ExoPlanet News
An Electronic Newsletter

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Contents

1 Editorial

Welcome to the fifth edition of ExoPlanet News, an electronic newsletter reporting the latest developments and research outputs in the field of exoplanets. An extra item this month is the invitation from Vincent Coudé du Foresto to join the 'Blue Dots Team' whose goal is to prepare a roadmap towards the detection and characterization of habitable exoplanets. See the announcement in Section 6 of this newsletter for further details.

Past editions, 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

2 Abstracts of refereed papers

WASP-5b: a dense, very-hot Jupiter transiting a 12th-mag Southern-hemisphere star

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Monthly Notices of the Royal Astronomical Society, in press (arXiv:0801.1685)

We report the discovery of WASP-5b, a Jupiter-mass planet orbiting a 12th-mag G-type star in the Southern hemisphere. The 1.6-d orbital period places WASP-5b in the class of very-hot Jupiters and leads to a predicted equilibrium temperature of 1750 K. WASP-5b is the densest of any known Jovian-mass planet, being a factor seven denser than TrES-4, which is subject to similar stellar insolation, and a factor three denser than WASP-4b, which has a similar orbital period. We present transit photometry and radial-velocity measurements of WASP-5 (= USNO-B1 0487-0799749), from which we derive the mass, radius and density of the planet: $M_P = 1.58^{+0.13}_{-0.08}\,M_J$, $R_P = 1.090^{+0.094}_{-0.058}\,R_J$ and $\rho_P = 1.22^{+0.19}_{-0.24}\,\rho_J$. The orbital period is $P = 1.6284296^{+0.0000048}_{-0.0000037}$ d and the mid-transit epoch is T_C (HJD) $= 2454375.62466^{+0.00026}_{-0.00025}$.

Download/Website: `http://arxiv.org/abs/0801.1685`

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ARTEMiS (Automated Robotic Terrestrial Exoplanet Microlensing Search) – A possible expert-system based cooperative effort to hunt for planets of Earth mass and below

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Astronomische Nachrichten, in press (arXiv:0801.2162)

The technique of gravitational microlensing is currently unique in its ability to provide a sample of terrestrial exoplanets around both Galactic disk and bulge stars, allowing to measure their abundance and determine their distribution with respect to mass and orbital separation. Thus, valuable information for testing models of planet formation and orbital migration is gathered, constituting an important piece in the puzzle for the existence of life forms throughout the Universe. In order to achieve these goals in reasonable time, a well-coordinated effort involving a network of either 2m or 4×1m telescopes at each site is required. It could lead to the first detection of an Earth-mass planet outside the Solar system, and even planets less massive than Earth could be discovered. From April 2008, ARTEMiS (Automated Robotic Terrestrial Exoplanet Microlensing Search) is planned to provide a platform for a three-step strategy of survey, follow-up, and anomaly monitoring. As an expert system embedded in eSTAR (e-Science Telescopes for Astronomical Research), ARTEMiS will give advice for follow-up based on a priority algorithm that selects targets to be observed in order to maximize the expected number of planet detections, and will also alert on deviations from ordinary microlensing light curves by means of the SIGNALMEN anomaly detector. While the use of the VOEvent (Virtual Observatory Event) protocol allows a direct interaction with the telescopes that are part of the HTN (Heterogeneous Telescope Networks) consortium, additional interfaces provide means of communication with all existing microlensing campaigns that rely on human observers. The success of discovering a planet by microlensing critically depends on the availability of a telescope in a suitable location at the right time, which can mean within 10 min. To encourage follow-up observations, microlensing campaigns are therefore releasing photometric data in real time. On ongoing planetary anomalies, world-wide efforts are being undertaken to make sure that sufficient data are obtained, since there is no second chance. Real-time modelling offers the opportunity of live discovery of extra-solar planets, thereby providing "Science live to your home".

Download/Website: `http://www.artemis-uk.org/`

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Precise radial velocities of giant stars. IV. A correlation between surface gravity and radial velocity variation and a statistical investigation of companion properties.

