

# Judit Szulágyi

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## Research Interest

Planet Formation, Satellite Formation, Circumplanetary Disks, Circumstellar Disks, Exoplanets, Astrobiology

## Education

- PhD in Astrophysics, University of Nice Sophia Antipolis, Nice, France (Sept 2012 - Dec 2015)
  - ◊ Capital Fund Management's PhD Fellowship of Excellence
  - ◊ Thesis defense date: November 19, 2015
- M.S. in Astronomy (Honors), Eötvös Loránd University, Budapest, Hungary (Sept 2010 - July 2012)
  - ◊ Visiting Graduate Student at Johns Hopkins University (Baltimore, MD, USA): attended "Extrasolar Planets" course by Prof. Holland Ford (2009-2010 spring term)
- B.S. Physics with Astronomy minor, Eötvös Loránd University, Budapest, Hungary (Sept 2006 - July 2009)

## Research Experience

UNIVERSITY OF ZÜRICH, ZÜRICH, SWITZERLAND

- Junior Group Leader, "Catching Planets in Formation: The Role of Circumplanetary Disks", Swiss National Foundation Ambizione grant (Jan 2018 - Dec 2021)
- Senior Research Associate ("Oberassistentin")
- Associate member of the National Centre of Competence in Research PlanetS research programme, <http://nccr-planets.ch/>
- Member of Guaranteed Time Observations & Science Team of the Spectro-Polarimetric High-contrast Exoplanet REsearch (SPHERE) instrument located on the Very Large Telescope in Chile (June 2016 - )

ETH ZÜRICH, ZÜRICH, SWITZERLAND

- ETH Postdoctoral Fellow studying circumplanetary disks and planet formation (Jan 2016 - Dec 2017)

## OBSERVATOIRE DE LA CÔTE D'AZUR, NICE, FRANCE

- PhD student (Sept 2012 - Dec 2015)
  - ◇ Thesis work: *Gas accretion onto giant planets & circumplanetary disks – giant planet formation with hydrodynamic simulations*  
Supervisors: Alessandro Morbidelli, Frédéric Masset
  - ◇ Other projects: *Migration of planetary embryos, instabilities and planet formation in stellar irradiated disks, dust-gas hydrodynamics*  
Main collaborators: Frédéric Masset, Elena Lega, Alessandro Morbidelli
- Collaboration in the Antarctica Search for Transiting Extrasolar Planets / ASTEP / (March 2011 - 2015)  
Project: *Trend filtering & detection of exoplanets*  
Collaborators: Tristan Guillot and the ASTEP team

## SPACE TELESCOPE SCIENCE INSTITUTE, BALTIMORE, MD, USA

- Research Assistant on NASA contract (Sep 2009 - June 2010)  
Project: *Gas spectroscopy in transitional disks*  
Supervisors: Ilaria Pascucci, Péter Ábrahám

## KONKOLY OBSERVATORY OF HUNGARIAN ACADEMY OF SCIENCES, BUDAPEST, HUNGARY

- Research Assistant (July 2010 - Aug 2012)  
Projects: *Gas component of circumstellar disks, debris disks, moving groups*  
Supervisors: Péter Ábrahám & Attila Moór
- Undergraduate Research Assistant (Jan 2009 - Aug 2009)  
Project: *Interferometry of circumstellar disks around young, tight binaries*  
Supervisor: Péter Ábrahám
- Undergraduate Research Assistant (Oct 2006 - Dec 2008)  
Project: *Application of the Trend Filtering Algorithm on the MACHO database*  
Supervisor: Géza Kovács

## Fellowships &amp; Grants

- *Ambizione Grant* by the Swiss National Science Foundation (Jan 2018 - Dec 2021) - grant for salaries, super-computer time, travel, etc. of 598904 CHF
- *ETH Postdoctoral Fellowship* by ETH Zürich (Jan 2016 - Dec 2017) - fellowship + travel grant of 225700 CHF
- *PhD Fellowship of Excellence* by Capital Fund Management (Sept 2012 - Sept 2015)– Bourse JP Aguilar, PhD fellowship + travel grant of 85500 EUR
- Financial support by the COST Action "Origin and Evolution of Life on Earth and in the Universe" to attend the "Summer course on Exoplanets", La Palma, Canary Islands, Spain (2014) – 800 EUR
- Financial support by the European Space Agency for attending the conference "Protostars and Planets VI" in Heidelberg, Germany (2013) – 350 EUR
- Financial support from NASA Jet Propulsion Laboratory to attend the "Exploring Strange New Worlds" conference in Flagstaff, AZ, US (2011) – 3260 USD
- Research Scholarship by Eötvös University (2008-2009 spring term, 2010-2011 fall & spring terms) – 90000 HUF

