ExoPlanet News
An Electronic Newsletter

No. 24, November 2nd, 2009

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Contents

1 Editorial

Welcome to the twenty-fourth 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 at the beginning of December 2009. As for this issue, if you wish to include ONE figure per abstract, please do so.

Best wishes
Andrew Norton & Glenn White
The Open University

2 Abstracts of refereed papers

The full set of gas giant structures I: On the origin of planetary masses and the planetary initial mass function

C. Broeg
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Icarus, published (2009Icar..204...15B)

Context: Current planet search programs are detecting extrasolar planets at a rate of 60 planets per year. These planets show more diverse properties than was expected.
Aims: We try to get an overview of possible gas giant (proto-)planets for a full range of orbital periods and stellar masses. This allows the prediction of the full range of possible planetary properties which might be discovered in the near future.
Methods: We calculate equilibrium core-envelope structures for all conceivable locations: combinations of different planetesimal accretion rates, host star masses, and orbital separations. At each location all hydrostatic equilibrium solutions to the planetary structure equations are determined by variation of core mass and pressure over many orders of magnitude. For each location we analyze the distribution of planetary masses.
Results: We get a wide spectrum of core-envelope structures. However, practically all calculated proto-planets are in the planetary mass range. Furthermore, the planet masses show a characteristic bimodal, sometimes trimodal, distribution. For the first time, we identify three physical processes that are responsible for the three characteristic planet masses: self-gravity in the hill sphere, compact objects, and a region of very low adiabatic pressure gradient in the Hydrogen equation of state. Using these processes, we can explain the dependence of the characteristic masses on the planet's location: orbital period, host star mass, and planetesimal accretion rate (luminosity). The characteristic mass caused by the self-gravity effect at close proximity to the host star is typically one Neptune mass, thus producing the so-called Hot-Neptunes.
Conclusions: Our results suggest that hot Jupiters with orbital period less than 64 days (the exact location of the boundary depends on stellar type and accretion rate) have quite distinct properties which we expect to be reflected in a different mass distribution of these planets when compared to the ”normal” planetary population. We use our

theoretical survey to produce an upper mass limit for embedded planets: the maximum embedded equilibrium mass (MEEM). This naturally explains the lack of high mass planets between 3 and 64 days orbital period.

