with the instrument HARPS installed on the ESO 3.6m telescope, La Silla, Chile. These extrasolar planets are orbiting the stars BD -17 0063, HD 20868, HD 73267, HD 131664, HD 145377, HD 153950. The orbital characteristics which best fit the observed data are depicted in this paper, as well as the stellar and planetary parameters. Masses of the companions range from 2 to 18 Jupiter masses, and periods range from 100 to 2000 days. The observational data are carefully analysed for activity-induced effects and we conclude on the reliability of the observed radial-velocity variations as of exoplanetary origin. Of particular interest is the very massive planet (or brown-dwarf companion) around the metal-rich HD 131664 with M2sini= 18.15 MJup, and a 5.34-year orbital period. These new discoveries reinforces the observed statistical properties of the exoplanet sample as known so far.

Download/Website: `http://arxiv.org/abs/0810.4662`

Contact: `Claire.Moutou@oamp.fr`

Planetary microlensing signals from the orbital motion of the source star around the common barycentre

S. Rahvar[1], *M. Dominik*[2]
[1] Department of Physics, Sharif University of Technology,
P.O. Box 11365–9161, Tehran, Iran
[2] SUPA, University of St Andrews, School of Physics & Astronomy, North Haugh, St Andrews, KY16 9SS, UK

Monthly Notices of the Royal Astronomical Society, accepted (arXiv:0810.3915)

With several detections, the technique of gravitational microlensing has proven useful for studying planets that orbit stars at Galactic distances, and it can even be applied to detect planets in neighbouring galaxies. So far, planet detections by microlensing have been considered to result from a change in the bending of light and the resulting magnification caused by a planet around the foreground lens star. However, in complete analogy to the annual parallax effect caused by the revolution of the Earth around the Sun, the motion of the source star around the common barycentre with an orbiting planet can also lead to observable deviations in microlensing light curves that can provide evidence for the unseen companion. We discuss this effect in some detail and study the prospects of microlensing observations for revealing planets through this alternative detection channel. Given that small distances between lens and source star are favoured, and that the effect becomes nearly independent of the source distance, planets would remain detectable even if their host star is located outside the Milky Way with a sufficiently good photometry (exceeding present-day technology) being possible. From synthetic light curves arising from a Monte-Carlo simulation, we find that the chances for such detections are not overwhelming and appear practically limited to the most massive planets (at least with current observational set-ups), but they are large enough for leaving the possibility that one or the other signal has already been observed. However, it may remain undetermined whether the planet actually orbits the source star or rather the lens star, which leaves us with an ambiguity not only with respect to its location, but also to its properties.

Download/Website: `http://arxiv.org/abs/0810.3915`

Contact: `rahvar@sharif.edu`

The BAST algorithm for transit detection

S. Renner [1], *H. Rauer* [1,2], *A. Erikson* [1], *P. Hedelt* [1], *P. Kabath* [1], *R. Titz* [1], *H. Voss* [3]
[1] Institut für Planetenforschung, Deutsches Zentrum für Luft-und Raumfahrt (DLR), Rutherfordstrasse 2, 12489 Berlin, Germany
[2] Zentrum für Astronomie und Astrophysik, Technische Universität, Hardenbergstr. 36, 10623 Berlin, Germany
[3] Departament d'Astronomia i Meteorologia, Facultat de Física, Universitat de Barcelona, Barcelona, C/ Martí Franqués 1, 08028 Barcelona, Spain

Astronomy & Astrophysics, in press (arXiv:0810.4760v1)

Context. The pioneer space mission for photometric exoplanet searches, CoRoT, steadily monitors about 12000 stars in each of its fields of view. Transit detection algorithms are applied to derive promising planetary candidates, which are then followed-up with ground-based observations.
Aims. We present BAST (Berlin Automatic Search for Transits), a new algorithm for periodic transit detection, and test it on simulated CoRoT data.
Method. BAST searches for box-shaped signals in normalized, filtered, variability-fitted, and unfolded light curves. A low-pass filter is applied to remove high-frequency signals, and linear fits to subsections of data are subtracted to remove the star's variability. A search for periodicity is then performed in transit events identified above a given detection threshold. Some criteria are defined to better separate planet candidates from binary stars.
Results. From the analysis of simulated CoRoT light curves, we show that the BAST detection performance is similar to that of the Box-fitting Least-Square (BLS) method if the signal-to-noise ratio is high. However, the BAST box search for transits computes 10 times faster than the BLS method. By adding periodic transits to simulated

