2019 50th Annual DDA Meeting Schedule

2019 50th Annual Meeting of the DDA

Oral Presentations

All oral presentation sessions are located in the Mathematics Building on the campus of the University of Colorado, Boulder

Sunday, June 9

4:00	DDA Committee Meeting at UMC 425		
Opening Reception Koening Alumni Center 5:00 - 8:00			
5:00	Registration opens at Koening Alumni Center; food and drink available at start		

Monday, June 10

7:50	Carl Murray, Jay McMahon, Seth Jacobson	SOC, LOC, and DDA chairs	Introduction and announcements
MATH100 Dynamics of Asteroids Chair: Marina Brozovic 8:00 - 10:00			
8:00	Timothy Holt	University of Southern Queensland	Simulations of a Synthetic Eurybates Collisional Family
8:15	Alex Davis	University of Colorado, Boulder	High-Fidelity Testing of Binary Asteroid Formation with Applications to 1999 KW4
8:30	Daniel Brack	University of Colorado, Boulder	The Dynamical Surface Environment of Tumbling Asteroids
8:45	Daniel Scheeres	University of Colorado, Boulder	Disassociation Energies for Rubble Pile Asteroids
9:00	Jay McMahon	University of Colorado, Boulder	The Dynamics of Surface Launched Particles around Bennu
9:15	Apostolos Christou	Armagh Observatory and Planetarium	Earth's missing Trojans: Lessons from Mars and the role of radiation forces
9:30	Flaviane Venditti	Arecibo Observatory	Radar Astrometry of Near-Earth Asteroids from the Arecibo Observatory: 2018-2019
9:45	Darryl Seligman	Yale University	On the Anomalous Acceleration of 1I/2017 U1 `Oumuamua

Morning Coffee Break
10:00 - 10:30

MATH100
Formation, Dynamical Evolution, and Detection of Circumbinary Planets
Chair: Billy Quarles
10:30 - 12:00

10:30	Rebecca Martin	University of Nevada, Las Vegas	Circumbinary disks: Planet formation in a dynamically complex environment (Invited)
11:00	Alessia Franchini	University of Nevada, Las Vegas	Multi-planet disc interactions in binary systems
11:15	Veselin Kostov	NASA Goddard	Using orbital dynamics to detect circumbinary planets: A novel approach (Invited)
11:45	Nader Haghighipour	University of Hawaii	Planet migration in circumbinary disks and the boundary of stability

Lunch Break
12:00 - 1:30

MATH100
Dynamics of Satellites
Chair: Kat Volk
1:30 - 3:00

1:30	Robert Jacobson	Jet Propulsion Laboratory	The Gravity Field of the Saturnian System and the Orbits of Saturn's Satellites
1:45	Thomas Rimlinger	University of MD, College Park	And Then There Was One
2:00	Marc Neveu	University of Maryland	Evolution of Saturn's mid-sized moons
2:15	Maryame El Moutamid	Cornell University	The Orbital Connection between Mimas and Enceladus
2:30	Matija Cuk	SETI Institute	Dynamical History of the Uranian Satellites
2:45	Marina Brozovic	Jet Propulsion Laboratory/California Institute of Technology	Orbits and resonances of the regular moons of Neptune

Afternoon Coffee Break
3:00 - 3:30

Dirk Brouwer Award Prize Lecture
Chair: Seth Jacobson
3:30 - 4:15

3:30	James Stone	Princeton University	Numerical Methods for Astrophysical Fluid Dynamics

Vera Rubin Early Career Prize Lecture
Chair: Seth Jacobson

4:15 - 5:00

4:15	Gurtina Besla	University of Arizona	The LMC vs. the Milky Way

Conference Banquet
Fiske Planetarium
6:00 - 9:00

6:00	Drink available at start
7:00	Dinner served
8:00	Planetarium show (hour long)

Tuesday, June 11

7:50	Carl Murray, Jay McMahon, Seth Jacobson	SOC, LOC, and DDA chairs	Introduction and announcements

MATH100
In Honor of the Contributions of Andrea Milani
Chairs: Steven Chesley and Federica Spoto
8:00 - 10:00