Download/Website: `http://dx.doi.org/10.1016/j.icarus.2009.05.033`

Contact: `broeg@space.unibe.ch`

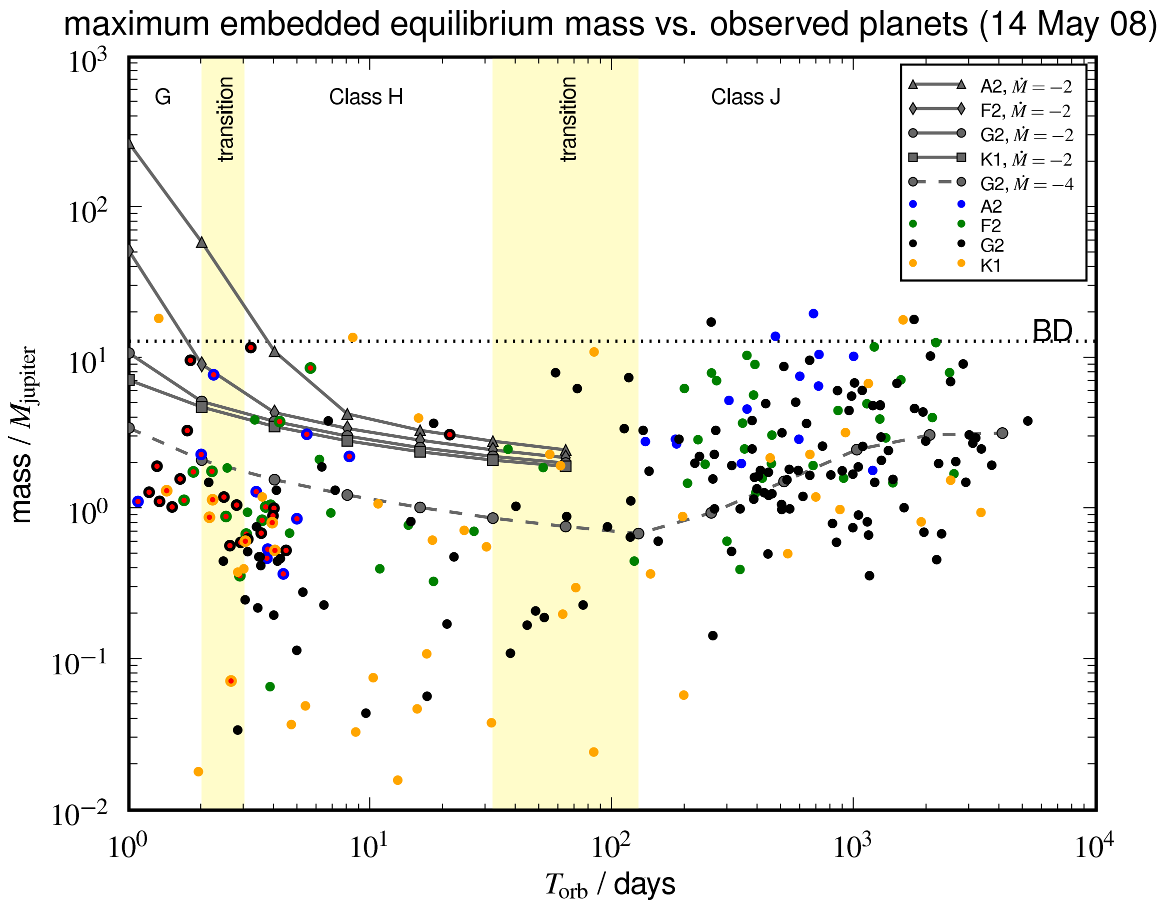

Figure 1: (Broeg) Maximum embedded equilibrium masses (MEEM) vs. today's exo-planets (circles, with red dot if exact mass, i.e. transit). Dependence on orbital period for different host stars and accretion rates: The solid grey lines represent the MEEM for the highest accretion rate. Top to bottom they have been calculated for a 2, 1.45, 1, and 0.8 solar mass host star. The dashed grey line is the resulting upper mass limit for a solar host star and a lower accretion rate ($\dot{M}_{\rm pl} = 10^{-4}$ M$_\oplus$ year^{-1}) – this corresponds to more normal conditions. Obviously most exo-planets lie below the dashed line for Class G and H. Beyond the transition region to Class J planets, the upper mass limit becomes meaningless. This is again clearly reflected in the observed data (see text).

Planets and Debris Disks: Results from a Spitzer/MIPS Search for IR Excess

G. Bryden[1], *C. A. Beichman*[2], *J. M. Carpenter*[3], *G. H. Rieke*[4], *K. R. Stapelfeldt*[1], *M. W. Werner*[1], *A. M. Tanner*[1,5], *S. M. Lawler*[2,6], *M. C. Wyatt*[7], *D. E. Trilling*[8], *K. Y. L. Su*[4] *M. Blaylock*[4], *J. A. Stansberry*[4]

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Astrophysical Journal, published (2009ApJ...705.1226B)

Using the MIPS camera on the Spitzer Space Telescope, we have searched for debris disks around 104 stars known from radial velocity studies to have one or more planets. Combining this new data with 42 already published observations of planet-bearing stars, we find that 14 of the 146 systems have IR excess at 24 and/or 70um. Only one star, HD 69830, has IR excess exclusively at 24um, indicative of warm dust in the inner system analogous to that produced by collisions in the solar system's asteroid belt. For the other 13 stars with IR excess the emission is stronger at 70um, consistent with cool dust (< 100 K) located beyond 10 AU, well outside of the orbital location of the known planets. Selection effects inhibit detection of faint disks around the planet-bearing stars (e.g. the stars tend to be more distant), resulting in a lower detection rate for IR excess than in a corresponding control sample of nearby stars not known to have planets (9±3% vs. 14±3%). Even taking into account the selection bias, we find that the difference between the dust emission around stars with planets and stars without known planets is not statistically significant.

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The Orbital Evolution of Gas Giant Planets around Giant Stars

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Astrophysical Journal Letters, in press (arXive:0910.2396)

Recent surveys have revealed a lack of close-in planets around evolved stars more massive than 1.2 $M_{\odot}$. Such planets are common around solar-mass stars. We have calculated the orbital evolution of planets around stars with a range of initial masses, and have shown how planetary orbits are affected by the evolution of the stars all the way to the tip of the Red Giant Branch (RGB). We find that tidal interaction can lead to the engulfment of close-in planets by evolved stars. The engulfment is more efficient for more-massive planets and less-massive stars. These results may explain the observed semi-major axis distribution of planets around evolved stars with masses larger than 1.5 $M_{\odot}$.

