ExoPlanet News
An Electronic Newsletter

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Contents

1 Editorial

Welcome to the forty-eighth edition of ExoPlanet News. This month's edition may not be quite so lengthy as the last, but we think it's full of plenty of interesting new results to keep readers busy in the coming weeks.

Welcome also to all the new subscribers to the Newsletter added in the last month. If you don't see your own research included here, please send us an abstract for the next edition.

The next issue will be due at the beginning of May. Please send anything relevant to exoplanet@open.ac.uk, and it will appear then. 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.

Best wishes
Andrew Norton & Glenn White
The Open University

2 Abstracts of refereed papers

Rossiter-McLaughlin effect measurements for WASP-16, WASP-25 and WASP-31

D. J. A. Brown[1], A. Collier Cameron[1], D. R. Anderson[2], B. Enoch[1], C. Hellier[2], P. F. L. Maxted[2], G. R. M. Miller[1],D. Pollacco[3], D. Queloz[4], E. Simpson[3], B. Smalley[2], A. H. M. J. Triaud[4], I. Boisse[5], F. Bouchy[5,6],M Gillon[7], G. Hébrard[5,6]

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Monthly Notices of the Royal Astronomical Society, in press (arXiv:1203.4971v1)

We present new measurements of the Rossiter-McLaughlin (RM) effect for three WASP planetary systems, WASP-16, WASP-25 and WASP-31, from a combined analysis of their complete sets of photometric and spectroscopic data. We find a low amplitude RM effect for WASP-16 (Teff $= 5700 \pm 150$ K), suggesting that the star is a slow rotator and thus of an advanced age, and obtain a projected alignment angle of $\lambda = -4.2^{\circ}{}^{+11.0}_{-13.9}$. For WASP-25 ($T$eff $= 5750 \pm 100$ K) we detect a projected spin-orbit angle of $\lambda = 14.6^{\circ} \pm 6.7$. WASP-31 ($T$eff $= 6300 \pm 100$ K) is found to be well-aligned, with a projected spin-orbit angle of $\lambda = 2.8^{\circ} \pm 3.1$. A circular orbit is consistent with the data for all three systems, in agreement with their respective discovery papers. We consider the results for these systems in the context of the ensemble of RM measurements made to date. We find that whilst WASP-16 fits the hypothesis of Winn et al. (2010) that 'cool' stars (Teff < 6250 K) are preferentially aligned, WASP-31 has little impact on the proposed trend. We bring the total distribution of the true spin-orbit alignment angle, ψ, up to date, noting that recent results have improved the agreement with the theory of Fabrycky & Tremaine (2007) at mid-range angles. We also suggest a new test for judging misalignment using the Bayesian Information Criterion, according to which WASP-25 b's orbit should be considered to be aligned.

Download/Website: `http://arxiv.org/abs/1203.4971`

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Architecture of *Kepler*'s Multi-transiting Systems: II. New investigations with twice as many candidates

Daniel C. Fabrycky[1,2]*, Jack J. Lissauer*[6]*, Darin Ragozzine*[7]*, Jason F. Rowe*[5,6]*, Eric Agol*[8]*, Thomas Barclay*[6,10]*, Natalie Batalha*[6,9]*, William Borucki*[6]*, David R. Ciardi*[11]*, Eric B. Ford*[3]*, John C. Geary*[7]*, Matthew J. Holman* [7]*, Jon M. Jenkins* [6]*, Jie Li*[5,6]*, Robert C. Morehead*[3]*, Robert L. Morris*[5,6]*, Avi Shporer*[12,13]*, Jeffrey C. Smith*[5,6]*, Jason H. Steffen*[4]*, Martin Still*[10]

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ApJ, submitted (arxiv:1202.6328)

Having discovered 885 planet candidates in 361 multiple-planet systems, *Kepler* has made transits a powerful method for studying the statistics of planetary systems. The orbits of only two pairs of planets in these candidate systems are apparently unstable. This indicates that a high percentage of the candidate systems are truly planets orbiting the same star, motivating physical investigations of the population. Pairs of planets in this sample are typically not in orbital resonances. However, pairs with orbital period ratios within a few percent of a first-order resonance (e.g. 2:1, 3:2) prefer orbital spacings just wide of the resonance and avoid spacings just narrow of the resonance. Finally, we investigate mutual inclinations based on transit duration ratios. We infer that the inner planets of pairs tend to have a smaller impact parameter than their outer companions, suggesting these planetary systems are typically coplanar to within a few degrees.