CoRoT data, we show that the minimum periodic depth detectable with BAST is a linearly increasing function of the noise level. For low-noise light curves, the detection limit corresponds to a transit depth $d \simeq 0.01$ %, i.e. a planet of 1 Earth radius around a solar-type star.

Download/Website: `http://arxiv.org/abs/0810.4760`

Contact: `stefan.renner@dlr.de`

Resolved debris disk emission around η Tel: a young Solar System or ongoing planet formation?

R. Smith[1]*, L.J. Churcher*[1]*, M.C. Wyatt*[1] *M.M. Moerchen*[2,3]*, C.M. Telesco*[2]

[1] Institute of Astronomy, University of Cambridge, Madingley Road, Cambridge CB3 0HA, UK
[2] Department of Astronomy, University of Florida, 211 Bryant Space Science Center, P.O. Box 112055, Gainesville, FL, 32611-2055, USA
[3] European Southern Observatory, Alonso de Cordova 3107, Casilla 19001, Vitacura, Santiago 19, Chile

Astronomy & Astrophysics, accepted (arXiv:0810.5087)

60% of the A star members of the 12 Myr old beta Pictoris moving group (BPMG) show significant excess emission in the mid-infrared, several million years after the proto-planetary disk is thought to disperse. Theoretical models suggest this peak may coincide with the formation of Pluto-sized planetesimals in the disk, stirring smaller bodies into collisional destruction. Here we present resolved mid-infrared imaging of the disk of η Tel (A0V in the BPMG) and consider its implications for the state of planet formation in this system. η Tel was observed at 11.7 and 18.3μm using T-ReCS on Gemini South. The resulting images were compared to simple disk models to constrain the radial distribution of the emitting material. The emission observed at 18.3μm is shown to be significantly extended beyond the PSF along a position angle of 8°. This is the first time dust emission has been resolved around η Tel. Modelling indicates that the extension arises from an edge-on disk of radius 0.5 arcsec ($\sim$24 AU). Combining the spatial constraints from the imaging with those from the spectral energy distribution shows that $>$50% of the 18μm emission comes from an unresolved dust component at $\sim$4 AU. The radial structure of the eta Tel debris disk is reminiscent of the Solar System, suggesting that this is a young Solar System analogue. For an age of 12Myr, both the radius and dust level of the extended cooler component are consistent with self-stirring models for a protoplanetary disk of 0.7 times minimum mass solar nebula. The origin of the hot dust component may arise in an asteroid belt undergoing collisional destruction, or in massive collisions in ongoing terrestrial planet formation.

Download/Website: `http://arxiv.org/abs/0810.5087`

Contact: `rsed@ast.cam.ac.uk`

The Detectability of Exo-Earths and Super-Earths Via Resonant Signatures in Exozodiacal Clouds

Christopher C. Stark[1]*, Marc J. Kuchner*[2]

[1] Department of Physics, University of Maryland, Box 197, 082 Regents Drive, College Park, MD 20742-4111, USA
[2] NASA Goddard Space Flight Center, Exoplanets and Stellar Astrophysics Laboratory, Code 667, Greenbelt, MD 20771

Astrophysical Journal, published (686, 637-648 (2008))