Our results also suggest that massive planets may form more efficiently around intermediate-mass stars.

Download/Website: `http://arxiv.org/abs/0910.2396`

Contact: `eva.villaver@uam.es`

Transit detections of extrasolar planets around main-sequence stars I. A sky map for Hot Jupiters

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Astronomy & Astrophysics, accepted (2009arXiv0910.2887H)

The findings of more than 350 extrasolar planets, most of them nontransiting Hot Jupiters, have revealed correlations between the metallicity of the main-sequence (MS) host stars and planetary incidence. This connection can be used to calculate the planet formation probability around other stars, not yet known to have planetary companions. We locate the promising spots for current transit surveys on the celestial plane and strive for absolute values of the expected number of transits in general. We used data of the Tycho catalog for about 1 million objects to locate all the stars with $0^{\rm m} < {\rm m_V} < 11.5^{\rm m}$ on the celestial plane. We took several empirical relations between the parameters listed in the Tycho catalog, such as distance to Earth, $m_{\rm V}$, and $(B-V)$, and those parameters needed to account for the probability of a star to host an observable, transiting exoplanet. The empirical relations between stellar metallicity and planet occurrence combined with geometrical considerations were used to yield transit probabilities for the MS stars in the Tycho catalog. Magnitude variations in the FOV were simulated to test whether this fluctuations would be detected by BEST, XO, SuperWASP and HATNet. We present a sky map of the expected number of Hot Jupiter transit events on the basis of the Tycho catalog. The comparison between the considered transit surveys yields significantly differing maps of the expected transit detections. The sky-integrated magnitude distribution predicts 20 Hot Jupiter transits with orbital periods between 1.5 d and 50 d and $m_{\rm V} < 8^{\rm m}$, of which two are currently known. In total, we expect 3412 Hot Jupiter transits to occur in front of MS stars within the given magnitude range. The most promising observing site on Earth is at latitude $= -1$.

Download/Website: `http://adsabs.harvard.edu/abs/2009arXiv0910.2887H`

Contact: `rheller@hs.uni-hamburg.de`

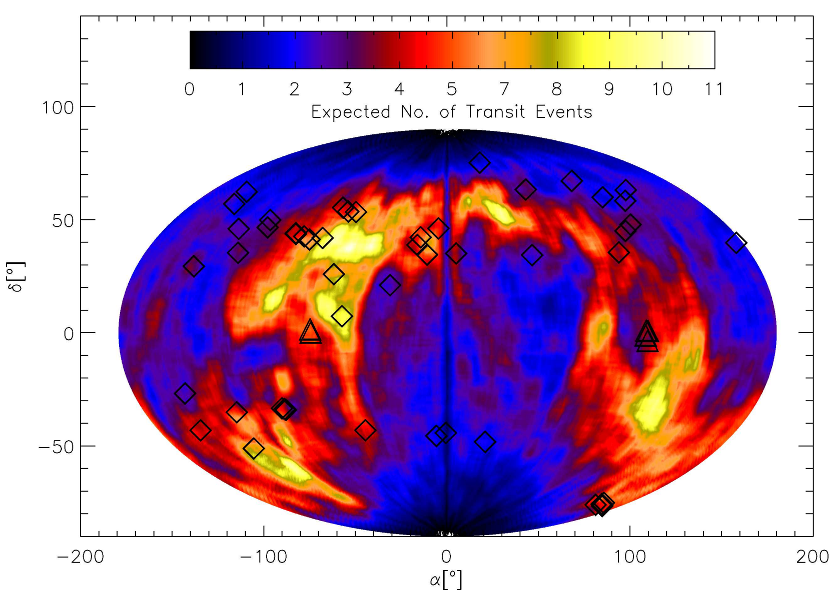

Figure 2: (Heller et al.) Sky map of the expected number of exoplanet transit events with orbital periods between $P_1 = 1.5\,$d and $P_2 = 50\,$d on the basis of 392 000 objects from the Tycho catalog. The published positions of 58 transiting planets from the Extrasolar Planets Encyclopedia (www.exoplanet.eu) as of September 1[st] 2009 are indicated with symbols: 6 detections from the space-based CoRoT mission are labeled with triangles, 52 ground-based detections marked with squares. The axes only refer to the celestial equator and meridian.