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Astronomy & Astrophysics, in press (arXiv:0801.0741)

Since 1999, we have been conducting a radial velocity survey of 179 K giants using the Coudé Auxiliary Telescope at UCO/Lick observatory. At present ∼20−100 measurements have been collected per star with a precision of 5 to 8 m s^{-1}. Of the stars monitored, 145 (80%) show radial velocity (RV) variations at a level >20 m s^{-1}, of which 43 exhibit significant periodicities. **Aim:** Our aim is to investigate possible mechanism(s) that cause these observed RV variations. We intend to test whether these variations are intrinsic in nature, or possibly induced by companions, or both. In addition, we aim to characterise the parameters of these companions. **Method:** A relation between $\log g$ and the amplitude of the RV variations is investigated for all stars in the sample. Furthermore, the hypothesis that all periodic RV variations are caused by companions is investigated by comparing their inferred orbital statistics with the statistics of companions around main sequence F, G, and K dwarfs. **Results:** A strong relation is found between the amplitude of the RV variations and $\log g$ in K giant stars, as suggested earlier by Hatzes & Cochran (1998). However, most of the stars exhibiting periodic variations are located above this relation. These RV variations can be split in a periodic component which is not correlated with $\log g$ and a random residual part which *does* correlate with $\log g$. Compared to main-sequence dwarf stars, K giants frequently exhibit periodic RV variations. Interpreting these RV variations as being caused by companions, the orbital parameters are different from the companions orbiting dwarfs. **Conclusions:** Intrinsic mechanisms play an important role in producing RV variations in K giants stars, as suggested by their dependence on $\log g$. However, it appears that periodic RV variations are *additional* to these intrinsic variations, consistent with them being caused by companions. If indeed the majority of the periodic RV variations in K giants is interpreted as due to substellar companions, then massive planets are significantly more common around K giants than around F, G, K main-sequence stars.

Download/Website: `http://arxiv.org/abs/0801.0741`

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Discovery of a Scattering Disk around the Low-Mass T Tauri Star FN Tauri

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Astrophysical Journal Letters, published

We have discovered an optically thick, nearly face-on circumstellar disk around a single M5 classical T Tauri star, FN Tau, using the coronagraphic imager CIAO on the Subaru telescope. This is the least massive T Tauri star whose circumstellar structure has been directly imaged as a scattering disk. The surface brightness in the H band declines as a power law of $r^{-2.5\pm0.1}$ (110 AU $\leq r \leq$ 260 AU), suggesting that the disk is flared. The disk morphology appears to be relatively featureless except for an azimuthal asymmetry in the surface brightness, indicating that the disk is not perfectly face-on but is slightly tilted. The disk mass, derived from a simple disk emission model with previous photometry at optical to millimeter wavelengths, is ∼0.007 $M_{\odot}$, 6 % of the mass of the central star. The disk around FN Tau is one of the best targets for disk and planet formation studies around M stars.

Download/Website: `http://adsabs.harvard.edu/abs/2008ApJ...673L..67K`

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Astrometric and photometric monitoring of GQ Lup and its sub-stellar companion

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Astronomy & Astrophysics, in press (arXiv:0801.2287)

Neuhäuser et al. (2005) presented direct imaging evidence for a sub-stellar companion to the young T Tauri star GQ Lup. Common proper motion was highly significant, but no orbital motion was detected. Faint luminosity, low gravity, and a late-M/early-L spectral type indicated that the companion is either a planet or a brown dwarf.
We have monitored GQ Lup and its companion in order to detect orbital and parallactic motion and variability in its brightness. We also search for closer and fainter companions.
We have taken six more images with the VLT Adaptive Optics instrument NACO from May 2005 to Feb 2007, always with the same calibration binary from Hipparcos for both astrometric and photometric calibration. By adding up all the images taken so far, we search for additional companions.
The position of GQ Lup A and its companion compared to a nearby non-moving background object varies as expected for parallactic motion by about one pixel ($2 \cdot \pi$ with parallax π). We could not find evidence for variability of the GQ Lup companion in the K_s-band (standard deviation being ± 0.08 mag), which may be due to large error bars. No additional companions are found with deep imaging.
There is now exceedingly high significance for common proper motion of GQ Lup A and its companion. In addition, we see for the first time an indication for orbital motion (~ 2 to 3 mas/yr decrease in separation, but no significant change in the position angle), consistent with a near edge-on or highly eccentric orbit. We measured the parallax for GQ Lup A to be $\pi = 6.4 \pm 1.9$ mas (i.e. 156 ± 50 pc) and for the GQ Lup companion to be 7.2 ± 2.1 mas (i.e. 139 ± 45 pc), both consistent with being in the Lupus I cloud and bound to each other.