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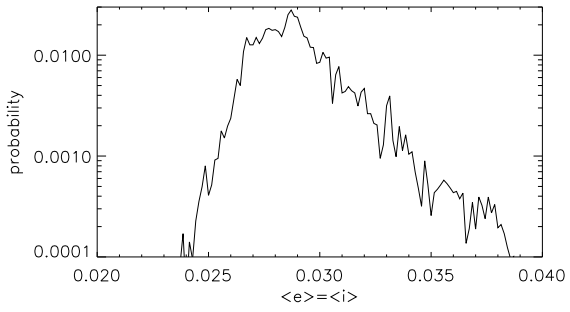

Figure 1: (Fabrycky et al.) Kolmogorov-Smirnov p-value for inclined and eccentric systems. A region of acceptable probability lies in the range $\sim 1.0^\circ - 2.3^\circ$, for the Rayleigh parameter of the mutual inclination, meaning **planetary systems are quite flat**. The preferred value of eccentricity is near equipartition with the inclination, however the acceptable region (p-value=0.1%, equivalent to $3-\sigma$) spans a very wide range, from perfectly circular to 7 times equipartition. Thus we are not very sensitive to eccentricities, but including them in the model does not compromise the conclusion that the mutual inclinations are small.

Magnetic field, differential rotation and activity of the hot-Jupiter hosting star HD 179949

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Monthly Notices of the Royal Astronomical Society, in press (arXiv 1202.4472)

HD 179949 is an F8V star, orbited by a giant planet at $\sim 8\ R_\star$ every 3.092514 days. The system was reported to undergo episodes of stellar activity enhancement modulated by the orbital period, interpreted as caused by Star-Planet Interactions (SPIs). One possible cause of SPIs is the large-scale magnetic field of the host star in which the close-in giant planet orbits.
In this paper we present spectropolarimetric observations of HD 179949 during two observing campaigns (2009 September and 2007 June). We detect a weak large-scale magnetic field of a few Gauss at the surface of the star. The field configuration is mainly poloidal at both observing epochs. The star is found to rotate differentially, with a surface rotation shear of $d\Omega = 0.216 \pm 0.061$ rad d^{-1}, corresponding to equatorial and polar rotation periods of 7.62 ± 0.07 and 10.3 ± 0.8 d respectively. The coronal field estimated by extrapolating the surface maps resembles a dipole tilted at $\sim 70^\circ$. We also find that the chromospheric activity of HD 179949 is mainly modulated by the rotation of the star, with two clear maxima per rotation period as expected from a highly tilted magnetosphere. In September 2009, we find that the activity of HD 179949 shows hints of low amplitude fluctuations with a period close to the beat period of the system.

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The EVIL-MC Model for Ellipsoidal Variations of Planet-Hosting Stars and Applications to the HAT-P-7 System

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Astrophysical Journal, in press (arXiv:1203.6070)

We present a new model for **E**llipsoidal **V**ariations **I**nduced by a **L**ow-**M**ass **C**ompanion, the EVIL-MC model. We employ several approximations appropriate for planetary systems to substantially increase the computational efficiency of our model relative to more general ellipsoidal variation models and improve upon the accuracy of simpler models. This new approach gives us a unique ability to rapidly and accurately determine planetary system parameters. We use the EVIL-MC model to analyze Kepler Quarter 0-2 (Q0-2) observations of the HAT-P-7 system, an F-type star orbited by a $\sim$ Jupiter-mass companion. Our analysis corroborates previous estimates of the planet-star mass ratio $q = 1.10 \pm 0.06 \times 10^{-3}$, and we have revised the planet's dayside brightness temperature to 2680^{+10}_{-20} K. We also find a large difference between the day- and nightside planetary flux, with little nightside emission. Preliminary dynamical+radiative modeling of the atmosphere indicates this result is qualitatively consistent with

high altitude absorption of stellar heating. Similar analyses of Kepler and CoRoT photometry of other planets using EVIL-MC will play a key role in providing constraints on the properties of many extrasolar systems, especially given the limited resources for follow-up and characterization of these systems. However, as we highlight, there are important degeneracies between the contributions from ellipsoidal variations and planetary emission and reflection. Consequently, for many of the hottest and brightest Kepler and CoRoT planets, accurate estimates of the planetary emission and reflection, diagnostic of atmospheric heat budgets, will require accurate modeling of the photometric contribution from the stellar ellipsoidal variation.