The Dynamical Origin of the Multi-Planetary System HD45364

Hanno Rein[1], *John C. B. Papaloizou* [1], *Wilhelm Kley*[2]
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Astronomy & Astrophysics, accepted for publication (arXiv:0910.5082)

The recently discovered planetary system HD45364 which consists of a Jupiter and Saturn mass planet is very likely in a 3:2 mean motion resonance. The standard scenario to form planetary commensurabilities is convergent migration of two planets embedded in a protoplanetary disc. When the planets are initially separated by a period ratio larger than two, convergent migration will most likely lead to a very stable 2:1 resonance for moderate migration rates. To avoid this fate, formation of the planets close enough to prevent this resonance may be proposed. However, such a simultaneous formation of the planets within a small annulus, seems to be very unlikely.
Rapid type III migration of the outer planet crossing the 2:1 resonance is one possible way around this problem. In this paper, we investigate this idea in detail. We present an estimate for the required convergent migration rate and confirm this with N-body and hydrodynamical simulations. If the dynamical history of the planetary system had a phase of rapid inward migration that forms a resonant configuration, we predict that the orbital parameters of the two planets are always very similar and hence should show evidence of that.
We use the orbital parameters from our simulation to calculate a radial velocity curve and compare it to observations. Our model can explain the observational data as good as the previously reported fit. The eccentricities of both planets are considerably smaller and the libration pattern is different. Within a few years, it will be possible to observe the planet-planet interaction directly and thus distinguish between these different dynamical states.

Download/Website: `http://arxiv.org/abs/0910.5082`

Contact: `hr260@cam.ac.uk`

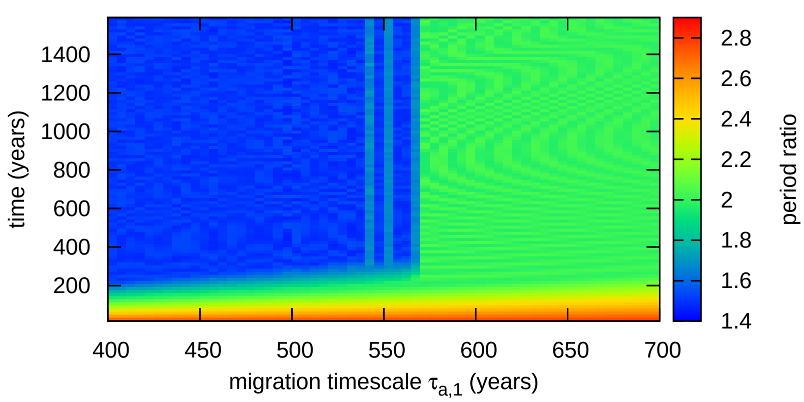

Figure 3: (Rein et al.) This plot shows the period ratio of two migrating planets as a function of the migration timescale (x-axis) and time (y-axis). The final resonant configuration is determined by the migration speed. There is a sharp transition in the parameter space, allowing us to constrain the migration speed. All simulations that do form a 3:2 mean motion resonance agree very well with observed radial velocity curves.

Dynamics and Eccentricity Formation of Planets in OGLE-06-109L System

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Department of Astronomy, Nanjing University, Nanjing 210093, China

Astrophysical Journal, in press (arXiv0910.3839)

Recent observation of microlensing technique reveals two giant planets at 2.3 AU and 4.6 AU around the star OGLE-06-109L. The eccentricity of the outer planet (e_c) is estimated to be $0.11^{+0.17}_{-0.04}$, comparable to that of Saturn (0.01-0.09). The similarities between the OGLE-06-109L system and the solar system indicate that they may have passed through similar histories during their formation stage. In this paper we investigate the dynamics and formation of the orbital architecture in the OGLE-06-109L system. For the present two planets with their nominal locations, the secular motions are stable as long as their eccentricities ($e_b,\ e_c$) fulfill $e_b^2 + e_c^2 \leq 0.3^2$. Earth-size bodies might be formed and are stable in the habitable zone (0.25AU-0.36AU) of the system. Three possible scenarios may be accounted for formation of e_b and e_c: (i) convergent migration of two planets and the 3:1 MMR trapping; (ii) planetary scattering; (iii) divergent migration and the 3:1 MMR crossing. As we showed that the probability for the two giant planets in 3:1 MMR is low ($\sim 3\%$), scenario (i) is less likely. According to models (ii) and (iii), the final eccentricity of inner planet (e_b) may oscillate between [0-0.06], comparable to that of Jupiter (0.03-0.06). An inspection of e_b, e_c's secular motion may be helpful to understand which model is really responsible for the eccentricity formation.