Directly imaging extrasolar terrestrial planets necessarily means contending with the astrophysical noise of exozodiacal dust and the resonant structures created by these planets in exozodiacal clouds. Using a custom tailored hybrid symplectic integrator we have constructed 120 models of resonant structures created by exo-Earths and super-Earths on circular orbits interacting with collisionless steady-state dust clouds around a Sun-like star. Our models include enough particles to overcome the limitations of previous simulations that were often dominated by a handful of long-lived particles, allowing us to quantitatively study the contrast of the resulting ring structures. We found that in

the case of a planet on a circular orbit, for a given star and dust source distribution, the morphology and contrast of the resonant structures depend on only two parameters: planet mass and $\sqrt{a_{\rm p}}/\beta$, where $a_{\rm p}$ is the planet's semi-major axis and β is the ratio of radiation pressure force to gravitational force on a grain. We constructed multiple-grain-size models of 25,000 particles each and showed that in a collisionless cloud, a Dohnanyi crushing law yields a resonant ring whose optical depth is dominated by the largest grains in the distribution, not the smallest. We used these models to estimate the mass of the lowest-mass planet that can be detected through observations of a resonant ring for a variety of assumptions about the dust cloud and the planet's orbit. Our simulations suggest that planets with mass as small as a few times Mar's mass may produce detectable signatures in debris disks at $a_{\rm p} \gtrsim 10$ AU.

Download/Website: `http://lanl.arxiv.org/abs/0810.2702`

Contact: `starkc@umd.edu`

3 Jobs and positions

PhD studentship in Circumstellar Bodies in Exo-Solar Systems

Alan Fitzsimmons, Chris Watson
Queen's University Belfast, Belfast BT7 1NN, Northern Ireland

Astrophysics Research Centre, Available Immediately

This fully funded PhD studentship is under the supervision of Alan Fitzsimmons and Chris Watson in the Astrophysics Research Centre. In our own solar system, the formation of massive planets has resulted in the presence of belts of minor bodies and the continuous appearance of comets near the Sun. Such asteroids and comets should exist in other Solar systems as well. We are starting a programme of searches for low-mass bodies in known planetary systems, to constrain the formation and evolution of known exoplanets.

This will be an observationally led programme using both spectroscopy and imaging of the host stars. Using existing data, a search for cometary bodies will be conducted using high-resolution optical spectroscopy in order to detect the signature of the gas released when they are near their parent star. The same data will be used to constrain the activity and spin-axis of the parent star. Dust disks and Kuiper-belts will be discovered for using both high-resolution coronographic imaging and IR/sub-mm observations.

ARC plays a lead role in the SuperWASP consortium, the most successful UK team in the discovery and characterisation of exoplanetary systems. This research project builds upon that heritage.
Skills: The successful student will obtain skills in working with and analysing a variety of astronomical datasets, signal processing, computer programming and understanding of planetary system evolution.

Training: A physics graduate would be required to attend the Level 4 Astrophysics module. All students will undertake the ARC training programme, including participating in the STFC Summer School, a literature review and attendance at the ARC seminar series. It is expected that the student will undertake at least two observing trips to major international facilities to obtain experience in the use of front-line astronomical telescopes, and will attend at least one international conference.

For further details contact either Alan Fitzsimmons or Chris Watson.

Download/Website: `http://star.pst.qub.ac.uk/`

Contact: `a.fitzsimmons@qub.ac.uk`

Theoretical Astrophysics Postdoctoral Fellowship

UF Theory Group, Eric B. Ford, Jonathan Tan
University of Florida, 211 Bryant Space Science Center, Gainesville, FL 32611-2055, USA

Gainesville, FL, USA, Fall 2009

The Theoretical Astrophysics Group at the University of Florida (UF), invites applications for one or more postdoctoral fellowship positions with an anticipated start date of Fall 2009. Successful candidate(s) will be expected to carry out original research in theoretical astrophysics, independently and/or in collaboration with UF faculty in the Astronomy and/or Physics department.
UF has extensive high-performance computing facilities and is a partner in the 10.4m Gran Telescopio Canarias Observatory and the SDSS III survey. UF's observational and instrumentation groups are leading three major new instruments (GTC-CANARICAM, Gemini-FLAMINGOS2, SDSS-MARVELS) that are expected to be operational in 2009. Candidates are encouraged to propose theoretical research that relates to these facilities and/or existing research programs at UF, including exoplanets, star and galaxy formation, and stellar populations. Further information including a list of faculty and their research interests is available at the above URLs.
The appointment is renewable annually for up to 3 years based on satisfactory performance, needs of the Departments and College, and available funding. A Ph.D. in a relevant field by the starting date is required. Application materials (CV, publications list, statement of research interests and plans (max 5 pages), and three letters of reference) should be emailed to theory09 @ astro.ufl.edu. Application materials should be received by January 1, 2009 to ensure full consideration. For more information about the position, please contact Profs. Eric Ford or Jonathan Tan.
The University of Florida is an Equal Opportunity Institution.