Download/Website: `http://arxiv.org/abs/1203.6070`

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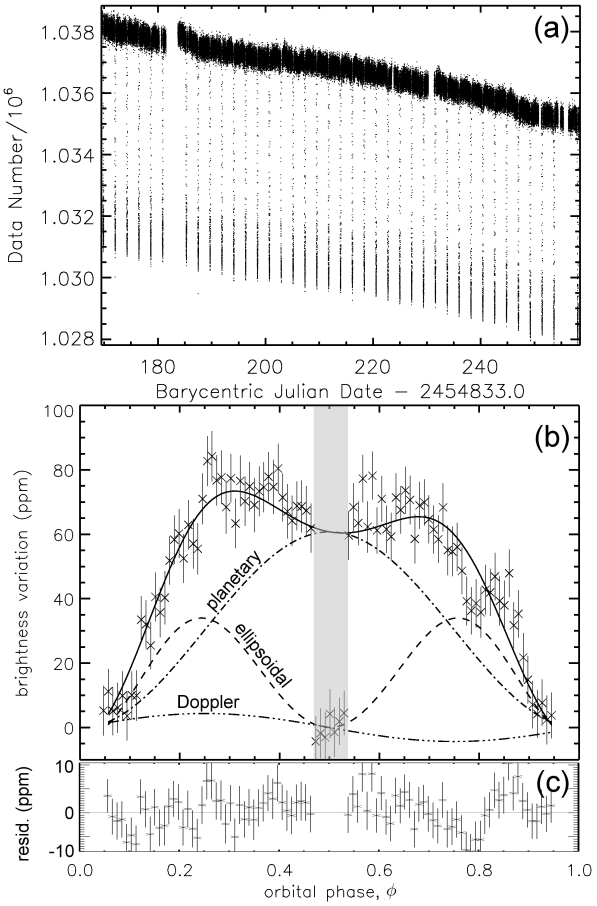

Figure 2: (Jackson et al.) Kepler observations of the HAT-P-7 system, along the fit produced by our EVIL-MC model. (a) Kepler observations of HAT-P-7 system from Kepler Quarter 2 with outliers filtered out (see text). (b) Observations from Quarters 0-2 phased together and binned to 30-minute bins (Xs). Our best fit model curve (solid line) is also shown, the best-fit ellipsoidal variation is shown as a dashed curve, the planetary phase curve as a dash-dot line, and the Doppler flux variations (with $K_Z = 300$ m/s) as the dash-dot-dot-dot line. The planet's eclipse is highlighted in grey and is not fit by our model. (c) Residuals between the best-fit model and the data are nearly normally distributed about 0.

A frozen super-Earth orbiting a star at the bottom of the Main Sequence

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Astronomy & Astrophysics, 540, A78 (2012)

Microlensing is a unique method to probe low mass exoplanets beyond the snow line of their parent stars. However, it often suffers from lack of knowledge of the properties of the lens star. In particular, the discovery light curve of the super-Earth MOA-2007-BLG-192Lb suffered from degeneracies that limit what could be inferred about its physical properties. High resolution adaptive optics images obtained with NACO adaptive optics system on the VLT allow us to solve this problem by resolving the microlensing target from all unrelated background stars, yielding unique determination of magnified source and lens fluxes. We find that MOA-2007-BLG-192Lb's host star is most likely a very low mass late type M-dwarf ($0.084^{+0.015}_{-0.012}\ M_{\odot}$) at a distance of 660^{+100}_{-70} pc orbited by a $3.2^{+5.2}_{-1.8}\ M_{\oplus}$ super-Earth at $0.66^{+0.51}_{-0.22}$ AU. The discovery implies that planet formation occurs as well at the bottom on the Main Sequence.