Download/Website: `http://xxx.lanl.gov/abs/0801.2287`

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On the observability of resonant structures in planetesimal disks due to planetary migration

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Astronomy & Astrophysics, in press (arXiv:0801.2691v1)

The observed clumpy structures in debris disks are commonly interpreted as particles trapped in mean-motion resonances with an unseen exo-planet. Populating the resonances requires a migrating process of either the particles (spiraling inward due to drag forces) or the planet (moving outward). Because the drag time-scale in resolved debris disks is generally long compared to the collisional time-scale, the planet migration scenario might be more likely, but this model has so far only been investigated for planets on circular orbits. We present a thorough study of the impact of a migrating planet on a planetesimal disk, by exploring a broad range of masses and eccentricities for the planet. We discuss the sensitivity of the structures generated in debris disks to the basic planet parameters. We perform many N-body numerical simulations, using the symplectic integrator SWIFT, taking into account the gravitational influence of the star and the planet on massless test particles. A constant migration rate is assumed for the planet. The effect of planetary migration on the trapping of particles in mean motion resonances is found to be very sensitive to the initial eccentricity of the planet and of the planetesimals. A planetary eccentricity as low as 0.05 is enough to smear out all the resonant structures, except for the most massive planets. The planetesimals also initially have to be on orbits with a mean eccentricity of less than than 0.1 in order to keep the resonant clumps visible. This numerical work extends previous analytical studies and provides a collection of disk images that may help in interpreting the observations of structures in debris disks. Overall, it shows that stringent conditions must be fulfilled to obtain observable resonant structures in debris disks. Theoretical models of the origin of planetary migration will therefore have to explain how planetary systems remain in a suitable configuration to reproduce the observed structures.

Download/Website: http://arxiv.org/abs/0801.2691

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Sodium Absorption From the Exoplanetary Atmosphere of HD189733b Detected in the Optical Transmission Spectrum

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Astrophysical Journal Letters, published (2008ApJ...673L..87R)

We present the first ground-based detection of sodium absorption in the transmission spectrum of an extrasolar planet. Absorption due to the atmosphere of the extrasolar planet HD189733b is detected in both lines of the Na1 doublet. High spectral resolution observations were taken of eleven transits with the High Resolution Spectrograph (HRS) on the 9.2 meter Hobby-Eberly Telescope (HET). The Na1 absorption in the transmission spectrum due to HD189733b is $(-67.2 \pm 20.7) \times 10^{-5}$ deeper in the "narrow" spectral band that encompasses both lines relative to adjacent bands. The 1σ error includes both random and systematic errors, and the detection is $>3\sigma$. This amount of relative absorption in Na1 for HD189733b is $\sim 3\times$ larger than detected for HD209458b by Charbonneau et al. (2002), and indicates these two hot-Jupiters may have significantly different atmospheric properties.

Download/Website: http://arxiv.org/abs/0712.0761

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Why are there so few hot Jupiters?

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Monthly Notices of the Royal Astronomical Society, in press (arXiv:0712.0823)

We analyse the statistics of 'hot Jupiters' (extrasolar planets with semi-major axes $a < 0.1$ AU) and compare the results to theoretical models of massive planet migration at small radii. We find that, for planet masses $M_p \sin i > 0.5 M_J$, the number of hot Jupiters is at most modestly elevated above theoretical migration predictions normalized at larger orbital radii. The evidence for any 'pile-up' at small radii is weak (statistically insignificant). This implies that planets pause at small radii for a period no longer than $\simeq 10^5$ yr, before being destroyed. The mass function of hot Jupiters *is* deficient in high mass planets as compared to a reference sample located further out, but again the small sample size precludes definitive conclusions. We suggest that these properties are consistent with disc migration followed by entry into a magnetospheric cavity close to the star. Using numerical simulations, we show that entry into the cavity results in a slowing of migration, accompanied by a growth in orbital eccentricity that would rapidly destroy the planet. Eccentricity growth is likely to be faster for more massive planets, and this may be able to explain changes in the planetary mass function at small radii.

Download/Website: http://arXiv.org/abs/0712.0823

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A young massive planet in a star-disk system

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Nature, published, Nature 451, 38-41, 2008

There is a general consensus that planets form within disks of dust and gas around newly born stars. Details of their formation process, however, are still a matter of ongoing debate. The timescale of planet formation remains unclear, so the detection of planets around young stars with protoplanetary disks is potentially of great interest. Hitherto, no such planet has been found. Here we report the detection of a planet of mass (9.8±3.3) $M_{\rm jupiter}$ around TW Hydrae (TW Hya), a nearby young star with an age of only 8-10 Myr that is surrounded by a well-studied circumstellar disk. It orbits the star with a period of 3.56 days at 0.04 AU, inside the inner rim of the disk. This demonstrates that planets can form within 10 Myr, before the disk has been dissipated by stellar winds and radiation.