Download/Website: `http://members.aas.org/JobReg/JobDetailPage.cfm?JobID=25128`

Contact: `theory09 @ astro.ufl.edu`

Sagan Exoplanet Postdoctoral Fellowships

Dr. Dawn M. Gelino

Pasadena, CA, Due: November 6, 2008; Start Date: Fall 2009

This is your last chance to apply for a 2009 Sagan Exoplanet Fellowship! Applications are due this Thursday, November 6 at 4 PM PST.
The NASA Exoplanet Science Institute announces the introduction of the Sagan Postdoctoral Fellowship Program and solicits applications for fellowships to begin in the fall of 2009. The deadline for both applications and letters of reference is Thursday, November 6, 2008 at 4 PM PST. Offers will be made before February 1, 2009, and new appointments are expected to begin on or about September 1, 2009.
The Sagan Fellowships will support outstanding recent postdoctoral scientists to conduct independent research that is broadly related to the science goals of the NASA Exoplanet Exploration program. The primary goal of missions within this program is to discover and characterize planetary systems and Earth-like planets around nearby stars. NASA also announces two other theme-based fellowship programs: the Einstein Fellowship Program which supports the Physics of the Cosmos research, and the Hubble Fellowship Program which supports Cosmic Origins research.
The proposed research may be theoretical, observational, or instrumental. This program is open to applicants of any nationality who have earned (or will have earned) their doctoral degrees on or after January 1, 2006, in astronomy, physics, or related disciplines. The fellowships are tenable at U.S. host institutions of the fellows' choice, subject to a maximum of one new fellow per host institution per year. The duration of the fellowship is up to three years:

an initial one-year appointment and two annual renewals contingent on satisfactory performance and availability of NASA funds.
We anticipate awarding 3 - 4 fellowships in 2009. Please note that these are postdoctoral Fellowships only. Previous Michelson Fellowship holders are fully eligible to apply. Please see the Sagan Fellowship website for more information and application instructions.

Download/Website: `http://nexsci.caltech.edu/sagan/fellowship.shtml`

Contact: `nexsci@ipac.caltech.edu`

Graduate student position on debris disks

Alexander V. Krivov
Astrophysical Institute, Friedrich Schiller University, Schillergässchen 2-3 , 07745 Jena, Germany

AIU, Jena, start 2009

The Astrophysical Institute and University Observatory (AIU) of the Friedrich Schiller University, Jena, Germany, is seeking candidates for a PhD student position to join the theory group at the AIU. The main research interest of the group is to study debris disks in extrasolar planetary systems. The group collaborates closely with two other groups at the AIU (observations and cosmic dust laboratory) and is involved in a number of projects at the international level. The PhD student is expected to work on dynamical, collisional or spectrophotometric modeling of debris disks and to participate in DUNES, an Open Time Key Program for the *Herschel Space Observatory*.

The position is available for three years and can commence any time in 2009. The salary is standard for PhD positions in Germany (1/2 TV-L-Ost 13 of the German federal public service scale).

The applicants should have a strong educational record and hold a masters degree or equivalent in physics or astronomy. Previous experience with astronomical research, preferrably in theoretical astrophysics, would be an advantage.

Applications should include a CV, a brief statement of research interests, and two names of reference. They should be sent to Prof. Alexander V. Krivov either by email (in PDF format only) or by snail mail to the address given above. All applications will receive full consideration until the position is filled.