## Awards & Prizes

- Forbes list "30 under 30 in Science" (2017)
- *Outstanding Student of the Faculty of Sciences* award by the Eötvös University (2012)
- *Pro Scientia Golden Medal* in Physics-Mathematics-Earth Sciences by the Hungarian Academy of Sciences (2011)
- First prize on *Hungarian National Contest of Young Scientists* (2009)
- First prize on "Catch a Star! 2005-2006" international high-school student contest by European Southern Observatory → Prize: visit the Very Large Telescope in Chile – August, 2006

## Selected Press Coverage

- "How planets like Jupiter form" – Phys.org
- "Preventing stars from eating their young" – Nature News
- "To trace a gas giant's birth, take its temperature" – Cosmos Magazine
- "Mystery of Gas Giant Planets' Death Spiral May Be Solved" – Space.com
- "Secret Recipe Book for Cooking Jupiters Revealed" – Discovery News

## Teaching & Supervising

- Co-supervising PhD student, Marco Cilibrasi (with Prof. Lucio Mayer at Univ. Zürich; 2018 Sep –)
- Co-supervising Master student, Fabian Binkert (with Prof. Hans-Martin Schmid at ETH Zürich; 2018 Sep –)
- Co-supervising Master student, Cassandra Inderbitzi (with Prof. Lucio Mayer at Univ. Zürich; 2018 Oct –)
- Co-supervising undergraduate student, Siri Dobler (with Prof. Hans-Martin Schmid at ETH Zürich; 2018 Sep – 2018 Dec)
- Co-supervising undergraduate student, Evert Nasdekin (with Prof. Hans-Martin Schmid at ETH Zürich; 2018 Oct – 2019 Jan)
- Co-supervising Master student, Marco Cilibrasi (with Prof. Lucio Mayer at Univ. Zürich; 2017 Jan - 2018 Aug)
- Mentoring a PhD student, Hongping Deng (with Prof. Lucio Mayer at Univ. Zürich; 2017 Jan - 2017 July)
- Co-supervising undergraduate student, Cassandra Inderbitzi (with Prof. Lucio Mayer at Univ. Zürich; 2017 Oct - 2018 Sep)
- Teaching Assistant „Astrophysics III: Galactic Astrophysics" by Hans-Martin Schmid at ETH Zürich (2016-17 spring term)
- Guest lecturer on „Computational Astrophysics" course by Lucio Mayer at Univ. Zürich (2018-19 fall term)
  - ◊ in addition, developed the course material on radiative transfer (lecture + exercise)
- Guest lecturer on „Exoplanets" course by Sascha Quanz at ETH Zürich (2016-17 spring term, 2017-18 spring term)
  - ◊ in addition, developed the course material on planet formation (2 lectures)

## Activity & Service

- Reviewer for Monthly Notices of the Royal Astronomical Society, Astronomy & Astrophysics
- Scientific Organization Committee member for the Symposium "Protoplanetary disks: the birth places of planets", EWASS, Lyon, France, 2019 June
- Exhibition about my research at "Expedition Solar System" in ETHZ, 2018 March - 2019 June  
<http://www.focusterra.ethz.ch/en/special-exhibitions/current.html>
- Elected member of the hiring committee of a professor at ETH Zürich in star and planet formation (Aug 2016 - )
- Panel speaker at "She Started It" event of women in STEM fields at ETH Zürich (May 30, 2017)
- Scientific Organization Committee member for the conference "Carving through the Codes: Challenges in Computational Astrophysics", Feb 2017, Davos, Switzerland
- Elected student delegate of the Scientific Council at University of Nice (Apr 2014 - Apr 2015)
- Co-founder and co-organizer of *Astrobiology Journal Club* at Johns Hopkins University (Sept 2009 - Jun 2010)
- Journalism: over 35 outreach articles about astronomy & space research for various astronomical websites (e.g. <http://www.csillagaszat.hu/>; <http://www.urvilag.hu/>)