8:00	William Bottke	Southwest Research Institute	The Dynamical Evolution of Asteroid Families (Invited)
8:25	Federica Spoto	Observatoire de la Cote d'Azur	New advances on chaotic orbit determination
8:40	Giovanni Valsecchi	IAPS-INAF	Planetary close encounters: an analytical approach (Invited)
9:05	Davide Farnocchia	Jet Propulsion Laboratory, California Institute of Technology	The tale of three small impacting asteroids (Invited)
9:30	Daniele Serra	University of Pisa	Orbit determination for space missions in Pisa: results and simulations from Juno and BepiColombo
9:45	Steven Chesley	Jet Propulsion Laboratory, California Institute of Technology	Trajectory estimation for Bennu's particles

Morning Coffee Break
10:00 - 10:30

MATH100
Dynamics of the Outer Solar System
Chair: Davide Farnocchia
10:30 - 12:00

10:30	Luke Dones	Southwest Research Institute	Origin and Evolution of Long-Period Comets
10:45	William Oldroyd	Northern Arizona University	Computationally and Observationally Constraining the Outer Solar System Perihelion Gap to Help Find Planet X
11:00	Alexander Zderic	University of Colorado, Boulder	Resilience of the Self-Gravity Instability

			to Precession
11:15	Daniel Baguet	Universite de Franche-Comte - Institut UTINAM - OSU Theta	Positions of the secular resonances in the primordial Kuiper Belt disk
11:30	Kathryn Volk	University of Arizona	Not a simple relationship between Neptune's migration speed and Kuiper belt inclination excitation
11:45	Benjamin Proudfoot	Brigham Young University	Candidate Resonant Family Members of the Dwarf Planet Haumea

Lunch Break
12:00 - 1:30

MATH100
Dynamics of Stars
Chair: Julie Comerford
1:30 - 3:30

1:30	Hayden Foote	University of Colorado, Boulder	Vertical Mass Segregation in Eccentric Nuclear Disks
1:45	Alexander Stephan	University of California, Los Angeles	The Fate of Binaries in the Galactic Center: The Mundane and the Exotic
2:00	Bao-Minh Hoang	University of California, Los Angeles	Detecting Black Hole Dynamics in the Heart of Galaxies with LISA
2:15	David Fleming	University of Washington	Rotation Period Evolution in Low-Mass Binary Stars: The Impact of Tidal Torques and Magnetic Braking
2:30	Sanaea Rose	University of California, Los Angeles	Companion-driven evolution of massive stellar binaries
2:45	Aleksey Generozov	University of Colorado, Boulder	Eccentricity and the Hills Mechanism
3:00	Erez Michaely	University of Maryland	From ultra-wide binaries to interacting binaries in the field
3:15	Nathaniel Moore	Georgia Institute of Technology	Distribution of Planetesimals During Stellar Encounters

Afternoon Coffee Break
3:30 - 4:00

MATH100
Dynamics of Galaxies
Chair: Aleksey Generozov
4:00 - 5:00

4:00	Ekta Patel	University of Arizona	Dynamics of Local Group Satellite Galaxies in the Era of High Precision Astrometry

4:15	Curtis Struck	Iowa State University	Hot and Cold Exponential Galaxy Disks from Star and Gas Scattering
4:30	Julie Comerford	University of Colorado, Boulder	Using Kinematics to Discover an AGN Turning Off and On
4:45	Rebecca Nevin	University of Colorado, Boulder	Accurate Identification of Galaxy Mergers with Imaging and Kinematics

DDA Annual Members' Meeting
MATH100
5:00 - 6:00

Public Talk
Upslope Brewery
1898 S Flatiron Ct, Boulder, CO 80301
7:00 - 9:00

7:00	Alyssa Rhoden	Southwest Research Institute	Exploring Ocean Worlds

Wednesday, June 12

7:50	Carl Murray, Jay McMahon, Seth Jacobson	SOC, LOC, and DDA chairs	Introduction and announcements

