

## 2016 DDA Meeting - Program

All talks, Business meeting, coffee breaks, and poster sessions will take place at  
Vanderbilt University, 2201 West End Ave., Nashville, TN 37235  
in Wilson Hall

Rules for speakers:

35 minute invited talks (30 minutes + 5 minutes for questions)  
15 minute contributed talks (12 minutes + 3 minutes for questions)

### Sunday, May 22nd

17:00 Committee meeting - Wilson Hall

19:00 Opening reception - Wilson Hall

### Monday, May 23rd

9:00-9:10 Welcome Address: Kelly Holley-Bockelmann (DDA Chair)

#### Planet Formation and Migration (Chair: Renu Malhotra)

9:10 Konstantin Batygin "Origins of Hot Jupiters, Revisited"

9:25 Aaron Boley "The in situ formation of giant planets at short orbital periods"

9:40 Sean Mills "Kepler-233: A resonant chain of four transiting, sub-Neptune planets"

9:55 Craig Agnor "On the nature and timing of giant planet migration in the solar system"

10:10 Juliette Becker "WASP-47: a hot Jupiter with close friends"

10:25 Christopher Spalding "Dynamical origins of the Kepler dichotomy"

10:40-11:10 Coffee Break

#### Tidal Dynamics and Moon Formation (Chair: Alice Quillen)

##### BROUWER LECTURE:

11:10 Sylvio Ferraz Mello "Anelastic tides of close-in satellites and exoplanets"

11:45 Billy Quarles "Obliquity variations of a rapidly rotating Venus"

12:00 Benoit Noyelles "On the rotation of viscoelastic satellites"

12:15 Matija Cuk "Did the Kozai resonance help form Pluto's small moons"

12:30-14:00 Lunch

#### Stability of Many-body systems/non-conservative system (Chair: Fred Adams)

14:00 Daniel Scheeres "Hill stability in the finite density N-body problem"

14:20 Daniel Tamayo "A library for adding additional effects to N-body simulations"

14:40 David Tsang "Symplectic integrators: variational integrators for nonconservative systems"

15:00 Xianyu Wang "High eccentricity MMRs in the circular planar restricted three-body problem"

#### Poster Introductions (4x2 minutes)

15:15 Alice Quillen Simulating Tidal evolution and encounters with mass-spring models

15:17 Karl Jaehnig The Structural Evolution of Forming and Early Stage Star Clusters

15:19 Christina Davis Galaxy Transformation from Flyby Encounters

15:21 Indranil Banik Galaxy cluster collision speeds as a test of LCDM: possible systematics & how to avoid them

15:25-15:45 Coffee Break (Poster viewing)

#### Effects of unseen planets (Chair: Daniel Scheeres)

15:45 Christa Van Laerhoven "Effect of Unseen Planets on Secular Interactions"

16:05 Fred Adams "Interaction Cross Sections and Survival Probabilities for Proposed Solar System Member Planet Nine"

16:45 Kathryn Volk "Dynamics of the Most Distant Kuiper Belt Objects"

#### 17:15 DDA Business Meeting

### Tuesday, May 24th

**Special-Session: Impact of Astrometry on Dynamics (Chair: Alice Monet)**

|             |                   |  |
|-------------|-------------------|--|
| 9:00        | Gurtina Besla     | "HSTPROMO and the dynamics of the Local Group" [INVITED]   |
| 9:35        | Maria Tiongo      | "Effects of dynamical evolution on the internal kinematical properties of star clusters" [DUNCOMBE]                |
| 9:50        | Sebastien Lepine  | "Local stellar kinematics from large astrometric surveys: mapping the Galactic phase-space substructure" [INVITED] |
| 10:25       | Keivan Stassun    | "Determination of Precise Pre-main-sequence stellar properties through stellar and disk orbital dynamics"          |
| 10:40-11:10 | Coffee Break      |  |
| 11:10       | Seigfried Eggli   | "Is astrometry enough? Deflection relevant Near Earth Object characterization efforts in Europe" [INVITED]         |
| 11:45       | Maria Kudryashova | "Solar system object observations with Gaia Mission"   |
| 12:00       | Davide Farnocchia | "Scout: short-arc orbit analysis and hazard assessment for newly discovered asteroids"                             |
| 12:15       | Victor Slabinski  |  |
| 12:30       | P.K. Seidelmann   | "Why the Greenwich Meridian Moved"   |
| 12:45-14:00 | Lunch             |  |