## Computer Skills

- Programming languages: C, FORTRAN, Tcl, IDL, python, Shell scripts
- Hydrodynamic codes used or developed (in case specified):
  - ◊ JUPITER: co-developed the energy equation and radiative modules
  - ◊ FARGO3D
  - ◊ FARGOCA

## Language Skills

- English - fluent
- French - intermediate
- German - basic
- Hungarian - native

## Selected Observational Proposals

- PI on "The First Detection of the Circumplanetary Disk with ALMA" – Atacama Large Millimeter Array Cycle 5
- Co-I on "First ALMA observations of young circumplanetary disks" – Atacama Large Millimeter Array Cycle 3 (PI: J. Pineda)
- Co-I on "A census of debris disks in nearby young moving groups with Herschel" – Herschel Space Observatory OT2 (PI: A. Moór)
- Co-I on "Spatially resolved far-infrared imaging of bright debris disks: studying the disk structure and the stirring mechanism." – Herschel Space Observatory OT1 (PI: P. Ábrahám)

## Professional Development and Summer/Winter Schools

- "Science Communication" – Zürich, Switzerland, (Sep 4, 2017)
- "How to write a convincing CV" – Bern, Switzerland, (Oct 2, 2016)
- Summer course on Exoplanets, La Palma, Canary Islands (Sept 24 - Oct 2, 2014)
- Chronology of solar system formation V: the first solids and the first planetesimals, Les Houches, France (Feb 10-15, 2013)
- IMPRS Summer School 2011: Characterizing Exoplanets from Formation to Atmospheres, Heidelberg, Germany (August 1-5, 2011)

## Professional Visits

- Collaborating at NASA's Ames Research Center, Moffet Field, CA USA, (July 10-12, 2017)
- Participant of the "Exoplanet Summer Program", Other Worlds Laboratory (OWL) at the University of California, CA, USA (June 26 - July 7, 2017)
- Collaborating at Earth-Life Science Institute, Tokyo, Japan (March 22-31, 2017)
- Collaborating at the Anton Pannekoek Institute of Astronomy, University of Amsterdam, Amsterdam, The Netherlands (Jan 29-31, 2017)
- Collaborating at Institute of Astronomy, University of Cambridge, Cambridge, UK (Apr 25-28, 2016)
- Collaborating at Department of Astronomy, University of Chile, Santiago, Chile (Nov 3-14, 2014)
- Collaborating at Instituto de Ciencias Físicas, UNAM, Mexico (May 25 - June 8, 2014)
- Collaborating at Instituto de Ciencias Físicas, UNAM, Mexico (September 1-21, 2013)
- Collaborating at Observatoire de la Côte d'Azur, Nice, France (March 3 - April 17, 2011)
- Reserach Assistant at Space Telescope Science Institute, Baltimore, MD, USA (Sep 2009 - June 2010)
- Herschel/PACS daily operation at Max Planck Institute for Extraterrestrial Physics, Germany (August 19-23, 2009)
- Collaborating at Leiden Observatory, Netherlands (April 15-22, 2009)

## Conferences, Seminars & Contributions

- Seminar at European Southern Observatory, Munich/Garching, Germany, April 2019 – seminar talk
- Seminar at the University of Arizona, Tucson, AZ, USA, April 2019 – seminar talk
- Seminar at the Princeton University, Princeton, NJ, USA, March 2019 – seminar talk
- "23rd International Microlensing Conference", New York, NY, USA, Jan 2019 – invited talk
- "PLATO Theory Meeting", Cambridge, UK, Dec 2018 – contributed talk
- Seminar at the Arcetri Observatory, Florence, Italy, Nov 2018 – seminar talk
- "Exoplanet Demographics: Observations Confront Planet Formation Theory" PlanetS workshop, Bern, Switzerland, July 2018 – contributed talk