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On the origin of planets at very wide orbits from the re-capture of free floating planets

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Astrophysical Journal, in press (http://arxiv.org/abs/1202.2362)

In recent years several planets have been discovered at wide orbits (> 100 AU) around their host stars. Theoretical studies encounter difficulties in explaining their formation and origin. Here we propose a novel scenario for the production of planetary systems at such orbits, through the dynamical recapture of free floating planets (FFPs) in dispersing stellar clusters and stellar associations. This process is a natural extension of the recently suggested scenario for the formation of wide stellar binaries. We use N-body simulations of dispersing clusters with $10-1000$ stars and comparable numbers of FFPs to study this process. We find that planets are captured into wide orbits in the typical range $\sim$ few $\times\ 100 - 10^6$ AU, and have a wide range of eccentricities (thermal distribution). Typically, $3 - 6 \times (f_{\rm FFP}/1)$ % of all stars capture a planetary companion with such properties (where $f_{\rm FFP}$ is the number of

FFP per star in the birth clusters). The planetary capture efficiency is comparable to that of capture-formed stellar-binaries, and shows a similar dependence on the cluster size and structure. It is almost independent of the specific planetary mass; planets as well as sub-stellar companions of any mass can be captured. The capture efficiency decreases with increasing cluster size, and for a given cluster size the it increases with the host/primary mass. We also find that more than one planet can be captured around the same host through independent consecutive captures; similarly planets can be captured into binary systems, both in circumstellar and circumbinary orbits. We also expect planets to be captured into pre-existing planetary (and protoplanetary systems) as well as into orbits around black holes and massive white dwarfs, if these formed early enough before the cluster dispersal. In particular, stellar black holes have a high capture efficiency ($> 50\%$ and $5-10\times(f_{\rm FFP}/1)$ % for capture of stars and planetary companions, respectively) due to their large mass. Finally, although rare, two FFPs or brown dwarfs can become bound and form a FFP-binary system with no stellar host.

Download/Website: `http://arxiv.org/abs/1202.2362`

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Direct imaging constraints on planet populations detected by microlensing

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Astronomy & AstrophysicsResearch Note, in press (http://xxx.lanl.gov/abs/1203.3647)

Results from gravitational microlensing suggested the existence of a large population of free-floating planetary mass objects. The main conclusion from this work was partly based on constraints from a direct imaging survey. This survey determined upper limits for the frequency of stars that harbor giant exoplanets at large orbital separations.We want to verify to what extent upper limits from direct imaging do indeed constrain the microlensing results.We examine the current derivation of the upper limits used in the microlensing study and re-analyze the data from the corresponding imaging survey. We focus on the mass and semi-major axis ranges that are most relevant in context of the microlensing results. We also consider new results from a recent M-dwarf imaging survey as these objects are typically the host stars for planets detected by microlensing.We find that the upper limits currently applied in context of the microlensing results are probably underestimated. This means that a larger fraction of stars than assumed may harbor gas giant planets at larger orbital separations. Also, the way the upper limit is currently used to estimate the fraction of free-floating objects is not strictly correct. If the planetary surface density of giant planets around M-dwarfs is described as $df_{\rm Planet} \propto a^{\beta} da$, we find that $\beta \leq 0.5-0.6$ is consistent with results from different observational studies probing semi-major axes between $\sim$0.03 – 30 AU.Having a higher upper limit on the fraction of stars that may have gas giant planets at orbital separations probed by the microlensing data implies that more of the planets detected in the microlensing study are potentially bound to stars rather than free-floating. The current observational data are consistent with a rising planetary surface density for giant exoplanets around M-dwarfs out to $\sim$ 30 AU. Future direct imaging surveys will show out to what semi-major axis the above mentioned range of β is valid and what fraction of the planetary mass objects detected by microlensing are indeed bound.

