2024 55th Annual DDA Meeting Schedule

2024 55th Annual Meeting of the DDA

Toronto, Ontario, Canada

Oral Presentations

All times are local time (EDT, UTC-4)

Full abstracts can be found here [1].

Plan your talks for 12m+3 (for questions). Invited talks are 15m+3m.

Remote talks are 7+3m

* 2024 Duncombe award

** 2023 Duncombe award

For talks and posters tips, please see here [2], including on how to upload posters.

Sunday, May 12th

Opening Reception
Venue: Myhal 150 & Lobby **[3],** google map **[4]**
Myhal Centre,
55 St George St,
Toronto, ON M5S 0C

6:00 – 8:00

Monday, May 13th

Introduction and Announcements
Smadar Naoz, Sam Hadden, Matt Tiscareno
SOC, LOC, and DDA Chairs

8:45 – 9:00

Stellar (and planets) binaries
Chair: Sanaea Rose
Slack Chair: Gene Milone

9:00 – 10:30

9:00	Fred Adams	Theory for the Formation of Jupiter-Mass Binary Systems
9:15	Tomer Yavetz	Wide Binaries as Dynamical Probes of the Milky Way's Structure
9:30	Santiago Torres	The Dynamical Evolution of Planets Orbiting Interacting Binaries
9:45	Michael Poon	Leaning Sideways: VHS 1256-1257b is a Super-Jupiter with a Uranus-like Obliquity
10:00	Mor Rozner	Born to Be Wide: The Distribution of Wide Binaries in the Field and Soft Binaries in Clusters
10:15	Yukun Huang (remote)	JuBMOs Were Formed Tight: Dynamical Evolution of Jupiter Mass-Binary Objects within Stellar Clusters

Coffee Break

10:25 – 10:50

The outer solar system and interstellar objects
Chair: Santiago Torres
Slack Chair: Gene Milone

10:50 – 12:20

10:50	Matija Cuk	Orbital Histories of Titan, Hyperion and Iapetus
11:05	Ian Chow	The Dynamical Origin of Decameter Earth Impactors
11:20	Matthew Hopkins	Predicting Interstellar Object

		Chemodynamics with Gaia
11:35	Arcelia Hermosillo Ruiz	Forcing Planets to Evolve: How Damping Neptune's Eccentricity can Indirectly Affect the Orbit of Uranus
11:50	Scott Tremaine	Testing MOND on small bodies in the remote solar system
12:05	Cole Gregg	The Development of Interstellar Meteoroid Streams

Lunch

12:20 – 1:50

1:50	Jackson Barnes	The Properties of Contact Binaries Formed From Gravitational Collapse
2:05	Garett Brown	The effects of stellar flybys on the formation and stability of the Solar System
2:20	Daniel Scheeres	Energy and Angular Momentum Constraints on Collapsing Granular Systems

Special Session: How Thousands of New Satellites Will Affect the Sky and Astronomy (Each talk = 18m)
Chair: Matija Cuk
Slack Chair: Matt Tiscareno

2:35 – 3:32

2:35	Samantha Lawler	Light pollution from satellites: what's coming and what astronomy research will be compromised
2:53	Sarah Greenstreet	The Impact of Satellite Constellations on Rubin Observatory's Legacy Survey of Space and Time (LSST)
2:11	Hanno Rein	Visualizing Dynamical Astronomy for Science and Outreach
3:29	Aaron Boley	How astronomers can protect dark and quiet skies

Coffee Break

3:47 – 4:10

Galactic dynamics, MW and its counterparts
Chair: Smadar Naoz
Slack Chair: Tiger Lu

3:55 – 5:40

4:10	Gustavo Medina Toledo	A distribution-function based estimation of the Milky Way mass from outer halo tracers observed by DESI
4:25	Jacob Nibauer	The Linear Response of Tidal Streams to Arbitrary Galactic Substructure with Differentiable Simulations
4:40	Frank Van Den Bosch	Core Instability and its relation to Core Stalling and Dynamical Buoyancy
4:55	Sam Hadden	Fudge-free actions: action-angle variables in galactic dynamics via Birkhoff normalization
5:10	Nathaniel Starkman	Stream Members Only: Data-Driven Characterization of Stellar Streams with Mixture Density Networks
5:25	short break	
5:30	**IDEA Early discussion,** led by JJ Zanazzi and Santiago Torres (in-person), and Rogerio Deienno (online)	

