

Exoplanets and Planet Formation

Sunday, Dec. 7

16:00 – 20:00 Arrival and Registration
18:00 – 20:00 Reception & Informal Dinner

Monday, Dec. 8

08:30 – 08:35 Welcome
08:35 – 10:15 **Planet Detection: New Methods and New Combinations**
10:15 – 10:45 Coffee Break
10:45 – 12:25 **Planet Populations and Patterns**
12:25 – 14:00 Lunch
14:00 – 15:30 **Protostars and Protoplanets**
15:30 – 16:00 Coffee Break
16:00 – 17:40 **Disks I**

Tuesday, Dec. 9

08:30 – 10:15 **Rocky Planets**
10:15 – 10:45 Coffee Break
10:45 – 12:25 **From Rocky Planets to Sub-Neptunes**
12:25 – 14:00 Lunch
14:00 – 15:35 **Dynamics and Resonances**
15:35 – 17:35 **Poster Session I**

Wednesday, Dec. 10

08:30 – 10:15 **From Sub-Neptunes to Giant Planets**
10:15 – 10:45 Coffee Break
10:45 – 12:15 **Dynamics and Evolution**
12:15 – 14:00 Lunch
14:00 – 15:35 **Stars**
15:35 – 15:45 Short Break
15:45 – 16:50 **Solar System**
16:55 – 21:00 TDLI Reception & Banquet (including transportation)

Thursday, Dec. 11

08:30 – 10:15 **Disks II**
10:15 – 10:45 Coffee Break
10:45 – 12:25 **Planet Formation Theory I**
12:25 – 14:00 Lunch
14:00 – 15:15 **Chemical Signatures / Interstellar Objects**
15:15 – 16:45 **Poster Session II**
16:45 – 18:00 **Free-Floating Planets**

Friday, Dec. 12

08:30 – 10:20 **Young Planets and Multiple-Star Systems**
10:20 – 10:50 Coffee Break
10:50 – 12:10 **Planet Formation Theory II**
12:10 – 13:45 Lunch
13:45 – 15:15 **Future Projects**
15:15 – 15:45 **Panel (TBD) & End of Meeting**

DETAILED SCHEDULE

Solicited talks: 12+3 mins – Contributed talks: 8+2 mins

MONDAY

08:30 – 08:35 Welcome

08:35 – 10:15 (100 min) **Planet Detection: New Methods and New Combinations**

(Chair: Dong Lai)

- LAGRANGE, Anne-Marie (CNRS/Paris Observatory/PSL): Beyond the Ice Line: Unveiling Giant Planets combining Gaia, radial velocity and high contrast imaging (220)
- FENG, Fabo (TDLI): Multi-method Exoplanet Science in the Gaia Era (300)
- WINN, Joshua (Princeton University): Updated Forecast for Gaia Astrometric Planet Detections (188)
- SOZZETTI, Alessandro (INAF - Osservatorio Astrofisico di Torino): Gaia: Towards the DR4 and DR5 exoplanet candidate catalogues (294)
- ALBRECHT, Simon (Aarhus University): Exoplanets & Brown Dwarfs on Wide Orbits: Early Confirmation of Gaia DR3 Candidates (183)
- WITTENMYER, Rob (University of Southern Queensland): A reunion of old friends: Radial velocity characterisation of giant planets in the Gaia era (207)
- YAHALOMI, Daniel (Flatiron Institute): At the Edge of Discovery: Probing Planetary Architectures with TTVs and Gaia Astrometry (282)

10:15 – 10:45 Coffee Break

10:45 – 12:25 (100 min) **Planet Populations and Patterns**

(Chair: Yanqin Wu)

- WANG, Jason (Northwestern University): Population Level Differences Between Wide-Separation Giant Planets and Brown Dwarfs (88)
- BRYAN, Marta (Penn State): Friends not foes: How Jupiters shape the lives of small planets (102)
- ZANG, Weicheng (Westlake University): Super-Earth Exoplanets are Common in Jupiter-like Orbits (278)
- WEISS, Lauren (University of Notre Dame): Patterns in Multi-Planet Systems (17)
- XIE, Ji-Wei (Nanjing University): Planetary Statistical Studies with LAMOST (98)
- HALLATT, Tim (MIT): Shedding Light on Desert Dwellers (202)
- WANG, Xian-Yu (Indiana University): Distinct Eccentricity - Stellar Obliquity Trends in Three Gas-Giant Mass Regimes (199)