Download/Website: http://www.nature.com/nature/journal/v451/n7174/pdf/nature06426.pdf

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WASP-4b: a 12th-magnitude transiting hot-Jupiter in the Southern hemisphere

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Astrophysical Journal Letters, in press (arXiv:0801.1509)

We report the discovery of WASP-4b, a large transiting gas-giant planet with an orbital period of 1.34 days. This is the first planet to be discovered by the SuperWASP-South observatory and CORALIE collaboration and the first planet orbiting a star brighter than 16^{th} magnitude to be discovered in the Southern hemisphere. A simultaneous fit to high-quality lightcurves and precision radial-velocity measurements leads to a planetary mass of $1.22^{+0.09}_{-0.08}$ $M_{\rm Jup}$ and a planetary radius of $1.42^{+0.07}_{-0.04}$ $R_{\rm Jup}$. The host star is USNO-B1.0 0479-0948995, a G7V star of visual magnitude 12.5. As a result of the short orbital period, the predicted surface temperature of the planet is 1761 K, making it an ideal candidate for detections of the secondary eclipse at infrared wavelengths.

Download/Website: http://arxiv.org/abs/0801.1509

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3 Abstracts of theses

Thesis: The search for transiting extra-solar planets with SuperWASP

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Thesis, published, Keele University

SuperWASP is a consortium of UK institutions performing the worlds largest survey for transiting extrasolar planets around nearby bright stars. During the last three years I have assisted with the construction, operation and data-processing of the consortiums second robotic observatory, SuperWASP-South, located in Sutherland, South Africa. In its first observing season in 2006 this observatory collected more than 700,000 images, which once reduced resulted in detailed lightcurves for over 1.1 million stars in the magnitude range 8–13. While a large number of these stars were detected as showing periodic dips in brightness that could be caused by a planet, the vast majority are contaminant stellar systems such as grazing eclipsing binaries. I have developed a series of tools to efficiently sift these candidates. By using existing catalogue data it is possible to accurately characterise the target star and select systems which are most likely to host a planetary system. I have shown that the signal-to-noise ratio of SuperWASP lightcurves is too poor to determine the nature of the system but when combined with catalogue data it is possible to eliminate certain classes of blended eclipsing binaries. These tests were incorporated into a highly successful web-based interface that was used to sift the candidates from the 2004 and 2006 datasets into a small number of high-priority candidates. Spectroscopic follow-up observations of these candidates resulted in the discovery of three planets from the SuperWASP-North observatory and two planets from our observatory in South Africa. These planets, which have remarkably different characteristics, take the number of known transiting systems to 29 (October 2007) and will help constrain our theories for the formation and evolution of short-period gas-giant planets.

Download/Website: http://www.astro.keele.ac.uk/~dw/files/thesis_pdf_version.pdf

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4 Other abstracts

The Growth of Proto-Stellar Discs

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32nd Conference on Infrared and Millimeter Waves, pp 720-721, Published (ISBN 1-4244-1438-5)

We compare interferometry observations with single-dish data at sub-millimetre wavelengths. The interferometer data trace circum-stellar discs around young stellar objects. As an example we show data for the Class I proto-star L1709B and show that it has a disc that can be modelled with a Gaussian of roughly 60 astronomical units full width at half maximum. We also review data of the Class II young stellar object TW Hydra compared to a Keplerian disc model. Using other data from the literature, we make the comparison between the flux seen by single-dish observations, which trace the envelope mass, and the flux recovered by interferometer observations, which trace the disc mass. We compare this ratio with the evolutionary status of proto-stars, as measured by their bolometric temperatures. We find that the ratio of the disc to envelope mass increases with evolutionary stage. Hence we purport that this ratio is an important diagnostic in the study of the evolution of young stellar objects, as their envelopes undergo dissipation and collapse onto their circum-stellar discs.

Download/Website: http://www.astro.cf.ac.uk/pub/Derek.Ward-Thompson/publications.html

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5 Conference announcements

Planet Formation Processes and the Development of Prebiotic Conditions

P.M. Woods, M. Velli, G. Bryden, N. Turner, A. Carballido, K. Grogan, K. Willacy, P. Liewer, W. Traub
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18–21 March 2008, in Pasadena, California, USA

The NASA Jet Propulsion Laboratory (JPL) Protoplanetary Disk Initiative is pleased to announce a workshop to be held on the Caltech campus in Pasadena, California, 18-21 March 2008. The workshop will be organised so that there will be presentations in the morning followed by discussions in small working groups in the afternoon, with the working groups reporting on their findings on the final morning.