Download/Website: `http://arxiv.org/abs/0910.3839`

Contact: `zhoujl@nju.edu.cn`

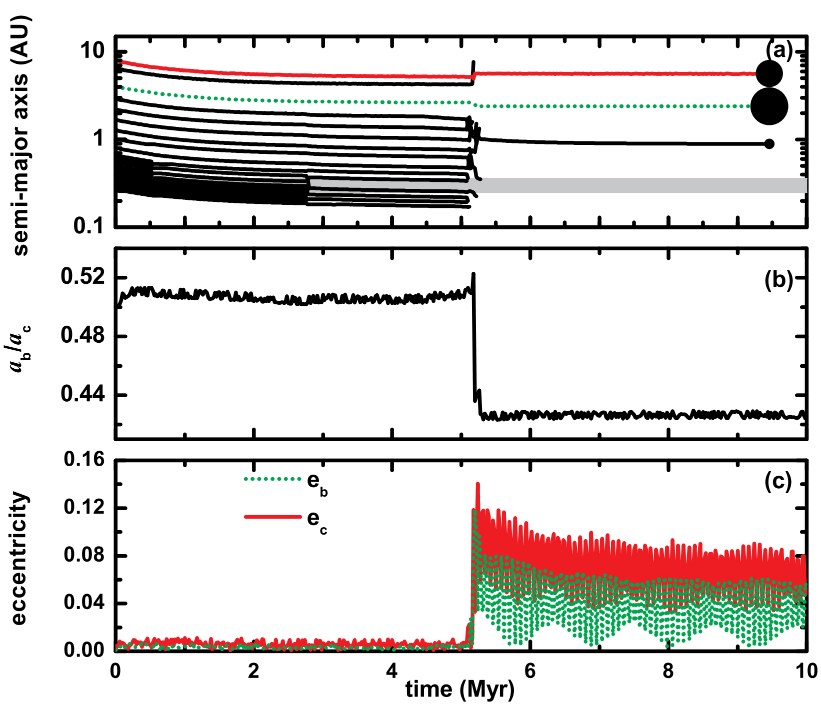

Figure 4: (Wang et al.) Evolution of orbits in model 2 (R2 in Table 2)(planetary scattering model). The two giant planets ($m_b,\ m_c$) are put initially at near-circular orbits with $a_b = 4$ AU and $a_c = 8$ AU. The 18 embryos are put initially in the inner region of the system. An additional embryo is put at 3.5 Hill radii inside the orbit of m_c. Panel (a): Evolution of semi-major axes of the 2 planets and 19 embryos. The grey band shows the extension of the habitable zone. The green dash lines represent the evolution of planet b and the red solid lines show the result of planet c as the same meaning in panel (c). Panel (b): Evolution of semi-major axis ratio of two giant plants. Panel (c): Eccentricity evolution of the two giant planets.

Collisional evolution of eccentric planetesimal swarms

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MNRAS, in press (astro-ph/0910.4725)