- "Gravitational Instability: unsolved problems in forming planets, brown dwarfs and stellar companions" workshop, Leicester, UK, June 2018 – invited talk
- Seminar at the Geneva Observatory, Geneva, Switzerland, June 2018 – seminar talk
- Seminar at Dept. of Earth Sciences, ETHZ, Zurich, Switzerland, April 2018 – seminar talk
- "Circumplanetary Disks" conference, Nagoya, Japan, March 2018 – invited talk
- "Low-Mass Early Planetary Atmospheres" workshop, Tübingen, Germany, Feb 2018 – invited talk
- PlanetS General Assembly 2018, Grindelwald, Switzerland, Jan 2018 – talk
- "Exoplanets and Planet Formation" conference, Shanghai, China, Dec 2017 – invited talk
- Seminar at Institut de Planétologie et d'Astrophysique de Grenoble, Grenoble, France, Nov 2017 – seminar talk
- Seminar at Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge, Cambridge, UK, Nov 2017 – seminar talk
- "Planet Formation and Evolution 2017" conference, Jena, Germany, Sep 2017 – contributed talk
- Seminar at Institut für Astronomie & Astrophysik/Computational Physics, Universität Tübingen, Germany, July 2017 – seminar talk
- Seminar at NASA's Ames Research Center, Moffet Field, CA USA, July 2017 – seminar talk
- "Exoplanet Summer Program", Other Worlds Laboratory (OWL) at the University of California, CA, USA, June 2017 – talk
- Seminar at University of Zurich, Zurich, Switzerland, Apr 2017 – seminar talk
- Seminar at the Earth-Life Science Institute, Tokyo, Japan, March 2017 – seminar talk
- Seminar at the Department of Physics, University of Milano, Milan, Italy, March 2017 – seminar talk
- Seminar at the Anton Pannekoek Institute of Astronomy, University of Amsterdam, Amsterdam, The Netherlands, Jan 2017 – seminar talk
- PlanetS General Assembly 2017, Grindelwald, Switzerland, Jan 2017 – talk
- Seminar at Institut de Planétologie et d'Astrophysique de Grenoble, Grenoble, France, Dec 2016 – seminar talk
- Seminar at Institute for Research in Astrophysics and Planetology, University of Toulouse, Toulouse, France, Nov 2016 – seminar talk
- "Disk to Planets" workshop Budapest, Hungary, Oct 2016 – invited talk
- Seminar of the Lagrange Laboratory, Observatoire de la Côte d'Azur, Nice, France, Sept 2016 – seminar talk
- "New Directions in Planet Formation" workshop, Leiden, Netherlands, July 2016 – invited talk
- "Exoplanets I" conference, Davos, Switzerland, July 2016 – poster
- PlanetS Meeting, Geneva Observatory, Versoix, Switzerland, May 2016 – talk
- "Resolving Planet Formation in the Era of ALMA and Extreme AO", Santiago, Chile, May 2016 – contributed talk
- Seminar at University of Bern, Center for Habitability, Bern, Switzerland, May 2016 – seminar talk

- Seminar at the Astronomy Unit, Queen Mary University, London, UK, April 2016 – seminar talk
- Seminar at Institute of Astronomy, Cambridge University, Cambridge, UK, April 2016 – seminar talk
- Seminar at University of Zürich, Center for Computational Astrophysics, Zürich, Switzerland, Feb 2016 – seminar talk
- PlanetS General Assembly 2016, Grindelwald, Switzerland, Jan 2016 – talk
- "Extreme Solar Systems III" conference, Hawaii, HI, USA, Dec 2015 – poster
- Seminar at Institute for Astronomy, ETH Zürich, Zürich, Switzerland, Jan 2015 – seminar talk
- "MAD Workshop: protoplanetary disks and the planets they form", Santiago, Chile, Nov 2014 – invited talk
- Seminar at Observatoire de Paris, Meudon, France, June 2014 – seminar talk
- "Planets across the HR Diagram" conference, Cambridge, UK, July 2014 – poster
- Summer course on Exoplanets, La Palma, Canary Islands, Spain, Sept 2014 – short talk & poster
- "Protostars and Planets VI" conference, Heidelberg, Germany, July 2013 – poster
- European Planetary Science Congress 2013, London, UK, Sep 2013 – poster
- Exploring Strange New Worlds, Flagstaff, AZ, USA, May 2011 – poster
- American Astronomical Society meeting, Washington DC, US, Jan 2010 – poster

## Memberships

- Swiss Society for Astrophysics and Astronomy