MATH100
Dynamics of Rings
Chair: Maryame El Moutamid
8:00 - 9:45

8:00	Joseph A'Hearn	University of Idaho	Are moonlets hidden among the clumps in Saturn's innermost ring?
8:15	Philip Nicholson	Cornell University	The shape of Saturn's outer B ring
8:30	Rebecca Harbison	University of Nebraska, Lincoln	Changes in Saturnian Ring Particle-Size Distribution after Satellite Passage
8:45	Douglas Hamilton	University of Maryland	Stability of One Dimensional Rings of Gravitationally Interacting Masses
9:00	Yuxi Lu	University of Maryland	Simulating Saturn's A ring edge with a single chain of gravitationally-interacting particles
9:15	Glen Stewart	University of Colorado	A Variational Principle for Self-Gravity Wakes and Spiral Density Waves
9:30	Bruno Sicardy	Sorbonne Universit√© and Paris Observatory	Rings around irregular bodies: a rich zoo of resonances

MATH100
Dynamics of lunar probes
Chair: Maryame El Moutamid
9:45 - 10:00

9:45	Davide Amato	University of Arizona	The dynamical demise of Luna-3

Morning Coffee Break
10:00 - 10:30

MATH100
Dynamics of Planetary Systems
Chair: Sarah Millholland
10:30 - 12:00

10:30	Matt Clement	Oklahoma University	The Early Instability Scenario for Planet Formation in the Solar System
10:45	Renu Malhotra	The University of Arizona	Mean motion resonance widths at low and high eccentricity
11:00	Spencer Wallace	University of Washington	Collision rates of planetesimals near mean-motion resonances
11:15	Christopher Spalding	Yale University	The Solar wind as a sculptor of terrestrial planet formation
11:30	Claudia Sandine	Northwestern University	Dynamical Evidence for Terrestrial Planet Debris in the Asteroid Belt
11:45	Jeremy Brooks	Northwestern University	Losing moons: The gravitational influence of close encounters on satellite orbits

Lunch Break
12:00 - 1:30

MATH100
Dynamics of Exoplanets
Chair: Christopher Spalding
1:30 - 3:30

1:30	Sarah Millholland	Yale University	Excitation of Planetary Obliquities Through Planet-Disk Interactions
1:45	Billy Quarles	Georgia Institute of Technology	Obliquity Evolution of Earthlike planets in α Centauri AB
2:00	Darin Ragozzine	Brigham Young University	Modeling the Architectures of Exoplanetary Systems using Clusters of Similar Planets
2:15	Fred Adams	University of Michigan	Dynamical Constraints on Planetary Systems: Multi-Planet Systems Observed with Single Transits
2:30	Jesus Salas	UCLA	Unseen companions of V Hya inferred from periodic ejections
2:45	Bonan Pu	Cornell University	Low-Eccentricity

			Formation of Ultra-Short Period Planets in Multi-Planet Systems
3:00	Elizabeth Bailey	California Institute of Technology	The hot Jupiter period-mass distribution as a signature of in situ formation

Afternoon Coffee Break
3:15 - 4:00

MATH100
Dynamics of Exoplanets (continued)
Chair: Christopher Spalding
4:00 - 4:30

4:00	Marialis Rosario-Franco	National Radio Astronomy Observatory	Determining Stability Conditions for Submoons Orbiting Exomoon Candidate: Kepler 1625-b-I

MATH100
Dynamics of the N (>= 3)-Body Problem
Chair: Apostolos Christou
4:15 - 5:15

4:15	Mauri Valtonen	University of Turku	Three-body stability limit at infinite time
4:30	Rodney Anderson	Jet Propulsion Laboratory, California Institute of Technology	Spatial Low-Energy Asteroid and Comet Transit Analysis
4:45	Daniel Tamayo	Princeton University	Operator splitting methods for numerical integration of weakly perturbed N-body systems
5:00	David Hernandez	RIKEN	Should N –body integrators be (fully) symplectic?

Unoffical Pub Night
Bohemian Biergarten
2017 13th St, Boulder, CO 80302
8:00 - 10:00

8:00	Merriment

Thursday, June 13

7:45	Carl Murray, Jay McMahon, Seth Jacobson	SOC, LOC, and DDA chairs	Introduction and announcements

MATH100
In Honor of the Contributions of Bill Ward
Chair: Alan Harris
7:50 - 10:00

7:50	Alan Harris	More Data! Inc.	Introduction
7:55	Andrew Youdin	University of Arizona	The Formation of Planetesimals (Invited)
8:20	Robin Canup	Southwest Research Institute	The Evection Resonance in the