Download/Website: `http://www.astro.uni-jena.de/Theory`

Contact: `krivov@astro.uni-jena.de`

Post-doctoral position in automatic stellar classification

Patrick de Laverny
Observatoire de la Côte d'Azur, Departement Cassiopee, B.P.4229, 06304 Nice Cedex 04, France

Observatoire de la Côte d'Azur, start 2009

The Observatory of the Côte d'Azur (Nice, France) calls for applications to a postdoctoral position to work on the automatic classification of the stellar spectra collected by ESO instruments.
The successful applicant will work in close collaboration with P. de Laverny, A. Recio-Blanco, V. Hill and A. Bijaoui, members of the Gaia group of the Côte d'Azur Observatory. Their main scientific interests are stellar evolution and chemical abundances, stellar populations, galactic archeology, automatic classification and the preparation of the ESA/Gaia mission. In this group, a specific algorithm is developed (MATISSE, Recio-Blanco et al., 2006, MNRAS, 370, 461) in order to automatically derive the stellar atmospheric parameters and chemical abundances from

spectra collected with current instruments or future ones, such as the Gaia/RVS. In the framework of a collaborative work with ESO, this algorithm will be applied to the ESO stellar spectra in order to provide to the whole astronomical community the stellar parameters together with the reduced spectra directly from the ESO archives.
We are particularly interested by applicants with previous experiences in the field of observational stellar astrophysics, stellar atmospheres, spectroscopic reduction/analysis and/or chemical analysis, but all applicants with experience in related areas will also be considered. Preference will also be given to candidates with strong independent research programs in these areas, as the applicant is expected to carry on his/her own research in parallel.
The position is for one year renewable, subject to performance and (very likely) extended funding. The starting date has some flexibility within the first term of 2009. Funds for travel and research will be available, as well as easy access to computing facilities.
Applicants are requested to send a CV, a list of publications, and a brief (3 pages) description of past/future research, accomplishments and relevant technical experiences. This material together with three letters of reference should be sent to Patrick de Laverny. The deadline to apply is 10 December 2008, and further information can be directly requested from the e-mail address below.

Download/Website: `http://exoplanet.open.ac.uk/`

Contact: `laverny@oca.eu`

4 As seen on astro-ph

The following list contains all the entries relating to exoplanets that we spotted on astro-ph during October 2008. If you spot any that we missed, please let us know and we'll include them in the next issue.

Exoplanets

astro-ph/0810.0210: **A Metal-biased Planet Search** by *J.S. Jenkins, H.R.A. Jones, J.R. Barnes et al*

astro-ph/0810.0288: **Saturn Forms by Core Accretion in 3.4 Myr** by *Sarah E. Dodson-Robinson, Peter Bodenheimer, Gregory Laughin et al*

astro-ph/0810.0506: **Stellar wobble caused by a binary system: Can it really be mistaken as an extra-solar planet?** by *Maria H. M. Morais & Alexandre C. M. Correia*

astro-ph/0810.0919: **Transiting exoplanets from the CoRoT space mission VI. CoRoT-Exo-3b: The first secure inhabitant of the brown-dwarf desert** by *M. Deleuil, H.J. Deeg, R. Alonso et al*

astro-ph/0810.0933: **IAU Planet Definition: Some Confusions and Their Modifications** by *R. Sarma, K. Baruah, J. K. Sarma*

astro-ph/0810.1760: **Core instability models of giant planet accretion II: forming planetary systems** by *Yamila Miguel & Adrian Brunini*

astro-ph/0810.1710: **A Planet in a 0.6-AU Orbit Around the K0 Giant HD 102272** by *A. Niedzielski, K. Golzdziewski, A. Wolszczan et al*

astro-ph/0810.1760: **Core instability models of giant planet accretion II: forming planetary systems** by *Yamila Miguel & Adrian Brunini*

astro-ph/0810.2296: **The Size Distribution of Kuiper belt objects for D$>$ 10 km** by *W. C. Fraser*

astro-ph/0810.0260: **Independent discovery and refined parameters of XO-5b: a hot Jupiter transiting a moderately faint star** by *A. Pal, G. A. Bakos, J. Fernandez et al*

astro-ph/0810.2243: **Transit Timing Effects due to an Exomoon** by *David M. Kipping*