Tuesday, May 14th

Rubin Prize Lecture: Carl Rodriguez
The lives, deaths, and black hole dynamics of star clusters
Chair: Matthew Tiscareno
Slack Chair: Smadar Naoz

9:00 – 10:00

Coffee Break
10:00 – 10:20

Compact object dynamics in star clusters
Chair: Gongjie Li
Slack Chair: Gene Milone
10:20 – 12:00

10:20	Fulya Kiroglu	Spinning up Black Holes in Merging Binaries through Stellar Collisions in Young Star Clusters
10:35	Miguel Angel Martinez	Retention and Ejection of Intermediate Mass Black Holes from Dense Stellar Environments
10:50	Claire Ye	Where Are Their Companions? Isolated Millisecond Pulsars in Globular Clusters
11:05	Zeyuan Xuan (remote)	Dynamical Formation of Highly

		Eccentric Compact Object Binaries and Their Gravitational Wave Signatures in the Millihertz Band
11:15	Jiaru Li	BH Binary Formation in AGN Disks: Dynamics, Hydrodynamics, and GW Signatures
11:30	Mark Dodici	Using Hill's problem to study binary formation under dynamical friction

Lunch
12:00 – 1:35

Kepler’s multis
Chair: Sarah Millholland
Slack Chair: Gene Milone

1:35 – 3:20

1:35	Gongjie Li	Spin and Seasonal Variations for Planets in Compact Systems
1:50	Daniel Fabrycky	Orbital periods in multiple-planet systems: beyond the mission timescale for TTV and mono-transits
2:05	Thea Faridani	Secular Resonances in Exoplanet Systems Are More Likely Than You'd Think
2:20	Caleb Lammers*	The instability mechanism of compact multiplanet systems
2:35	Yubo Su	Long-lived Planetary Obliquities of Close-in Exoplanets: The Tricky Story for Rocky Bodies
2:50	Daniel Jones	Photodynamical Analysis of All Kepler Systems of Multiple Transiting Planets
3:05	Lauren Weiss	The Kepler Giant Planet Search. I. A Decade of Kepler Planet-host Radial Velocities from W. M. Keck Observatory

Coffee Break
3:20 – 3:40

3:40	Jessica (Jingyun) Lin & Ivan Dudiak	Creating Pileups of Eccentric Planet Pairs Wide of MMRs Through Divergent Migration
3:55	Rori Kang	Spacing Uniformity in Multiplanet Systems as a Probe of the Giant Impact Phase of Planet Formation
4:10	Simone R. Hagey	Characterizing the effects of systemic proper motion on long-term exoplanet transit observations
4:25	Eritas (Qing) Yang	Modulating the stability boundary: secular dynamics of compact three-planet systems
4:40	Phoebe Sandhaus	Simulating the Effects of Outer Giant Planets on Inner Super-Earths with In Situ Formation Models

Mass hierarchy and it's consequences (probing DM and 4-body system)
Chair: Matt Tiscareno
Slack Chair: Smadar Naoz
4:55 – 5:25

4:55	Man Ho Chan	Constraining dark matter properties by orbital precession around the Galactic supermassive black hole
5:10	Ygal Klein	Librating Kozai-Lidov Cycles with a Precessing Quadrupole Potential are Analytically Approximately Solved

Public talk
Samantha Lawler
Internet for all? The painfully high costs of megaconstellations for astronomy, the atmosphere, and the future of LEO
7:00 – 8:00

Wednesday, May 15th

Dynamics near SMBHs
Chair: Claire Ye
Slack Chair: Yubo Su

9:00 – 10:30

9:00	Smadar Naoz	It's Raining Black Holes...Hallelujah!
9:15	Hanxi Wang (remote)	Statistical Mechanics in the Galactic Center: Anisotropic Mass segregation and Phase Transition
9:25	Sanaea Rose**	Collisional Shaping of Nuclear Star Cluster Density Profiles
9:40	Jane Bright *	The M31 Nucleus: Our Closest Recoiled Black Hole?
9:55	Tatsuya Akiba	Kickin' it with Friends: Evidence of a Past Black Hole Merger in the Galactic Center