12:25 – 14:00 Lunch

14:00 – 15:40 (100 min) **Protostars and Protoplanets**

(Chair: Josh Winn)

- OHASHI, Nagayoshi (ASIAA): Demographics of Embedded Disks: New Insights into the Earliest Stages of Planet Formation (196)
- STOLKER, Tomas (Leiden University): Direct imaging discovery of a young giant planet orbiting on Solar System scales (130)
- JIANG, Haochang (MPIA): Catching the Tail of a Runaway-Accreting Protoplanet Candidate (263)
- LI, Zhuhai (Department of Astronomy, School of Physics, Peking University): A VLT/MUSE Survey for Accreting Planets in 75 Protoplanetary Disks (73)
- JIANG, Lillian (BOWLER, B.) (UCSB): Accretion Light Echoes and H α Variability of a Protoplanet Candidate (288)
- MASSET, Frederic (Universidad Nacional Autónoma de México): Planetary accretion in the vicinity of dusty rings (185)
- CHOKSI, Nick (Caltech): Directly imaging runaway accretion (286)
- ZHOU, Yifan (University of Virginia): Time-Resolved Observations of Directly Imaged Exoplanets: A New Perspective in Probing Planet Formation (115)

15:40 – 16:10 Coffee Break

16:10 – 17:50 (100 min) **Disks I**

(Chair: Eugene Chiang)

- HENNING, Thomas (Max Planck Institute for Astronomy): Towards the Characterization of the Rocky Planet Sites in Disks (18)
- LONG, Feng (PKU): Chemical Evolution in the Inner Regions of Protoplanetary Disks around Very Low-Mass Stars (201)
- QIAN, Yansong (University of Toronto): Bouncing 100 micron Grains Keep Protoplanetary Disks Bright (111)
- WU, Yanqin (University of Toronto): The small grain hypothesis – emission model for the HD 169142 disk (99)
- VOROBYOV, Eduard (University of Vienna): On the hidden mass of dust in young protoplanetary disks (9)
- LI, Zhi-Yun (University of Virginia): Dust Polarization in Protoplanetary Disks: A Probe of Grain Growth and Kinematics (61)
- YANG, Haifeng (Zhejiang University): Probing Magnetic Fields in Protoplanetary Disks with Near-IR Polarimetry (87)
- MA, Jie (Institut de Planétologie et d'Astrophysique de Grenoble): Probing Planet-forming Dust with Polarimetry: HD100453 and Beyond (53)

TUESDAY

08:30 – 10:15 (105 min) **Rocky Planets**

(Chair: Xianyu Tan)

- KREIDBERG, Laura (MPIA): Charting the cosmic shoreline with JWST (293)
- KOLL, Daniel (Peking University): How to interpret secondary eclipses of tidally-locked rocky exoplanets (28)

- MENDONCA, Joao Manuel (University of Southampton): Modelling and Seeking Atmospheres of Hot Terrestrial Planets (110)
- YANG, Jun (Peking University): Ocean circulation on synchronously-rotating lava Worlds (285)
- DING, Feng (Peking University): Retention of Surface Water on Tidally Locked Rocky Planets in the Venus Zone around M Dwarfs (5)
- FARHAT, Mohammad (University of California, Berkeley): Lava tides on short period exoplanets (119)
- DONG, Chuanfei (Boston University): Linking Core-Induction Effects to Atmospheric Escape in Rocky Exoplanets (105)
- KANG, Wanying (MIT): Escaping Outflows from Disintegrating Exoplanets: Day-side versus Night-side Escape (7)

10:15 – 10:45 Coffee Break

10:45 – 12:25 (100 min) **From Rocky Planets to Sub-Neptunes**

(Chair: Giovanna Tinetti)

- LICHTENBERG, Tim (University of Groningen): Magma ocean worlds as constraints on exoplanet geophysics and atmospheric formation (26)
- NIXON, Matthew (Arizona State University): Examining the role of magma oceans in shaping sub-Neptune atmospheres (290)
- MODIRROUSTA-GALIAN, Darius (TDLI/SJTU): On the formation of water oceans in rocky exoplanets with hydrogen atmospheres (35)
- GUPTA, Akash (Princeton University): The Fate of Hydrogen and Helium: from rocky planetesimals to Earth- and Neptune-like worlds (81)
- VISSAPRAGADA, Shreyas (Carnegie Observatories): Towards Precise Constraints on Atmospheric Evolution for 50 Sub-Neptunes (25)
- JENKINS, James (Universidad Diego Portales): LTT9779b as a Unique Laboratory to Understand Survivability in the Neptune Desert (289)
- KUROKAWA, Hiroyuki (The University of Tokyo): Primary-secondary atmospheric transition of sub-Neptunes: implications for helium depletion and the radius valley (234)
- OWEN, James (Imperial College London): The Origins of Close-in Neptunes (172)