Download/Website: `http://xxx.lanl.gov/abs/1203.3647`

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Transit-timing measurements with the model-independent barycenter method: Application to the LHS 6343 system

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Astronomy & Astrophysics, accepted for publication(arXiv:1109.3722)

We present a model-independent technique for calculating the time of mid-transits. This technique, named "barycenter method", uses the light-curve's symmetry to determine the transit timing by calculating the transit light-curve barycenter. Unlike the other methods of calculating mid-transit timing, this technique does not depend on the parameters of the system and central star. We demonstrate the capabilities of the barycenter method by applying this technique to some known transiting systems including several *Kepler* confirmed planets. Results indicate that for complete and symmetric transit lightcurves, the barycenter method achieves the same precision as other techniques, but with fewer assumptions and much faster. Among the transiting systems studied with the barycenter method, we focus in particular on LHS 6343C, a brown dwarf that transits a member of an M+M binary system, LHS 6343AB. We present the results of our analysis, which can be used to set an upper limit on the period and mass of a possible second small perturber.

Download/Website: `http://arxiv.org/abs/1109.3722`

Contact: `moshagh@astro.up.pt`

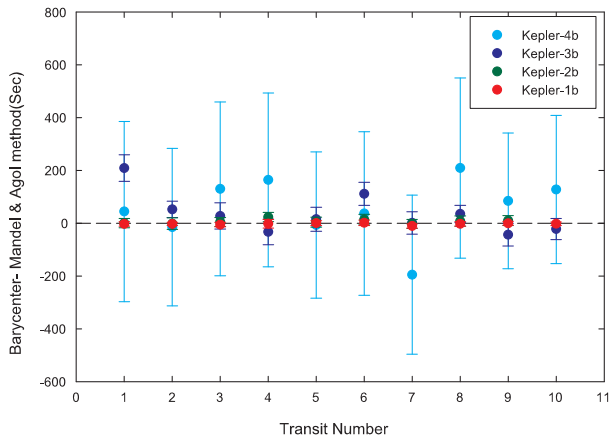

Figure 3: (Oshagh et al.) Differences between the values of mid-transit timing obtained by the barycenter method and the Mandel & Agol 2002 method for Kepler-1b to Kepler-4b (Ford et al. 2011).

3 Jobs and Positions

Postdoctoral research associate, Development of Multi-site All-Sky CAmeRA (MASCARA) to find brightest transiting exoplanets

Ignas Snellen
Leiden Observatory, Leiden University, Postbus 9513,2300 RA, Leiden, The Netherlands

Leiden Observatory, deadline May 15

Leiden Observatory invites applications for a postdoctoral research position to work on the development and deployment of the Multi-site All-sky CAmeRA (MASCARA). MASCARA is a fully funded instrument concept consisting of several stations across the globe, with each station containing a battery of cameras to monitor the near-entire sky at each location.Once all stations have been installed, MASCARA will be able to provide a nearly 24-hr coverage of the complete sky, down to magnitude 8, at sub-minute cadence. Its main purpose is to find the brightest transiting exoplanets, expected in the V=4-8 magnitude range, but the concept of MASCARA will also allow for a wealth of secondary science cases. MASCARA is expected to deliver the brightest targets for future exo-planet characterization missions like ECHO.

The successful applicant is expected to lead the design and construction of the first prototype station, its deployment at the observatory site, and of consecutive stations. Furthermore, he/she will be expected to support the development of the photometric pipeline and partake in the early science.

Leiden Observatory is the oldest university astronomy department in the world, and the largest astronomy department in the Netherlands. Leiden Observatory hosts a large and lively Exo-planet community, actively involved in many areas of exo-planet detection and characterization. Leiden is a charming university town with international flair.

The appointment will be for two years initially, but can be extended, based on satisfactory performance, for a total of up to three years. The position comes with full benefits. The starting date is negotiable, but we are hoping to fill this vacancy in the near future.

Researchers with experience in the development and use of modern instrumentation are specifically invited to apply. Applications should contain the applicant's CV, a short introductory letter, and a detailed description of the applicant's academic achievements and prior research experience. Applicants should also arrange for 3 letters of recommendation to be sent directly to the (email) address above. Email applications are preferred.

The application review process will begin May 15th 2012 and will continue until the position has been filled.