The four working groups will be focused around the following topic areas:
I. The magneto-rotational instability in star and planet formation
II. Chemical processing of primordial material in protostellar disks
III. Dust evolution and planetesimal formation
IV. The signatures of planets in transitional and debris disks

Each working group will address a specific question related to their discipline:
I. Where does magnetic activity occur in disks?
II. What was the chemical environment during the formation of Jupiter and Saturn?
III. How can the gas drag catastrophe be avoided?
IV. How can we distinguish between different mechanisms for forming central holes in protostellar and transitional disks?

Due to the limited number of attendees that we will be able to host, the workshop will have a very specific focus, and a limited capacity. The registration fee will be dependent on the number of attendees, but will in all likelihood be small. If you would like to be considered for this workshop, please contact Paul.M.Woods@jpl.nasa.gov by February 8th 2008.

Confirmed attendees: Y. Aikawa, R. Alexander, J. Blum, F. Brauer, G. Bryden, A. Carballido, J. Carr, C. Ceccarelli, S. Charnley, J. Cuzzi, S. Desch, C. Dominik, K. Dullemond, J. Eisner, P. Estrada, A. Glassgold, U. Gorti, K. Grogan, D. Hollenbach, A. Johansen, I. Kamp, H. Klahr, K. Kretke, D. Lin, A. Markwick-Kemper, D. Matson, F. Menard, J. Muzerolle, J. Najita, G. Orton, T. Owen, P. Padoan, C. Qi, A. Quillen, A. Roberge, S. Robinson, R. Salmeron, C. Salyk, T. Sano, K. Stapelfeldt, D. Stevenson, W. Traub, N. Turner, M. Velli, M. Wardle, S. Weidenschilling, K. Willacy, P. Woods, A. Youdin, A. Zsom.

Please address any further queries to: Paul Woods (Paul.M.Woods@jpl.nasa.gov); Augusto Carballido (Augusto@jpl.nasa.gov); Geoff Bryden (Geoffrey.Bryden@jpl.nasa.gov); Neal Turner (Neal.Turner@jpl.nasa.gov); Marco Velli (Marco.C.Velli@jpl.nasa.gov)

Sponsorship is provided by JPL's Center for Exoplanet Science.

Download/Website: `http://diskworkshop.jpl.nasa.gov/`

Contact: `Paul.M.Woods@jpl.nasa.gov`

Conference on "Transiting Planets"

Didier Queloz[1] *& Dimitar Sasselov*[2]
[1] Observatoire de Genève, 51 ch. des Maillettes, 1290 Sauverny, Switzerland
[2] Harvard-Smithsonian Center for Astrophysics, 60 Garden Street MS-16, Cambridge, MA 02138-1516, USA

IAU Symposium No.253, 19–23 May 2008, American Academy of Arts & Sciences, 136 Irving Street, Cambridge, MA, USA

The symposium is motivated by the quickly expanding research on extra-solar planets and the growth of interest in this topic among the astronomy community. Among the many discoveries related to this young field, the detection and study of transiting planets has now emerged as an extremely fruitful research area. The measurement of the planetary radius combined with the measurement of the dynamic mass of the planet have provided direct access to the mean density of many hot Jupiter planets challenging the theoretical models. The special geometry of the orbit of transiting planets also allows detecting, by transmission spectroscopy, some atmospheric features of the planetary atmosphere. The observations of the secondary eclipse corresponding to the passage of the planet behind the star, have been successfully used to obtain a direct measurement of planetary fluxes. Large transit survey programs are regularly announcing new detections, triggering a wide diversity of follow-up activities - from radial velocity measurements to HST and Spitzer observations. The launch of the Corot and the Kepler space missions should move this field towards the detection of small planets the size of the Earth. All these discoveries stimulate modeling and theoretical research on the physics of the interiors and the atmospheres of planets. A decade after the first discoveries of extra-solar planets we are contemplating the first steps into the field of exo-planetology research.

Download/Website: `http://www.cfa.harvard.edu/events/2008/IAUS253/`

Contact: `didier.queloz@obs.unige.ch, sasselov@cfa.harvard.edu`

6 Announcements

Habitable Exoplanets Blue Dots Team

Vincent Coudé du Foresto
Observatoire de Paris, LESIA, 5, Place Jules Janssen, F-92190, Meudon, France

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Dear colleague,

As you probably know, the current round of Cosmic Vision assessment studies by the European Space Agency does not include missions geared towards the detection and characterization of habitable exoplanets. A meeting was held at IAS Orsay last month to draw the conclusions from this process and I was designated to set up and coordinate a committee to drive and promote this objective within a wider community than the traditional Darwin base.