12:25 – 14:00 Lunch

14:00 – 15:35 (95 min) **Dynamics and Resonances**

(Chair: Fabo Feng)

- DAI, Fei (University of Hawaii): Resonant Chains as the Initial Configuration of Kepler-like Planetary Systems (283)
- WANG, Mutian (Nanjing University): An Adolescent, Near-Resonant Planetary System Near the End of Photoevaporation (276)
- JIANG, Ing-Guey (National Tsing Hua University): Resolving the Formation Puzzles of K2-19 Planets through a Decade of Transit Photometry (33)
- TRIFONOV, Trifon (Landessternwarte, Heidelberg): Warm Giant Exoplanets with Strong Transit Timing Variations (192)
- IDA, Shigeru (Science Tokyo): Outward Migration of a Gas-Accreting Planet: A Semi-Analytical Formula (39)

- LI, Yaping (Shanghai Astronomical Observatory): Planet migration and mean motion resonances in protoplanetary disks: theory and observational implications (255)
- GUO, Kangrou (Tsung-Dao Lee Institute): Disrupting Resonances: The Impact of Cold Jupiter Scattering on Inner Mean Motion Resonances (236)
- TAMAYO, Daniel (Harvey Mudd College): Why are high-order mean motion resonances weak? A geometric answer (284)

15:35 – 17:35 **Poster Session I**

WEDNESDAY

8:30 – 10:15 (105 min) **From Sub-Neptunes to Giant Planets**
(Chair: Darius Modirrousta-Galian)

- MADHUSUDHAN, Nikku (University of Cambridge): Atmospheric Diversity in the Sub-Neptune Regime (292)
- HU, Renyu (The Pennsylvania State University): JWST observations of the cornerstone temperate sub-Neptune K2-18 b (84)
- WHEATLEY, Peter (University of Warwick): Detection and atmospheric characterization of temperate Jupiters with NGTS, TESS and JWST (243)
- ZHANG, Yapeng (California Institute of Technology): Phase-resolved atmospheric dynamics and first detection of hydrogen emission in an ultra-hot Jupiter (72)
- TAN, Xianyu (TDLI): Do Super Jupiters Look Like Jupiter? Not Necessarily. - A General Circulation Study for a Planetary-mass Companion (299)
- ZHANG, Xi (University of California Santa Cruz): Are Alkali Metals depleted in Jupiter? (85)
- ZHANG, Zhoujian (University of Rochester): Challenges and Promises of Atmospheric Characterization for Self-Luminous Exoplanets, Brown Dwarfs, and M Dwarf Stars (181)
- JONES, Hugh (University of Hertfordshire): Towards an optical line list for methane (281)

10:15 – 10:45 Coffee Break

10:45 – 12:15 (90 min) **Dynamics and Evolution**
(Chair: Jilin Zhou)

- ZHU, Wei (Tsinghua University): Multiplicity of giant planet systems (200)
- YANG, Eritas (Princeton University): An Analytical Model for the Eccentricity Cascade: Hot Jupiter Formation via S-type Instability (296)
- LIU, Shangfei (Sun Yat-sen University): The Fate of Tidally Disrupted Gas Giants: Dynamical Evolution and Observational Implications (257)
- DONG, Jiayin (University of Illinois Urbana-Champaign): Planet-Planet Scattering Explains the Origin of Warm Jupiters (114)
- Wang Su (PMO): The Role of Planetary Mass Loss in Shaping Orbital Inclinations and Eccentricities (174)
- LU, Tiger (Flatiron): Oblique Exorings Masquerading as a Puffy Planet – The Dynamical History of HIP 41378f (315)
- O'CONNOR, Christopher (CIERA, Northwestern University): Old New Worlds: Reconstructing the history of a white-dwarf exoplanet (273)

- WEI, Xing (Beijing Normal University): Magnetic field and tide of star and planet (37)

12:15 – 14:00 Lunch

14:00 – 15:35 (95 min) **Stars**

(Chair: Subo Dong)