Download/Website: `http://mascara.strw.leidenuniv.nl &`
`http://www.strw.leidenuniv.nl/~snellen`

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4 Conference announcements

2012 Sagan Summer Workshop: Working with Exoplanet Light Curves

C. Brinkworth
NASA Exoplanet Science Institute, California Institute of Technology, Pasadena, CA, USA

Pasadena, CA, July 23-27, 2012

Registration is now open for the 2012 Sagan Exoplanet Summer Workshop on "Working with Exoplanet Light Curves". The workshop will take place on the Caltech campus July 23 - 27, 2012. The workshop is intended for graduate students and postdocs interested in learning more about working with light curves, however, all interested parties are welcome to attend.

This workshop will explore the use of exoplanet light curves to study planetary system architectures and atmospheres and to discover exomoons and ring systems. Attendees will participate in hands-on exercises to gain experience in working with Kepler and other transit light curves, and will also have the opportunity to present their own work through short presentations (research POPs) and electronic posters. Note that there are limited slots for presentation of research POPs in the agenda and these will be filled on a first-come, first-served basis once the submission site opens on April 2. The preliminary agenda can be found on the workshop website and the list of topics to be covered includes:

- The Promise of Transits
- Basic Light Curve Models
- Validation and Confirmation of Transit Signals
- Characterization of Exoplanet Atmospheres
- Planetary Architecture
- Available Analysis Packages
- Working with Kepler Data
- Introduction to Transit Spectroscopy

Important Dates

- April 2: POP/Electronic-Poster Page On-line
- June 15: Early on-line registration ends
- June 21: Hotel Registration deadline to be eligible for group rate
- June 29: POP/Poster Submission deadline
- July 13: On-line registration closed
- July 13: Talk Submission by workshop speakers deadline and final agenda posted
- July 22: Sagan Exoplanet Summer Workshop Opening Reception

- July 23-27: 2012 Sagan Exoplanet Summer Workshop

Download/Website: `http://nexsci.caltech.edu/workshop/2012`

Contact: `sagan_workshop@ipac.caltech.edu`

Congrès Amateurs Professionnels en Astrophysique Stellaire (CAPAS)

Laurent Corp
Pro-Am Conference on Stellar Astrophysics

Onet le Château, Rodez, France, 28 September - 1st October 2012

List of talks:

Session: Eclipsing and spectroscopic binaries
Amateur spectrometric study of Albireo David Antao
The state eclipsing binary observations by amateurs Laurent Corp
The rare eclipse stars ε Aur and ζ Aur: a report on 2011 eclipses Jeff Hopkins
The use of DSLR photometry in measuring the magnitude of variable stars Des Louhgney
Classification of eclipsing binaries: extreme and unusual systems Oleg Malkov
Role of binary and variable stars in cosmic distance scale David Valls-Gabaud
A Study of 200 Eclipsing Stars recently discovered in Cynus and Auriga Stan Waterman
Session: Astrometric double and multiple stars
Dembowski or the use of the 26-inch telescope in Johannesburg Bob Argyle
Research for B-V delta m measurement of doubles stars with colour CCD Pierre Durand
William Herschel pairs catalogue for amateurs Pierre Durand
Binary star database: state of affairs and prospects Oleg Malkov
Interférométrie des tavelures sur étoiles doubles avec des moyens amateurs Bernard Trégon
Session: Pulsating stars
Photometric study of pulsating star BL Cam Stéphane Fauvaud
The GEOS RR Lyr Survey Jean-Francois Le Borgne
Pulsating stars in the space missions context Philippe Mathias
Pulsating Stars in the AAVSO Observing Program Mike Simonsen
Session: Exoplanets, beginning and end of star life ...
Vie et mort des étoiles James Lequeux
Supernovae, explosive death of the stars Remi Cabanac
Success of a Pro-Am collaboration: Be stars Francois Cochard
Searching for Low Amplitude Variable Stars and Transiting Exoplanets Stan Waterman

Download/Website: `http://rr-lyr.ast.obs-mip.fr/capas2012/index.php`

Contact: `laucorp@wanadoo.fr`

5 Announcements

Large Binocular Telescope Interferometer Exozodi Key Science Team

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NASA solicits proposals to become members of the Large Binocular Telescope Interferometer (LBTI) Exozodi Key Science Science Team (LBTI-ST). The LBTI-ST will work under the leadership of the LBTI Principal Investigator (Dr. Phil Hinz, University of Arizona) in order to most effectively execute the exo-zodi key science program. LBTI-ST members will participate in science deliberations, target selection, LBTI observations, data processing and analysis, follow-up observations, and publication in peer-reviewed journals.