The current plan is therefore to constitute a Blue Dots Team (BDT for short) whose goal is to prepare a roadmap towards the detection and characterization of habitable exoplanets. The scope of the BDT is science oriented and not restricted to a particular detection technique, and some networking activity will be needed to integrate the perspectives from different communities. The aim is to establish a consensus around this roadmap during a conference to be held in 2009. Projects issued from this roadmap would then be well positionned in the future competitions of our space (and possibly ground) agencies, and the BDT will work to take forward their promotion.

For better efficiency, I would like to limit the size of the BDT to $\sim$ 15 people, striking as much as possible a thematic (and geographic) balance. Each team member will therefore act as a coordinator of a small group of experts for his/her topic, collecting the inputs from the community and synthetizing the results for the BDT. The (tentative) list of topics is:

Science themes:
Formation and evolution of planetary systems
Biological niches
Exoplanet structures & history models
Exoplanetary atmospheres (modelling and observations)
Signatures interpretation & biomarkers
Target selection & background checks

Instrumentation themes:
Transits
Coronography
Interferometric nulling
Radial velocity
Astrometry
Microlensing
Alternate techniques

Others:
European networking & funding search
International cooperation
Links with the industry
Public outreach & education

Needless to say, a coordinator in one group can also be an expert in another group. Members of the International cooperation and European networking sub-team will include one representative from each major agency (if they so wish). These representatives will participate in joint meetings of the BDT (along with the science/instrumentation coordinators) so that they can remain fully aware of its activities.

So, please let me know (by email at team.bluedots@obspm.fr, and before February 18th) if you are interested into participating to the work of the Blue Dots Team, and what your contribution might be. Also feel free to circulate this message as needed. Please note that at the moment, there are no specific funds to support the activities of the BDT, although we will address this issue as soon as we are constituted into a team. Support from the industry will also be sought.

Best regards,
Vincent Coudé du Foresto

Contact: `team.bluedots@obspm.fr`

7 As seen on astro-ph

The following list contains all the entries relating to exoplanets that we spotted on astro-ph during December 2007 and January 2008. If you spot any that we missed, please let us know and we'll include them in the next issue.

Exoplanets

arXiv:0711.4856: **Habitable Climates** by *Spiegel, David S.; Menou, Kristen; Scharf, Caleb A.*

arXiv:0712.0004: **The On/Off Nature of Star-Planet Interactions** by *Shkolnik, Evgenya et al*

arXiv:0712.0193: **First detection of polarized scattered light from an exoplanetary atmosphere** by *Berdyugina, S. V. et al*

arXiv:0712.0761: **Sodium Absorption From the Exoplanetary Atmosphere of HD189733b Detected in the Optical Transmission Spectrum** by *Redfield, Seth et al*

arXiv:0712.0823: **Why are there so few hot Jupiters?** by *Rice, W. K. M.; Armitage, P. J. & Hogg, D. F.*

arXiv:0712.1057: **Evolution of Mid-IR Excess Around Sun-like Stars: Constraints on Models of Terrestrial Planet Formation** by *Meyer, M. R. et al*

arXiv:0712.1105: **Externally Occulted Terrestrial Planet Finder Coronagraph: Simulations and Sensitivities** by *Lyon, Richard G. et al*

arXiv:0712.1156: **Tidal friction in close-in satellites and exoplanets. The Darwin theory re-visited** by *Ferraz-Mello, Sylvio; Rodrguez, Adrin & Hussmann, Hauke*

arXiv:0712.1374: **Detection of atmospheric haze on an extrasolar planet: The 0.55 - 1.05 micron transmission spectrum of HD189733b with the Hubble Space Telescope** by *Pont, F. et al*

arXiv:0712.1550: **Detection of Small Kuiper Belt Objects by Stellar Occultations** by *Stevenson, R.*

arXiv:0712.2073: **Improved parameters for the transiting planet HD 17156b: a high-density giant planet with a very eccentric orbit** by *M. Gillon et al.*

arXiv:0712.2242: **On Signatures of Atmospheric Features in Thermal Phase Curves of Hot Jupiters** by *Rauscher, Emily et al*

arXiv:0712.2284: **The PennState/Toruń Center for Astronomy Search for Planets around Evolved Stars** by *Niedzielski, Andrzej & Wolszczan, Aleksander*