			Earth-Moon system: Analytical analysis
8:35	Raluca Rufu	Southwest Research Institute	The Evection Resonance in the Earth-Moon system: Numerical analysis
8:50	John Papaloizou	University of Cambridge	Bill Ward's Contributions to Planet Formation and Migration (Invited)
9:15	Zeeve Rogoszinski	University of Maryland	Tilting Ice Giants With Circumplanetary Disks
9:30	Edwin Kite	University of Chicago	Multi-Gyr obliquity history of Mars retrieved using the bombardment compass
9:45	Craig Agnor	Queen Mary University of London	Scanning Secular Resonance Theory and the Epoch of Giant Planet Migration

Morning Coffee Break
10:00 - 10:30

MATH100
Spin-Orbit Dynamics
Chair: Rebecca Harbison
10:30 - 12:00

10:30	David Minton	Purdue University	Tidally-driven collapse of outer solar system binaries.
10:45	Mark Showalter	SETI Institute	The Search for Spin-Orbit Resonances in the Pluto System
11:00	Simon Porter	Southwest Research Institue	Constraints on the Masses of Nix and Hydra
11:15	Seth Pincook	Brigham Young University	Spin and orbit dynamics of unique Kuiper belt trinary Lempo
11:30	Sebastien Ferrer	Universidad de Murcia	A 2-DOF triaxial model for the roto-orbital coupling in a binary system. The slow rotation regime
11:45	James Shirley	Jet Propulsion Laboratory	Relevance of Solar System Dynamics for Present-Day Studies of Planetary Atmospheric Circulations (and other Geophysical Phenomena)

Poster Presentations

All poster presentation sessions are located in the Mathematics Building on the campus of the

University of Colorado, Boulder

Available all week

1	Leland Langston	L2 Consulting	A New Non-Recursive Approach for Calculating Satellite Orbital Positions
2	Thomas Chamberlain	University of California, Berkeley	Derivation of Cosmic Acceleration Given Inward Unbounded Light-Speed in the Hubble Expansion
3	Aaron Rosengren	University of Arizona	Geocentric Proper Orbital Elements
4	David Bartlett	University of Colorado, Boulder	Cosinusoidal Potential as a Possible Solution to the Planet IX Problem
5	Jian Wu	Iowa State University	Formation of Exponential Profiles from Stellar Scattering Investigated with N-body Simulations
6	Travis Yeager	Iowa State University	Simulations of Multi-component Splash Bridges in Direct Galaxy Collisions
7	Richard French	Wellesley College	High-resolution profiles of the Uranian rings from Voyager 2 radio occultation observations
8	Carlisle Wishard	Purdue University	Collisional fragmentation as a source for early martian impactors
9	Robert Chancia	University of Idaho	Re-examining the rings of Uranus in the Voyager 2 images
10	Hayden Foote	University of Colorado Boulder	Vertical Mass Segregation in Eccentric Nuclear Disks
11	Margrethe Wold	Universtity of Agder	The planar rigid two-body problem
12	David Fleming	University of Washington	VPLanet: The Virtual Planet Simulator
13	Jorge Perez-Hernandez	ICF-UNAM	Effect of the Yarkovsky transverse parameter on radar astrometry for asteroid (99942) Apophis
14	Hareesh Gautham Bhaskar	Georgia Institute of Technology	Non-hierarchical Triple Dynamics and Applications to Planet Nine
15	Joseph Hahn	Space Science Institute	Nbody Simulations of Self Confining Ringlets
16	Abigail Graham	Brigham Young University	Identifying Three-body Resonances in Kepler’s Extrasolar Planetary Systems

17	Vatsala Sharma	Brigham Young University	Towards a Photodynamical Analysis of Kepler’s Multiply-Transiting Systems
18	Sierra Ferguson	Arizona State University	Size frequency distributions of impact craters on Saturn’s moons Tethys & Dione; implications for source impactors
19	Daniel Hestroffer	IMCCE, Paris	Comparison of predictions of asteroids' close encounters with the Earth
20	Ziqian Hong	Georgia Institute of Technology	Could there be an undetected inner planet near the stability limit in Kepler-1647?
21	Michael Cahill	University of Wisconsin - Milwaukee	The Exact Boltzmann Most Probable Monatomic Ideal Gas
22	Colleen McGhee-French	Wellesley College	Planned archive of Uranus ring occultation observations on NASA's Planetary Data System

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