Proposals from participants are due April 27 2012. Results of the selection will be announced in early June 2012.

Download/Website: `http://nexsci.caltech.edu/missions/LBTI/cfp_keysci.shtml`
Contact: `lbti_nexsci@ipac.caltech.edu.`

6 As seen on astro-ph

The following list contains all the entries relating to exoplanets that we spotted on astro-ph during March 2012. If you see any that we missed, please let us know and we'll include them in the next issue.

astro-ph/1203.0005: **Dusty Planetary Systems** by *Amaya Moro-Martin*
astro-ph/1203.0013: **Warm Debris Disks Candidates in Transiting Planets Systems** by *Alvaro Ribas, Bruno Merin, David R. Ardila et al*
astro-ph/1203.0209: **Observing the Earth as an exoplanet with LOUPE, the Lunar Observatory for Unresolved Polarimetry of Earth** by *T. Karalidi, D.M. Stam, F. Snik et al*
astro-ph/1203.0341: **Modeling Multi-Wavelength Stellar Astrometry. III. Determination of the Absolute Masses of Exoplanets and Their Host Stars** by *Jeffrey L. Coughlin, Mercedes Lopez-Morales*
astro-ph/1203.0507: **SPICES: Spectro-Polarimetric Imaging and Characterization of Exoplanetary Systems** by *Anthony Boccaletti, Jean Schneider, Wes Traub et al*
astro-ph/1203.0611: **Accurate parameters of 93 solar-type Kepler targets** by *H. Bruntt, S. Basu, B. Smalley et al*
astro-ph/1203.1182: **An alternative origin for debris rings of planetesimals** by *Sergei Nayakshin, Seung-Hoon Cha*
astro-ph/1203.1184: **Planet-disk interaction and orbital evolution** by *W. Kley, R.P. Nelson*
astro-ph/1203.1382: **Kepler Presearch Data Conditioning I - Architecture and Algorithms for Error Correction in Kepler Light Curves** by *Martin C. Stumpe, Jeffrey C. Smith, Jeffrey E. Van Cleve et al*
astro-ph/1203.1383: **Kepler Presearch Data Conditioning II - A Bayesian Approach to Systematic Error Correction** by *Jeffrey C. Smith, Martin C. Stumpe, Jeffrey E. Van Cleve et al*
astro-ph/1203.1631: **The Exoplanet Eccentricity Distribution from Kepler Planet Candidates** by *Stephen R. Kane, David R. Ciardi, Dawn M. Gelino et al*
astro-ph/1203.1887: **Validation of Kepler Objects of Interest Stellar Parameters And Eccentricity Distribution from Observed Transit Durations** by *Peter Plavchan, Christopher Bilinski, Thayne Currie*
astro-ph/1203.1921: **Theoretical Transit Spectra for GJ 1214b and Other "Super-Earths"** by *Alex R. Howe, Adam S. Burrows*