arXiv:0712.2286: **The PSU/TCfA Search for Planets Around Evolved Stars: Vsini Measurements for Slow Rotating F-K Giants** by *Nowak, Grzegorz & Niedzielski, Andrzej*

arXiv:0712.2287: **The PennState/Toruń Center for Astronomy Search for Planets Around Evolved Stars. Basic parameters of a sample of evolved stars** by *Zielinski, Pawel & Niedzielski, Andrzej*

arXiv:0712.2297: **A HET search for planets around evolved stars** by *Niedzielski, Andrzej & Wolszczan, Alex*

arXiv:0712.2298: **The PSU/TCfA Search for Planets around Evolved Stars. Stellar parameters and activity indicators of targets** by *Niedzielski, Andrzej; Nowak, Grzegorz & Zielinski, Pawel*

arXiv:0712.2489: **Habitable Planet Formation in Extreme Planetary Systems: Systems with Multiple Stars and/or Multiple Planets** by *Nader Haghighipour*

arXiv:0712.2569: **A Possible Spin-Orbit Misalignment in the Transiting Eccentric Planet HD 17156b** by *Narita, N., et al.*

arXiv:0712.2850: **Expanding and Improving the Search for Habitable Worlds** by *Mandell, Avi M.*

arXiv:0712.3270: **First Observation of Planet-Induced X-ray Emission: The System HD 179949** by *Saar, S.H., et al.*

arXiv:0712.3917: **Five Planets Orbiting 55 Cancri** by *Fischer, Debra A. et al*

arXiv:0712.4283: **XO-3b: A Massive Planet in an Eccentric Orbit Transiting an F5V Star** by *Johns-Krull, Christopher M. et al*

arXiv:0801.0716: **Tidal Evolution of Close-in Extra-Solar Planets** by *Jackson, Brian, Greenberg, Richard & Barnes, Rory*

arXiv:0801.1089: **Are retrograde resonances possible in multi-planet systems?** by *Julie Gayon, Eric Bois*

arXiv:0801.1368: **Formation of Hot Planets by a combination of planet scattering, tidal circularization, and Kozai mechanism** by *Nagasawa, M., Ida, S. & Bessho, T.*
arXiv:0801.1496: **Parameters and Predictions for the Long-Period Transiting Planet HD 17156b** by *Jonathan Irwin et al.*
arXiv:0801.1509: **WASP-4b: a 12th-magnitude transiting hot-Jupiter in the Southern hemisphere** by *Wilson, D.M. et al*
arXiv:0801.1685: **WASP-5b: a dense, very-hot Jupiter transiting a 12th-mag Southern-hemisphere star** by *Anderson, D.R. et al.*
arXiv:0801.1841: **Improved parameters for extrasolar transiting planets** by *Torres, G.; Winn, J. N. & Holman, M. J.*
arXiv:0801.1852: **Detecting the Glint of Starlight on the Oceans of Distant Planets** by *Williams, D. M. & Gaidos, E.*
arXiv:0801.2186: **Extrasolar planet detection by binary stellar eclipse timing: evidence for a third body around CM Draconis** by *Deeg, H.H. et al*
arXiv:0801.2560: **Terrestrial Planet Formation in Extra-Solar Planetary Systems** by *Raymond, Sean R.*
arXiv:0801.2917: **The "DODO" survey I: limits on ultra-cool substellar and planetary-mass companions to van Maanen's star (vMa 2)** by *Burleigh, M.R. et al*
arXiv:0801.2972: **On the Absorption and Redistribution of Energy in Irradiated Planets** by *Hansen, Brad*
arXiv:0801.3104: **Limits on Planets Around White Dwarf Stars** by *F. Mullally et al.*
arXiv:0801.3226: **Extrasolar Planet Interactions** by *Barnes, R. & Greenberg,R.*
arXiv:0801.3305: **Angular Momentum Accretion onto a Gas Giant Planet** by *Machida, M. et al*
arXiv:0801.3336: **Testing planet formation theories with Giant stars** by *Pasquini,L. et al*