Models for the steady state collisional evolution of low eccentricity planetesimal belts identify debris disks with hot dust at 1AU, like η Corvi and HD69830, as anomalous since collisional processing should have removed most of the planetesimal mass over their > 1 Gyr lifetimes. This paper looks at the effect of large planetesimal eccentricities ($e \gg 0.3$) on their collisional lifetime and the amount of mass that can remain at late times $M_{\rm late}$. Assuming an axisymmetric planetesimal disk with common pericentre distances and eccentricities e, we find that $M_{\rm late} \propto e^{-5/3}(1+e)^{4/3}(1-e)^{-3}$. For a scattered disk-like population (i.e., with common pericentre distances but range of eccentricities), in the absence of dynamical evolution, the mass evolution at late times would be as if only planetesimals with the largest eccentricity were present in the disk. Despite the increased remaining mass, higher eccentricities do not increase the amount of hot emission from the collisional cascade until $e > 0.99$, partly because most collisions occur near pericentre thus increasing the dust blow-out diameter. However, at high eccentricities ($e > 0.97$) the blow-out population extending outwards from pericentre may be detectable above the collisional cascade; higher eccentricities also increase the probability of witnessing a recent collision. All of the imaging and spectroscopic constraints for η Corvi can be explained with a single planetesimal population with pericentre at 0.75AU, apocentre at 150AU, and mass $5M_\oplus$; however, the origin of such a high eccentricity population remains challenging. The mid-infrared excess to HD69830 can be explained by the ongoing destruction of a debris belt produced in a recent collision in an eccentric planetesimal belt, but the lack of far-infrared emission would require small bound grains to be absent from the parent planetesimal belt, possibly due to sublimation. The model presented here is applicable wherever non-negligible planetesimal eccentricities are implicated and can be readily incorporated into N-body simulations.

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3 Other abstracts

Mean-Motion Resonances of High Order in Extrasolar Planetary Systems

Hanno Rein, John C. B. Papaloizou
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European Astronomical Society Publication Series, Torun Conference Proceedings, arXiv:0910.5082

Many multi-planet systems have been discovered in recent years. Some of them are in mean-motion resonances (MMR). Planet formation theory was successful in explaining the formation of 2:1, 3:1 and other low resonances as a result of convergent migration. However, higher order resonances require high initial orbital eccentricities in order to be formed by this process and these are in general unexpected in a dissipative disk. We present a way of generating large initial eccentricities using additional planets. This procedure allows us to form high order MMRs and predict new planets using a genetic N-body code.

Download/Website: `http://arxiv.org/abs/0910.4546`

Contact: `hr260@cam.ac.uk`

4 Conference announcements

The detection of extra-terrestrial life and the consequences for science and society

Dr Martin Dominik[1] *and Professor John Zarnecki*[2]
[1] St Andrews University
[2] The Open University

The Royal Society, London, 25 - 26 January 2010

Astronomers are now able to detect planets orbiting stars other than the Sun where life may exist, and future generations could see the signatures of extra-terrestrial life being detected. Should it turn out that we are not alone in the Universe, it will fundamentally affect how humanity understands itself - and we need to be prepared for the consequences.

Chairs: Lord Martin Rees PRS, Dame Jocelyn Bell Burnell FRS, Dr Catherine Cesarsky ForMemRS.

Speakers: Professor Baruch Blumberg (TBC), Professor Charles Cockell, Dr Pascale Ehrenfreund, Professor Simon Conway Morris FRS, Professor Michel Mayor, Dr Malcolm Fridlund, Dr Christopher McKay, Professor Colin Pillinger CBE FRS, Professor Christian de Duve ForMemRS, Professor Paul Davies, Dr Frank Drake, Professor Ted Peters, Professor Albert A Harrison, Dr Kathryn Denning, Professor Iván Almár.

Registration: This meeting is free to attend, but pre-registration (online) is essential. The online registration form and programme information can be found at: royalsociety.org/events.

The Royal Society, 69 Carlton House Terrace, London SW1Y 5AG. Tel +44 (0)20 7451 2581, Fax +44 (0)20 7930 2170.

Download/Website: `http://royalsociety.org`

Contact: `discussion.meetings@royalsociety.org`

5 Jobs and positions

Postdoctoral Fellow(s) - Exo-Planets, Brown Dwarfs and Young Stars

Prof. Ray Jayawardhana

Toronto, Canada, Start date: Summer or Fall 2010

Applications are invited for one or more postdoctoral research position(s) at the University of Toronto to start in 2010. The successful candidate(s) will work with Prof. Ray Jayawardhana and his collaborators on observational and analytical studies of extra-solar planets, brown dwarfs and young stars, and will be encouraged to pursue independent research on related topics. On-going projects include high-contrast imaging searches for sub-stellar companions around young stars, photometric and spectroscopic studies of extra-solar planets, investigations of brown dwarf variability and multiplicity, and the SONYC (Substellar Objects in Nearby Young Clusters) ultra-deep survey, using data from VLT, Subaru, Gemini, Keck, Spitzer, CFHT, Las Campanas and other major observatories. The position is for two years, with extension to a third year possible, and comes with a competitive salary and funds for research expenses. Applicants should send a curriculum vitae, a description of research interests and plans and a list of publications, and should arrange for three letters of recommendation to be sent directly to the e-mail address below. Applications received before 2009 December 1 will receive full consideration. Early expressions of interest and inquiries are welcome.