astro-ph/0810.2288: **Is it necessary to go beyond the ponctual mass approximation for tidal perturber in close systems?** by *Stephane Mathis, Christophe Le Poncin-lafitte*

astro-ph/0810.2702: **The Detectability of Exo-Earths and Super-Earths Via Resonant Signatures in Exozodiacal Clouds** by *Christopher C. Stark & Marc J. Kuchner*

astro-ph/0810.2797: **Solar-like oscillations in red giants in the CoRoT exo-field** by *S. Hekker, C. Barban, T. Kallinger et al*

astro-ph/0810.3160: **The timescale for giant planet formation : constraints from the rotational evolution of exoplanet host stars** by *Jerome Bouvier*

astro-ph/0810.3192: **Standing on the shoulders of giants: Trojan Earths and vortex trapping in low mass self-gravitating protoplanetary disks of gas and solids** by *W. Lyra, A. Johansen, H. Klahr et al*

astro-ph/0810.3491: **New methods for large dynamical range problems in planetary formation** by *D.S. McNeil & R.P. Nelson*

astro-ph/0810.3526: **Updated parameters for the transiting exoplanet WASP-3b using RISE, a new fast camera for the Liverpool Telescope** by *N. P. Gibson, D. Pollacco, E. K. Simpson et al*

astro-ph/0810.3798: **Abundance Stratification of Exoplanet Host Stars** by *C. Saffe, H. Levato, Z. Lopez-Garcia et al*

astro-ph/0810.3915: **Planetary microlensing signals from the orbital motion of the source star around the common barycentre** by *S. Rahvar & M. Dominik*

astro-ph/0810.4076: **Mean Motion Resonances in Extrasolar Planetary Systems with Turbulence, Interactions, and Damping** by *Daniel Lecoanet, Fred C. Adams & Anthony M. Bloch*

astro-ph/0810.4662: **The HARPS search for southern extra-solar planets XVII. Six long-period giant planets around BD -17 0063, HD 20868, HD 73267, HD 131664, HD 145377, HD 153950** by *C. Moutou, M. Mayor, G. Lo Curto et al*

astro-ph/0810.4725: **The Transit Light Curve Project. X. A Christmas Transit of HD 17156b** by *Joshua N. Winn, Matthew J. Holman, Gregory W. Henry et al*

astro-ph/0810.5273: **NUV radii of the extrasolar planet HD 209458b** by *J. M. Desert, A. Vidal-Madjar, A. Lecavelier des Etangs et al*

astro-ph/0810.5348: **Low Mass Companions for Five Solar-Type Stars from the Magellan Planet Search Program** by *Dante Minniti, R. Paul Butler, Mercedes Lopez-Morales et al*

Disks

astro-ph/0810.1003: **Formation and Evolution of Planetary Systems (FEPS): Properties of Debris Dust around Solar-type Stars** by *John M. Carpenter, Jeroen Bouwman, Eric E. Mamajek et al*

astro-ph/0810.4564: **Epsilon Eridani's Planetary Debris Disk: Structure and Dynamics based on Spitzer and CSO Observations** by *D. Backman, M. Marengo, K. Stapelfeldt et al*

astro-ph/0810.4575: **A slowly accreting 10 Myr old transitional disk in Orion OB1a** by *C. Espaillat, J. Muzerolle, J. Hernandez et al*

astro-ph/0810.5087: **Resolved debris disk emission around eta Tel: a young Solar System or ongoing planet formation?** by *R. Smith, L.J. Churcher, M.C. Wyatt et al*

astro-ph/0810.5314: **Orbital Evolution of a Particle Interacting with a Single Planet in a Protoplanetary Disk** by *Takayuki Muto & Shu-ichiro Inutsuka*

Instrumentation and Techniques

astro-ph/0810.1589: **Selection Functions in Doppler Planet Searches** by *S. J. O'Toole, C. G. Tinney, H. R. A. Jones et al*

astro-ph/0810.2244: **XROM and RCOM: Two New OGLE-III Real Time Data Analysis Systems** by *A. Udalski*

astro-ph/0810.4760: **The BAST algorithm for transit detection** by *S. Renner, H. Rauer, A. Erikson et al*