**Multiplanet Systems: Stability and Characterization (Chair: Craig Agnor)**

|       |                         |  |
|-------|-------------------------|--|
| 14:00 | Jack Lissauer           | "Orbital eccentricity and the stability of planets in the Alpha Centauri system"                               |
| 14:15 | Sarah Morrison          | "Orbital stability of High Mass Planetary systems"   |
| 14:30 | Alysa Obertas           | "The stability of tightly-packed and evenly-spaced planetary systems"  |
| 14:45 | Daniel Jontof-Hutter    | "Eccentricity inferences in multi-planet systems with transit timing; degeneracies and apsidal alignment"      |
| 15:00 | Kyle Conroy             | "Discovery of a triple star system through dynamical Eclipse timing variations with Kepler eclipsing binaries" |
| 15:15 | Abhijit Krishna Puranam | "Tidal Q of a Super Earth: Dynamical constraints from the GJ 876 System"                                       |

**Poster Introductions (4x2 minutes)**

|             |   |   |
|-------------|---|---|
| 15:30       | Robert Jacobson   | The Gravity Field of Saturn and the Mass of the Saturnian Rings at the end of the Cassini Mission |
| 15:32       | Oleksiy Golubov   | Modelling evolution of asteroid's rotation due to the YORP effect                                 |
| 15:34       | B. Carter & M. Hedman   | A dusty ringlet with connections to both Prometheus and the F ring                                |
| 15:36       | Charlie Finch   | URAT Parallax Catalog: the largest parallax catalog since Hipparcos                               |
| 15:40-16:10 | Coffee Break (Poster viewing)   |   |
| 16:10       | Renu Malhotra   | "The mass distribution function of planets in the Galaxy"   |
| 16:25       | Eva Bodman  | "Cometary source for the strange behavior of KIC 8462852" [DUNCOMBE]                              |
| 16:40       | Karen Collins   | "A case study in dynamical planet ingestion by a hot host star"                                   |
| 19:00-22:00 | Public event at Dyer Observatory (optional): Panel discussion on Exoplanets |   |

**Wednesday, May 25th**
**Special session: Dynamics of Disks and Rings (Chair: Matthew Tiscareno)**

|             |                  |  |
|-------------|------------------|--|
| 9:00        | Henrik Latter    | "Planetary rings and astrophysical disks" [INVITED]  |
| 9:35        | Douglas Hamilton | "Keeping the Edges Sharp I: Honing the Theory of Narrow Rings"   |
| 9:50        | Andre Izidoro    | "Structure of the Asteroid Belt from the Gas Giants' Growth and Chaotic Dynamics"                                      |
| 10:05       | Seth Jacobson    | "Establishing different size distributions in the asteroid belt"   |
| 10:20       | Dong Lai         | "Formation and dynamics of circumbinary planets"   |
| 10:35-11:00 | Coffee Break     |  |
| 11:00       | Alice Quillen    | "Warps and streams - Pushing and lifting material out of the midplane from galactic and circumstellar disks" [INVITED] |
| 11:35       | Sarah Loebman    | "Chemodynamical signatures of radial migration in the Milky Way" [INVITED]   |
| 12:10       | Jon Bird         | "Galaxy disks in balance: vertical settling as a result of inside-out growth"  |
| 12:25       | Curtis Stuck     | "Near-exponential galaxy disks produced by scattering"   |

processes"