Download/Website: `http://www.astro.utoronto.ca`

Contact: `rayjay@astro.utoronto.ca`

PhD Position: Transiting Extrasolar Planets

I. Snellen
Leiden Observatory, Leiden University, Postbus 9513, 2300 RA, Leiden, The Netherlands

Leiden, deadline 15 December 2009

A 4-year PhD position is available at the Leiden Observatory in the Netherlands, in the field of transiting extrasolar planets. As a member of our very active exoplanet group (http://www.strw.leidenuniv.nl/∼snellen), the PhD student will work on the forefront of extrasolar planet research, focusing on the detection and investigation of transiting planets, in particular a) studying their atmospheres and direct thermal emission using new innovative methods, and b) finding new transiting planets in current and forthcoming transit surveys. For this project we seek excellent and enthusiastic candidates, who are highly interested in observational astronomy.

The astronomy department at Leiden is internationally oriented and hosts about 40 graduate students of several nationalities. During their thesis, Leiden PhD students are paid as civil servants, which means that they earn competitive salaries (the current gross salary, including allowances, increases from about EUR 28,000 in year 1 to about EUR 36,000 in year 4) and are eligible for both social security and retirement benefits. PhD positions are funded for four years.

For further information, please contact Ignas Snellen (snellen@strw.leidenuniv.nl). Applications are accepted only through the Leiden Observatory online application site. The deadline for applications and letters of recommendation is December 15, 2009.

Download/Website: `http://www.strw.leidenuniv.nl/phd/apply.php`

Contact: `snellen@strw.leidenuniv.nl`

Postdoctoral Research Position in Extrasolar Planets

Dr. Alex Wolszczan

Penn State University, Review of applications: December 2009

The Department of Astronomy and Astrophysics, Center for Exoplanets and Habitable Worlds (CEHW), at the Pennsylvania State University invites applications for a postdoctoral research position in the areas of formation, detection, and characterization of extrasolar planets. Successful applicants are expected to work with the Center faculty on projects in these areas. The position is for two years with a possibility of extension for one more year. Applicants should have a Ph.D. in Astronomy or Physics and a promising research record, which includes a demonstrated experience in one or more fields as specified above. An interest and skills in hardware development are also desirable but not required.

The Center for Exoplanets and Habitable Worlds, hosted by the Department, provides resources to support a variety of extrasolar planet related activities. It has several internal and external affiliates, whose research interests include extrasolar planets. Among other assets, the Department is a major partner (25% of the observing time) in the

Hobby-Eberly Telescope at the McDonald Observatory. Current information on research and other activities can be found at http://exoplanets.astro.psu.edu and http://www.astro.psu.edu.

Applications should include a cover letter, a CV, statement of research interests, list of publications, and names of three references, mailed to: Ms. Erin Eckley, (eckley@astro.psu.edu) 525 Davey Lab, Pennsylvania State University, University Park, PA 16803, Fax: 814-863-2842, phone: 814-865-0418.

Review of applications will begin in December, and the search will continue until position is filled.

Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

Download/Website: `http://exoplanets.astro.psu.edu`

Contact: `eckley@astro.psu.edu`

6 As seen on astro-ph

The following list contains all the entries relating to exoplanets that we spotted on astro-ph during October 2009. 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/0910.0010: **Refining Exoplanet Ephemerides and Transit Observing Strategies** by *Stephen R. Kane, Suvrath Mahadevan, Kaspar von Braun et al.*

astro-ph/0910.0246: **The Collisional Divot in the Kuiper belt Size Distribution** by *Wesley C. Fraser*

astro-ph/0910.0248: **Giant Planet Atmospheres and Spectra** by *Adam Burrows*

astro-ph/0910.0442: **Laboratory Studies for Planetary Sciences** by *Murthy Gudipati, Michael A'Hearn, Nancy Brickhouse et al.*