astro-ph/1203.1922: **On the Stability of Super Earth Atmospheres** by *Kevin Heng, Pushkar Kopparlal*
astro-ph/1203.2534: **Silica-Rich Bright Debris Disk around HD 15407A** by *Hideaki Fujiwara, Takashi Onaka, Takuya Yamashita et al*
astro-ph/1203.2615: **First Light LBT AO Images of HR 8799 bcde at 1.65 and 3.3 Microns: New Discrepancies between Young Planets and Old Brown Dwarfs** by *Andrew J. Skemer, Philip M. Hinz, Simone Esposito et al*
astro-ph/1203.2735: **LBT observations of the HR 8799 planetary system: First detection of HR8799e in H band** by *S. Esposito, D. Mesa, A. Skemer et al*
astro-ph/1203.2826: **Atmospheric characterization of cold exoplanets using a 1.5-m coronagraphic space telescope** by *A.-L. Maire, R. Galicher, A. Boccaletti et al*
astro-ph/1203.2918: **Wind-accretion disks in wide binaries, second generation protoplanetary disks and accretion onto white dwarfs** by *Hagai B. Perets, Scott J. Kenyon*
astro-ph/1203.2919: **Formation of the planet around the millisecond pulsar J1719-1438** by *L. M. van Haaften, G. Nelemans, R. Voss et al*
astro-ph/1203.2955: **Formation of '3D' multiplanet systems by dynamical disruption of multiple-resonance configurations** by *A.-S. Libert, K. Tsiganisl*
astro-ph/1203.2960: **Trapping in three-planet resonances during gas-driven migration** by *A.-S. Libert, K. Tsiganis*
astro-ph/1203.3140: **A new analysis of the GJ581 extrasolar planetary system** by *M. Tadeu dos Santos, G. G. Silva, S. Ferraz-Mello et al*
astro-ph/1203.3294: **Recent developments in planet migration theory** by *Clement Baruteau, Frederic Massetl*
astro-ph/1203.3647: **Direct imaging constraints on planet populations detected by microlensing** by *Sascha P. Quanz, David Lafreniere, Michael R. Meyer et al*
astro-ph/1203.4015: **A Planetary lensing feature in caustic-crossing high-magnification microlensing events** by *Sun-Ju Chung, Kyu-Ha Hwang, Yoon-Hyun Ryu et al*
astro-ph/1203.4018: **Atmospheric Retrieval for Super-Earth Atmospheres: Uniquely Constraining the Atmospheric Composition with Transmission Spectroscopy** by *Bjoern Benneke, Sara Seagerl*
astro-ph/1203.4080: **The high-energy environment in the super-earth system CoRoT-7** by *K. Poppenhaeger, S. Czesla, S. Schroter et al*
astro-ph/1203.4484: **A Detection Of H-alpha In An Exoplanetary Exosphere** by *Adam G. Jensen, Seth Redfield, Michael Endl et al*
astro-ph/1203.4817: **The First Planets: the Critical Metallicity for Planet Formation** by *Jarrett L. Johnson, Hui Li*
astro-ph/1203.4953: **On the accumulation of planetesimals near disc gaps created by protoplanets** by *Ben A. Ayliffe, Guillaume Laibe, Daniel J. Price et al*
astro-ph/1203.4971: **Rossiter-McLaughlin Effect Measurements for WASP-16, WASP-25 and WASP-31** by *D. J. A. Brown, A. Collier Cameron, D. R. Anderson et al*
astro-ph/1203.5036: **Spectroscopic identification of habitable extra-solar planets** by *Eyal Schwartz, Stephen G. Lipson, Erez N. Ribakl*
astro-ph/1203.5271: **A Possible Detection of Occultation by a Proto-planetary Clump in GM Cephei** by *The YETI Collaboration et al*
astro-ph/1203.5537: **The Photoeccentric Effect and Proto-Hot-Jupiters I. Measuring photometric eccentricities of individual transiting planets** by *Rebekah I. Dawson, John Asher Johnson*
astro-ph/1203.5798: **Disk-satellite interaction in disks with density gaps** by *Cristobal Petrovich, Roman R. Rafikovl*
astro-ph/1203.6017: **Thermal emission from WASP-24b at 3.6 and 4.5 μm** by *A. M. S. Smith, D. R. Anderson, N. Madhusudhan et al*
astro-ph/1203.6070: **The EVIL-MC Model for Ellipsoidal Variations of Planet-Hosting Stars and Applications to the HAT-P-7 System** by *Brian K. Jackson, Nikole K. Lewis, Jason W. Barnes et al*

astro-ph/1203.6072: **Sterile and Fertile Planetary Systems - Statistical Analysis of Multi-Planet Systems in Kepler's data** by *Amir Weissbein, Elad Steinberg, Re'em Sari*

astro-ph/1203.6265: **Resolving HD 100546 disc in the mid-infrared: Small and asymmetric inner disc inside a bright symmetric edge of the outer disc** by *O. Panic, Th. Ratzka, G. D. Mulders et al*

astro-ph/1203.6271: **Circumstellar disks and planets. Science cases for next-generation optical/infrared long-baseline interferometers** by *Sebastian Wolf, Fabien Malbet, Richard Alexander et al*