Debris and Transition Disks

arXiv:0712.0301: **An infrared view of candidate accretion disks around massive young stars** by *Bik, A. et al*
arXiv:0712.0378: **Discovery of an extended debris disk around the F2V star HD 15745** by *Kalas, Paul et al*
arXiv:0712.0696: **The T Tauri star RY Tau as a case study of the inner regions of circumstellar dust disks** by *Schegerer, A. A. et al*
arXiv:0712.0772: **3D SPH simulations of grain growth in protoplanetary disks** by *Laibe, Guillaume et al*
arXiv:0712.0766: **Dust evolution in protoplanetary disks** by *Gonzalez, Jean-Franois et al*
arXiv:0712.2294: **On the Solar System-Debris Disk Connecction** by *Moro-Martin, Amaya*
arXiv:0712.3283: **Complex Organic Materials in the Circumstellar Disk of HR 4796A** by *Debes, J. H.; Weinberger, A. J. & Schneider, G.*
arXiv:0801.0163: **The Complete Census of 70-um-Bright Debris Disks within the FEPS (Formation and Evolution of Planetary Systems) Spitzer Legacy Survey of Sun-like Stars** by *Hillenbrand, L et al.*
arXiv:0801.0907: **Photophoretic Structuring of Circumstellar Dust Disks** by *Takeuch, Taku & Krauss, Oliver*
arXiv:0801.1116: **The Evolutionary State of Anemic Circumstellar Disks and the Primordial-to-Debris Disk Transition** by *Currie, Thayne*
arXiv:0801.1622: **Mixing in the Solar Nebula: Implications for Isotopic Heterogeneity and Large-Scale Transport of Refractory Grains** by *Alan Boss*
arXiv:0801.1926: **Resonance Trapping in Protoplanetary Disks** by *Lee, Aaron T. Thommes, Edward W. & Rasio, Frederic A.*
arXiv:0801.2108: **Eccentricity growth of planetesimals in a self-gravitating protoplanetary disc** by *Britsch, M. Clarke, C. J. & Lodato, G.*
arXiv:0801.2691: **On the observability of resonant structures in planetesimal disks due to planetary migration** by *Reche, Remy et al*
arXiv:0801.3684: **Disks, young stars, and radio waves: the quest for forming planetary systems** by *Chandler, Claire J., Shepherd, Debra S.*

arXiv:0801.3724: **Outer edges of debris discs: how sharp is sharp?** by *Thebault, Philippe, Wu, Yanqin*
arXiv:0801.4561: **Planet Shadows in Protoplanetary Disks. I: Temperature Perturbations** by *Jang-Condell, H.*
arXiv:0801.4472: **The Evolution of Primordial Disks** by *Cieza, Lucas A.*

Instrumentation and Techniques

arXiv:0712.0358: **Cadence Optimisation and Exoplanetary Parameter Sensitivity** by *Kane, Stephen R.; Ford, Eric B.* & *Ge, Jian*
arXiv:0712.3558: **Mesolensing Explorations of Nearby Masses: From Planets to Black Holes** by *Di Stefano, R.*.
arXiv:0712.3862: **Accounting for velocity jitters in planet search surveys** by *Roman V. Baluev*
arXiv:0712.4152: **The CODEX-ESPRESSO experiment: cosmic dynamics, fundamental physics, planets and much more.** by *Cristiani, S. et al*
arXiv:0801.1237: **Reconstruction of the transit signal in the presence of stellar variability** by *Alapini, Aude* & *Aigrain, Suzanne*
arXiv:0801.1510: **Discovery and Study of Nearby Habitable Planets with Mesolensing** by *Rosanne Di Stefano, Christopher Night*
arXiv:0801.1511: **Discovery and Study of Nearby Planetary and Binary Systems Via Mesolensing** by *Di Stefano, R.*
arXiv:0801.2162: **ARTEMiS (Automated Robotic Terrestrial Exoplanet Microlensing Search) - A possible expert-system based cooperative effort to hunt for planets of Earth mass and below** by *Dominik, M. et al*
arXiv:0801.2177: **Probing Interstellar Dust With Space-Based Coronagraphs** by *N. J. Turner, K. Grogan, J. B. Breckinridge*
arXiv:0801.2578: **Hexadecapole Approximation in Planetary Microlensing** by *Gould, Andrew*
arXiv:0801.2591: **Characterizing the Orbital Eccentricities of Transiting Extrasolar Planets with Photometric Observations** by *Eric B. Ford et al.*
arXiv:0801.2579: **Impact of Orbital Eccentricity on the Detection of Transiting Extrasolar Planets** by *Burke, Christopher J.*
arXiv:0801.3959: **Measuring Stellar Radial Velocities with a Dispersed Fixed-Delay Interferometer** by *Mahadevan, S. et al*
arXiv:0801.4371: **Flux-Limited Diffusion Approximation Models of Giant Planet Formation by Disk Instability** by *Boss, A.P.*
arXiv:0801.4752: **Towards a Small Prototype Planet Finding Interferometer: The next step in planet finding and characterization in the infrared** by *Danch, W.C. et al*