10:10	Denyz Melchor	Tidal disruption events galore, could you want more? On the formation of repeated TDEs

Coffee Break
10:25 – 10:50

Protoplanetary disks and planet formation
Chair: Songhu Wang
Slack Chair: Michelle Vick

10:50 – 11:50

10:50	Wenrui Xu	Imprints of pressure-bump planet formation on planetary architectures
11:05	Marcy Best	How do Giant Planets influence inner Planet Formation?
11:20	Eonho Chang	Sufficient Criterion for the Rossby Wave Instability: A Hierarchical Approach
11:35	Jiaqing Bi	Shoulder of Dust Rings Explained by Dust Dynamics Under Planet-Disk Interactions

Tides
Chair: Matt Tiscareno
Slack Chair: Gene Milone

11:50 – 12:35

11:50	Janosz Dewberry	Tidal synchronization trapping in stars and planets with convective envelopes
12:05	Carolina Charalambous	Tidal effects on extrasolar resonant chains
12:20	Robert Melikyan	Tidal Dynamics and the Collisional Evolution of Binaries

Lunch
12:35 – 2:00

Planet's Satellites and Rings
Chair: Mor Rozner
Slack Chair: Gene Milone

2:00 – 3:35

2:00	Max Goldberg	Chaotic tides as a solution to the Hyperion problem
2:15	Maryame El Moutamid	The Role of Three-Body Resonances on the Dynamical History of the Saturnian Satellite System
2:30	Jose Castro (remote)	The Sensitivity to initial conditions of the Orbital Pathways of Lunar Ejecta
2:40	Raluca Rufu	Evection Resonance in the Earth-Moon system
2:55	Matthew Hedman	Unexpected structures in Uranus' gamma ring.
3:10	Alyssa Rhoden (remote)	The evolution of a young ocean within Saturn's moon, Mimas
3:20	Philip Nicholson	Analysis of bending waves in Saturn's rings

Coffee Break
3:35 – 4:00

Mentoring from the DEI Lens
Sherard Robbins
"The Missing Link: Mentorship as The Key to Success "
Chair: Smadar Naoz
Slack Chair: Matt Tiscareno

4:00 – 5:00

5:00 - 5:30	Mentoring discussion
5:30- 6:30	Mentoring event Pairing mentors

DDA Banquet

Venue: Amsterdam Brewhouse on the Lake [5]

Amsterdam Brewhouse on the Lake
245 Queens Quay W, Toronto, ON

1-416-504-1020 ext. 315

7:00 - 9:00

Thursday, May 16th

Brouwer Prize Lecture: Alessandra Celletti
From Infinite to Finite Time Stability in Celestial Mechanics, from Perturbation Theory to Machine Learning Methods
Chair: Matthew Tiscareno
Slack Chair: Smadar Naoz
9:00 – 10:00

Coffee Break
10:00 – 10:20

White Dwarfs
Chair: Alexander Stephan
Slack Chair: Michelle Vick

10:20 - 10:50

10:20	Christopher O'Connor*	The thermal evolution of WD1856b reveals its migration history
10:35	Dang Pham	Polluting White Dwarf with Oort Cloud Comets

On the Formation and Dynamical Evolution of Hot Jupiters Session 1
Chair: Malena Rice
Slack Chair: Yubo Su

10:50 - 12:11

10:50	Eve Lee	Testing disk migration theory with hot and warm Jupiters
11:08	Cristobal Petrovich	High-eccentricity migration of hot Jupiters
11:26	Grant Weldon	A semi-analytical model for eccentric Kozai-Lidov migration of Hot Jupiters
11:41	Yurou Liu	The Formation of Double Hot Jupiter Systems Through ZLK Migration
11:56	Michelle Vick (remote)	The Spin Evolution of a Gas Giant throughout High-Eccentricity Migration

Lunch Break
12:06 –1:40

On the Formation and Dynamical Evolution of Hot Jupiters Session 2
Chair: Gongjie Li
Slack Chair: Yubo Su