astro-ph/0910.0468: **Forming Jupiter, Saturn, Uranus and Neptune in Few Million Years by Core Accretion** by *Omar G. Benvenuto, Andrea Fortier, Adrian Brunini*

astro-ph/0910.0481: **Periodic variable stars in CoRoT field LRa02 observed with BEST II** by *P. Kabath, A. Erikson, H. Rauer et al.*

astro-ph/0910.0484: **The search for exomoons and the characterization of exoplanet atmospheres** by *Giammarco Campanella*

astro-ph/0910.0726: **The far future of exoplanet direct characterization** by *Jean Schneider, Alain Leger, Malcolm Fridlund, Glenn J. White et al.*

astro-ph/0910.0811: **Exoplanet Chemistry** by *Katharina Lodders*

astro-ph/0910.0855: **Characterization of CoRoT Target Fields with the Berlin Exoplanet Search Telescope: Identification of Periodic Variable Stars in the LRa1 Field** by *P. Kabath, P. Eigmueller, A. Erikson et al.*

astro-ph/0910.0915: **Pre-Discovery 2007 Image of the HR 8799 Planetary System** by *Stanimir Metchev, Christian Marois, B. Zuckerman*

astro-ph/0910.1004: **Long range outward migration of giant planets, with application to Fomalhaut b** by *A. Crida, F. Masset, A. Morbidelli*

astro-ph/0910.1257: **Ks-band detection of thermal emission and color constraints to CoRoT-1b: A low-albedo planet with inefficient atmospheric energy redistribution and a temperature inversion** by *Justin C. Rogers, Daniel Apai, Mercedes Lopez-Morales et al.*

astro-ph/0910.1346: **Radiation-Hydrodynamics of Hot Jupiter Atmospheres** by *Kristen Menou, Emily Rauscher*

astro-ph/0910.1347: **A Temperature and Abundance Retrieval Method for Exoplanet Atmospheres** by *N. Madhusudhan, Sara Seager*
astro-ph/0910.1346: **Radiation-Hydrodynamics of Hot Jupiter Atmospheres** by *Kristen Menou, Emily Rauscher*
astro-ph/0910.1832: **A Second Method to Photometrically Align Multi-Site Microlensing Light Curves: Source Color in Planetary Event MOA-2007-BLG-192** by *Andrew Gould, Subo Dong, David P. Bennett et al.*
astro-ph/0910.2256: **Cloud Formation and Dynamics in Cool Dwarf and Hot Exoplanetary Atmospheres** by *Adam J. Burgasser*
astro-ph/0910.2365: **Analytic Description of the Rossiter-McLaughlin Effect for Transiting Exoplanets: Cross-Correlation Method and Comparison with Simulated Data** by *Laurent Ibgui, Adam Burrows, David S. Spiegel*
astro-ph/0910.2778: **Determining planetary positions in the sky for 50 years to an accuracy of 1 degree with a calculator** by *Tanmay Singal, Ashok K. Singal*
astro-ph/0910.2887: **Transit detections of extrasolar planets around main-sequence stars - I. A sky map for Hot Jupiters** by *Ren Heller, Dimitris Mislis, John Antoniadis*
astro-ph/0910.3332: **Detection and Characterization of Planets in Binary and Multiple Systems** by *A. Eggenberger*
astro-ph/0910.3513: **HD 174884: a strongly eccentric, short-period early-type binary system discovered by CoRoT** by *C. Maceroni, J. Montalban, E. Michel et al.*
astro-ph/0910.3682: **Mechanisms of jet formation on the giant planets** by *Junjun Liu, Tapio Schneider*
astro-ph/0910.3717: **Detecting the Wind-Driven Shapes of Extrasolar Giant Planets from Transit Photometry** by *Jason W. Barnes, Curtis S. Cooper, Adam P. Showman et al.*
astro-ph/0910.3938: **A Blind Search for Magnetospheric Emissions from Planetary Companions to Nearby Solar-type Stars** by *T. Joseph W. Lazio, S. Carmichael, J. Clark et al.*
astro-ph/0910.3839: **Dynamics and Eccentricity Formation of Planets in OGLE-06-109L System** by *Su Wang, Gang Zhao, Ji-Lin Zhou*
astro-ph/0910.3992: **Diffractive Microlensing I: Flickering Planetesimals at the Edge of the Solar System** by *Jeeremy Heyl*
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