- WANG, Songhu (Indiana University): A New Obliquity Kraft Break at ~6500 K (113)
- LECOANET, Daniel (Northwestern University): Efficient tidal dissipation via stellar magnetic fields (71)
- DEWBERRY, Janosz (University of Massachusetts Amherst): Binary asynchronization and circularization by tidally driven inertial waves (166)
- LI, Yaguang (University of Hawaii): Timing the Stellar and Substellar Evolution with Radial-Velocity Asteroseismology (277)
- ONG, Joel (University of Sydney): Core-Envelope Misalignment in Kepler-56: Implications for Planet Formation and Evolution (226)
- SU, Yubo (Princeton Univ): A Differentially Rotating Star Suggests a Dynamically Exciting Past (280)
- ZANAZZI, John (Pennsylvania State University): Diary of a Teenage Super-Jupiter (132)

15:35 – 15:45 Short Break

15:45 – 16:50 (65 min) **Solar System**

(Chair: Jianghui Ji)

- LASKAR, Jacques (IMCCE, Observatoire de Paris): Recovering the orbital motion of the planets in the solar system through sedimentary geological records (298)
- CHIANG, Eugene (UC Berkeley): Chondritic meteorites, 覆水难收? (272)
- DENG, Hongping (SHAO): A New Perspective: Interior Structures as Constraints for Terrestrial Planet Formation in the Solar System (60)
- LI, Rixin (University of California Berkeley): Cold Classical Kuiper Belt Objects as Primordial Planetesimals (229)
- CHENG, Sihao (IAS/Perimeter/TDLI): A Dwarf Planet on an Extremely Wide Orbit (311)

16:55 – Take Shuttle to TDLI

17:25 – 18:25 Reception at TDLI

18:25 – Take Shuttle to Restaurant

18:40 – 21:00 Banquet

21:00 – Take Shuttle back to Conference Hotel

THURSDAY

08:30 – 10:15 (105 min) **Disks II**

(Chair: Thomas Henning)

- ARMITAGE, Philip (CCA, Flatiron Institute): Predictions for circumplanetary disk structure (133)

- HUANG, Jane (Columbia University): Protoplanetary disk substructures across different environments (65)
- LEE, Eve (UC San Diego): Leaky Traps and Small Grains in Ringed Protoplanetary Disks (138)
- BI, Jiaqing (Max Planck Institute for Astronomy): Substructures induced by dust-drag in protoplanetary disks (252)
- DONG, Ruobing (Peking University): Shadow Variability in Disks: A Multi-Epoch Sample Study with VLT/SPHERE Scattered-Light Imaging (68)
- ZHANG, Shangjia (Columbia University): Shadow Induced Warps in Protoplanetary Disks (83)
- LI, Jiaru (CIERA - Northwestern University): Steady Warps in Protoplanetary Disks: Linear, Nonlinear, and Breaking (175)
- HAN, Yinuo (Caltech): The high-resolution radial structure of debris disks in the ARKS ALMA program (59)

10:15 – 10:45 Coffee Break

10:45 – 12:25 (100 min) **Planet Formation Theory I**

(Chair: Zhaohuan Zhu)

- JOHANSEN, Anders (Globe Institute, University of Copenhagen): Formation of rocky planets, super-Earths and sub-Neptunes via pebble accretion (58)
- ERIKSSON, Linn (Stony Brook): Planetesimal formation via the streaming instability persists under self-consistent MRI turbulence (168)
- TAN, Jonathan (Chalmers Univ. & Univ. of Virginia): Inside-Out Planet Formation (256)
- BITSCH, Bertram (University College Cork): Constraining the formation history of giant planets (27)
- ORMEL, Chris (Tsinghua University): From Planetesimals to Dwarf Planets by Pebble Accretion (143)
- LIU, Beibei (Zhejiang University): Modeling planet formation and the dependence on stellar host properties (11)
- WANG, Haiyang (University of Copenhagen): Hybrid accretion of rocky planets imprinted in volatile depletion (48)

12:25 – 14:00 Lunch

14:00 – 15:15 (75 min) **Chemical Signatures / Interstellar Objects**

(Chair: Masahiro Ogihara)

- YU, Jie (Nanjing University): Co-natal stars depleted in refractories are magnetically more active - possible imprints of planets (287)
- LIU, Fan (NAOC): Stellar Chemical Signatures of Planetary Ingestion and Planet Formation (232)
- SUN, Qinghui (TDLI): Chemical Imprints of Planet Formation in the Atmospheres of Solar Twins/Analogues (74)
- XU, Siyi (ISSI, Bern): Planetary Systems in Wide Binaries Probed by Polluted White Dwarfs (103)
- SELIGMAN, Darryl (Michigan State University): 3I/ATLAS: The Third Interstellar Interloper (89)
- LAU, Jun Yan (Tsung Dao Lee Institute, Shanghai Jiao Tong University): Can gravitational scattering describe the kinematics of interstellar objects and free floating planets? (169)