1:40 - 3:01

1:40	Malena Rice	The Orbital Architectures and Companion Rates of Hot Jupiter Systems
1:58	Songhu Wang	Towards a Unified Story of Hot Jupiter Formation
2:16	John Zanazzi	Damping stellar obliquities by resonance locking
2:31	Sarah Millholland	Empirical Constraints on Tidal Dissipation in Hot Jupiter Host Stars
2:46	Alexander Stephan	Dwarfs pushing Giants: Uncovering Hot Jupiter Formation Pathways obscured by Stellar Evolution and White Dwarf Formation Kicks

Kuiper Belt / TNOs / Trojan
Chair: Maryame El Moutamid
Slack Chair: Matt Tiscareno

3:01 – 3:46

3:01	Brett Gladman	Primordial Orbital Alignment of Sednoids
3:16	Sarah Greenstreet	Jupiter's Metastable Companions
3:31	C. Adeene Denton	Groundhog Day in the Kuiper Belt? How strength can trap KBOs in a collisional loop

Coffee Break
3:46 – 4:00

DDA Business Meeting
All DDA Meeting attendees are welcome and encouraged to attend!
Only DDA members will be able to vote. DDA officers will give reports, and future meetings and activities of the AAS Division on Dynamical Astronomy (DDA) will be discussed.

4:00 – 5:30

Poster Session + Pizza
All posters are featured.

6:00 pm

Friday, May 17th

Asteroids and DART
Chair: Matt Tiscareno
Slack Chair: Smadar Naoz

9:15 – 10:55

9:15	Dahlia Baker	Asteroid Obliquity Evolution due to Boulder-Induced YORP
9:30	Paul Chodas	Deflecting an Asteroid: A Numerical Comparison of Techniques
9:45	Rachel Cueva	Semisecular Resonances within the Long-Term Dynamical Evolution of Didymos
10:00	Paul Wiegert	The closest upcoming encounters between asteroid 99942 Apophis and the known asteroids
10:15	Alex Meyer*	The Rotational State of Dimorphos

		After the DART Impact
10:30	Rogerio Deienno (remote)	The size-frequency distribution of terrestrial planet formation leftover planetesimals compared to that of the S-complex component in the main asteroid belt.
10:40	David Minton	Constraining the depletion rate of Hungaria asteroids under the influence chaos and relativity.

Coffee Break

10:55 - 11:15

Kuiper Belt / TNOs / Trojan Session 2

Chair: Sam Hadden
Slack Chair: Matt Tiscareno

11:15 – 11:40

11:15	Meagan Thatcher	Exploration of Spin-Orbit Dynamics in TNO Binary Borasisi-Pabu
11:30	Sebastian Ram’rez (remote)	Long-term Dynamical Stability in the Outer Solar System: Leaking rate of Neptune's Mean Motion Resonance

Triples
Chair: Alexander Stephan
Slack Chair: Yubo Su

11:40 – 12:10

11:40	Barry Ginat**	Three-Body Binaries and Gravitational-Wave Sources
11:55	Barak Kol	The flux-based statistical theory for the three-body system

Codes and tools
Chair: Matthew Tiscareno
Slack Chair: Michelle Vick

12:10 – 1:05

12:10	David Hernandez	Multiple timestep reversible N-body integrators
12:25	Tiger Lu	TRACE: Time-Reversible Algorithm for Astrophysical Close Encounters
12:40	Daniel Tamayo	Teaching planetary dynamics with the celmech and REBOUND(x) packages
12:55	Matthew Holman (remote)	ASSIST: An Ephemeris-Quality Test Particle Integrator