12:40- 14:00 Lunch

**Dynamics of galaxies and around supermassive black holes (Chair: Sarah Loebman)**

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|-------|-------------------------|--|
| 14:00 | Stacy McGaugh           | "Predicting the Velocity Dispersions of the Dwarf Satellites Galaxies of Andromeda"              |
| 14:15 | Indranil Banik          | "Anomalous motions in the local group: Evidence of a past Milky-Way Andromeda Flyby" [DUNCOMBE]  |
| 14:30 | Kelly Holley-Bockelmann | "Bar formation from Galaxy Flybys"   |
| 14:45 | Monica Valluri          | "Orbits in N-body bars and the origin of the X-shapes in boxy-peanut bulges"                     |
| 15:00 | Ann-Marie Madigan       | "Gas clouds as dynamical probes of the accretion flow around Sgr A*"                             |
| 15:15 | Mauri Voltonen          | "Orbit of the OJ287 black hole binary as determined from the General Relativity centenary flare" |

15:30-16:00 Coffee Break (Poster viewing)

**Dynamics of Small Solar System Bodies (Chair: Christa Van Laerhoven)**

- |       |                    |  |
|-------|--------------------|--|
| 16:00 | Henry (Luke) Dones | "Could the crates on the mid-sized moons of Saturn been made by satellite debris?" |
| 16:15 | Mark Showalter     | "Orbital and rotational dynamics of Pluto's small moons"                           |
| 16:30 | Rachel Smullen     | "The fate of debris in the Pluto-Charon system"                                    |
| 16:45 | Daohai Li          | "Himalia and Phoebe: Little moons that punch above their weight"                   |
| 17:00 | Paul Chodas        | "Designing Asteroid Impact Scenario Trajectories"                                  |
| 17:15 | Oleksiy Golubov    | "Spin state equilibria of asteroids due to YORP effects"                           |
| 17:30 | Rodney Anderson    | "Low-energy asteroid and comet transit analysis using isolating blocks"            |

**19:00 Conference Banquet:** [1] target="\_blank">Sambuca, 601 12th Ave South, 7 pm, Wed. \$65

--> Sign-up for banquet by COB Monday. See Kelly H-B for details.

**Thursday, May 26th**

**Saturn and Saturn's rings (Chair: Douglas Hamilton)**

- |             |                     |   |
|-------------|---------------------|---|
| 9:00        | Matthew Tiscareno   | "Propeller peregrinations: Ongoing observations of disk-embedded migration in Saturn's rings"       |
| 9:15        | Thomas Rimlinger    | "Keeping the Edges Sharp II: Honing Simulations of Narrow Rings"                                    |
| 9:30        | Philip Nicholson    | "Kronoseismology III: An update on Saturn-driven waves in the C ring"                               |
| 9:45        | Matthew Hedman      | "An array of asymmetry in Saturn's structure revealed by its rings"                                 |
| 10:00       | Maryame El Moutamid | "Tesseral resonances in the rings of Saturn"  |
| 10:15       | Ethan Arnault       | "Physical characteristics of 'wisps' in the outer edge of the Keeler gap in Saturn's rings"         |
| 10:30-11:00 | Coffee Break        |   |
| 11:00       | Robert Jacobson     | "The gravity field of Saturn and the mass of the Saturnian rings at the end of the Cassini Mission" |
| 11:15       | Joseph Spitale      | "4-km body(ies?) embedded in Saturn's Huygens Ringlet"  |
| 11:30       | Robert Chancia      | "Persistent pattern speeds in Saturn's D ring"  |

**Public Event on Exoplanets at Dyer Observatory:**

[Public nights at Dyer Observatory](#) [2] are typically sold out a month in advance and draw about 100 visitors, limited only by the available parking on the mountain. We will provide transportation to and from Dyer for a special DDA-sponsored public event on exoplanetary dynamics and astrobiology on May 24th at 7 pm.

We plan a short introductory primer on exoplanets, followed by a 4-6 member panel debate and Q+A session on what new data reveal about the possibility of life on other worlds.



If you would like to participate in this public event as a speaker, panelist, or guest, please email Kelly Holley-Bockelmann ([k.holley@vanderbilt.edu](mailto:k.holley@vanderbilt.edu) [3]) with the subject line 'DDA at Dyer'.

*Last update: 29 April 2016*

**Source URL:** <https://dda.aas.org/meetings/2016/program>

### Links

[1] <http://www.sambucarestaurant.com/home>

[2] <https://wp0.its.vanderbilt.edu/dyer/>

[3] <mailto:k.holley@vanderbilt.edu>