15:15 – 16:45 **Poster Session II**

16:45 – 18:00 (75 min) **Free-Floating Planets**

(Chair: Jian Ge)

- LUHMAN, Kevin (The Pennsylvania State University): A JWST Survey for Free-floating Brown Dwarfs Down to the Mass of Jupiter (10)
- NAYAKSHIN, Sergei (University of Leicester): Simulations of coeval binary star and Free Floating Planet formation (129)
- DONG, Subo (PKU): Exploring Free-Floating Planets with Space-based Microlensing (160)
- YANG, Hongjing (Westlake University): Microlensing Surveys for Free-Floating Planets: From Ground to Space (253)
- DEROCCO, William (University of Maryland, College Park): Rogue worlds in the era of Roman (100)

FRIDAY

08:30 – 10:20 (110 min) **Young Planets / Multiple-Star Systems**

(Chair: A-M Lagrange)

- FEINSTEIN, Adina (Michigan State University): The Atmospheres of Young Planets Orbiting Active Stars with JWST (90)
- GILLEN, Edward (Queen Mary University of London): Probing the early evolution of planetary systems (270)
- WATANABE, Noriharu (The University of Tokyo): Discovery of an Eccentric Hot Super-Jupiter Transiting the Edge of an Early-A-type star (238)
- NARITA, Norio (The University of Tokyo): Detections of new young transiting planets with the MuSCAT series (128)
- DUPUY, Trent (Institute for Astronomy, University of Edinburgh): Orbital Architectures of Planet-Hosting Binaries & Triples (291)
- LEE, Man Hoi (The University of Hong Kong): Exoplanets in Binary Star Systems (217)
- BAYCROFT, Thomas (T.D. Lee Institute): Circumbinary planets from radial velocities: results and sample comparisons (46)
- SMALLWOOD, Jeremy (University of Oklahoma): How stellar multiplicity shapes disc evolution and planet formation (131)
- RICE, Malena (Yale University): Exoplanet-Hosting Binary Systems as a Probe of Determinism in Planet Formation (250)

10:20 – 10:50 Coffee Break

10:50 – 12:10 (80 min) **Planet Formation Theory II**

(Chair: Phil Armitage)

- ZHU, Zhaohuan (University of Nevada Las Vegas): Magnetospheric Accretion of Young Stars and Formation of Close-in Planets (23)

- DELAGE, Timmy (Imperial College London): Formation of planetary cores in spontaneously generated long-lived dust traps during the secular evolution of magnetized protoplanetary disks (261)
- LIN, Min-Kai (ASIAA): Convection in protoplanetary disks: friend or foe? (55)
- LAIBE, Guillaume (ENS de Lyon): Topological discoseismology of pressure bumps and dips. (184)
- PFEIL, Thomas (Flatiron Institute): Fragmentation-enhanced Leaking of Dust Through Planet-Induced Gaps (15)
- KOKUBO, Eiichiro (National Astronomical Observatory of Japan): Orbital Architecture of Planetary Systems Formed by Gravitational Scattering and Collisions (209)
- OGIHARA, Masahiro (TDLI, Shanghai Jiao Tong University): Formation of super-Earths from a ring and resonance disruption by outer eccentric embryos (139)

12:10 – 13:45 Lunch

13:45 – 15:15 (90 min) **Future Projects**

(Chair: Shude Mao)

- GE, Jian (SHAO): The Earth 2.0 (ET) Space Mission
- TINETTI, Giovanna (King's College London): Towards a chemical survey of exoplanets (297)
- BUCHHAVE, Lars A. (DTU Space, Technical University of Denmark): The Second Earth Spectrograph (2ES) (251)
- PALLE, Enric (Instituto de Astrofísica de Canarias): Unveiling the Heavenly River's other shores: Characterizing exoplanet atmospheres with ANDES (16)
- WANG, Sharon Xuesong (Tsinghua University): Exploring Exoplanetary Systems from the Perspective of the Solar System: CHORUS Spectrograph (242)
- GAUDI, Scott (Ohio State Univ): A Galactic Exoplanet Census with the Roman Space Telescope (57)

15:15 – 15:45 (30 min): **Panel (TBD) & End of Meeting**

END