1:05 - End of Meeting and goodbyes

Poster Presentations TBA

Available all week

This will also be the order of presentation of the posters on Thursday afternoon

Althea Moorhead	A suite of online tools for meteoroid environment modeling
Dallin Spencer	SBDynT: Real-Time Characterization of Small Body Dynamics Code for Solar System Surveys
William Oldroyd	Dynamical Migration of Discoveries from the Active Asteroids Citizen Science Project
Tatsuya Akiba	Hungry, Hungry White Dwarfs: Tidal Disruption of Planetesimals from an Eccentric Debris Disk Following a White Dwarf Natal Kick
Marina Brozovic	GAIA astrometry for the natural satellites of the solar system
Matthew Doty	Characterizing the transition from stability to instability in compact multi-planet systems
Phoebe Sandhaus	EXOZIPPy: A Python translation of EXOFASTv2 to simultaneously model stars and planets
Kaustub Anand	Formation of Rings around Centaurs
Ian Brunton	The Amalthea Group: Modeling migration of Jupiter's inner moons to constrain primordial conditions of the

	Jovian circumplanetary disk.
Alessia Guido	Manifold connections and the transport of small bodies through mean motion resonances in the Solar System
Maia Wertheim	Searching for Milky Way Satellite Streams in the Distant Halo
Supakrai Teekamongkol	Elucidating the dominant sources of chaos in compact 3-planet systems
Roy Omar Edgar Bustos Espinoza	PERTURBATION EFFECTS AND THE EVOLUTION OF gLSBGs: THE CASE OF MALIN 1 - PAST & FUTURE INTERACTIONS WITH SATELLITE GALAXIES
Evgeny Romashets	Mechanism of slowing down rotation of hot jupiters
Amir Siraj	Are There Terrestrial Planets Lurking in the Outer Solar System?
Aster Taylor	The Formation and Structure of Circumplanetary Disks
Andrew Lapeer	Probing the Lower Limits of Detectable Central Black Hole Masses in Virgo Cluster CSS with JWST NIRSpec IFU Kinematics
Nathan Sandford	A Chemodynamic Analysis of the Ultra-faint Dwarf Galaxy Boötes I with S⁵
Kecheng Qian	Dynamical Friction Models for Black Hole Binary Formation in Active Galactic Nucleus Disks
Benjamin Hanf	Orbital Migration through Atmospheric Mass Loss
Xiangyuan Ma	Using graph neural networks to detect dark matter in stellar streams
Kaitlyn Chen	Carving Out the Inner Edge of the Exoplanet Period Ratio Distribution through Dynamical Instabilities
Lucas Pereira	Confined Chaos and the Chaotic Angular Motion of Atlas, a Saturn's Inner Satellite
Valerio Carruba	On the identification of the first two young asteroid families in g-type non-linear secular resonances
Victor Afigbo	Resonant responses to planetary normal-modes reveals some secrets of Saturn's C-Ring
Rogerio Deienno	The size-frequency distribution of terrestrial planet formation leftover planetesimals compared to that of the S-complex component in the main asteroid belt.
David Minton	Constraining the depletion rate of Hungaria asteroids under the influence chaos and relativity.
Anargyros Dogkas	An Analytical Method for Resonant Proper Elements
Saahit Mogan	Effect of Tidal Circularization on Circumbinary Planet Populations
Zhijie (Jay) Xu	The cosmic quenching and scaling laws for the evolution of SMBHs and host galaxies
Robert Jacobson	The Orbit of the Small Saturnian Satellite, Daphnis
Sara Di Ruzza	Analysis of co–orbital motion of real asteroids in a medium–term timescale
Luke Dones	Nongravitational Accelerations for Long-Period Comets: How Well Can We Determine Original Orbits?
Andrew Li	The simultaneous globular cluster and dwarf galaxy origins of the Jhelum stellar stream

Source URL: https://dda.aas.org/meetings/2024/program

Links
[1] https://submissions.mirasmart.com/DDA55/Itinerary/EventsAAG.aspx
[2] https://dda.aas.org/meetings/2024/presentation-guidelines-and-tips

[3] https://campusevents.utoronto.ca/myhal-150-lobby/
[4] https://www.google.com/maps/place/Myhal+Centre+for+Engineering+Innovation+and+Entrepreneurship+(MY)/@43.6612589,-79.3962868,17.69z/data=!4m6!3m5!1s0x882b3507c2ae5979:0x877d95bac233a7f5!8m2!3d43.6607349!4d-79.3966122!16s%2Fg%2F11gj0sd9qf?entry=ttu
[5] https://amsterdambeer.com/pages/brewhouse-by-the-lake