

Dr. Paola Pinilla

PERSONAL DATA

CURRENT LOCATION: Dept. of Astronomy, University of Arizona.
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EDUCATION

JUL. 2010 **Ph. D. in Astrophysics**, ITA, University of Heidelberg, Germany.
JUL. 2013 Advisor: Prof. Dr. Cornelis P. Dullemond.
Thesis: "Testing models of dust evolution in protoplanetary disks with millimeter observations"

SEP. 2007 **M. Sc. in Physics**, Universidad de los Andes, Colombia.
SEP. 2009 Advisor: Prof. Dr. Jagdish Rai Luthra.
Thesis: "Geometric representation and quantum entanglement in multiple-qubit systems"

JAN. 2003 **B. Sc. in Physics, academic option in Mathematics**,
SEP. 2007 Universidad de los Andes, Colombia.
Advisor: Prof. Dr. Alonso Botero.
Thesis: "Chaotic movement of a charged particle in the Earth's magnetotail"

PROFESSIONAL EXPERIENCE

Nov. 2016 **NASA Hubble Fellow**, Steward Observatory, University of Arizona, USA.
NOW
SEP. 2013 **Postdoctoral Researcher**, Sterrewacht, Leiden University, The Netherlands.
OCT. 2016
JUL. 2010 **Graduate Student**, University of Heidelberg, Germany.
JUL. 2013
MAY 2010 **Summer Intern Student**, European Southern Observatory (ESO), Germany.
JUL. 2010

REFEREED JOURNAL PUBLICATIONS (ATTACHED FILE)

First Author Publications	Thirteen papers and one review for a book chapter.
Second/Third Author publications	Nineteen papers (six from direct co-supervision of Ph.D. projects)
Other Co-author publications	Twelve papers.
Total Publications (11.2017)	Forty Five.

SUPERVISION AND TEACHING EXPERIENCE

- APR. 2017 Invited Lecture on Research Ethics, Class: Advanced Extra Galactic Astronomy, University of Arizona, USA.
- MAR. 2017 Lecture on Planet Formation, Class: Natural Sciences- Stars & Planets, University of Arizona, USA.
- JAN. 2017 Co-supervision of a PhD project, student: Michael Hammer
NOW University of Arizona *Primary advisor: Prof. Kaitlin Kratter*, USA.
- MAY. 2017 Co-supervision of a PhD project, student: Nathan Hendler
NOW University of Arizona, *Primary advisor: Prof. Ilaria Pascucci*, USA.
- AUG. 2014 M.Sc. Research project supervision, student: Nicola Kroon
AUG. 2015 Leiden University, The Netherlands.
- JUN. 2014 Summer Research project supervision (LEAPS program), student: Aoife Boyle
AUG. 2014 Leiden University, The Netherlands.
- OCT. 2013 M.Sc. research project supervision, student: Roman Tatch
OCT. 2014 Leiden University, The Netherlands.
- OCT. 2012 M.Sc. research project co-supervision, student: Adriana Pohl
OCT. 2013 University of Heidelberg, Germany.
- APR. 2011 Teaching Assistant, 2 hours per week, Class: Observational Astronomy,
AUG. 2011 University of Heidelberg, Germany.
- SEP. 2009 Part-time Lecturer, 14 hours per week, Different Practice Classes in Physics,
MAY 2010 Universidad de los Andes, Colombia.
- SEP. 2007 Graduate Teaching Assistant, 8 hours per week, Different Practice Classes in Physics
SEP. 2009 Universidad de los Andes, Colombia.

OBSERVATIONAL EXPERIENCE

- Principal Investigator of Accepted Proposals for: ALMA, VLT/SPHERE, PdBI.
- Co-Investigator of Accepted Proposals for ALMA, HST, PdBI, CARMA, VLT/NACO, VLT/SPHERE, VLT/CRIRES, VLA, ATCA.

SELECTED HONORS AND AWARDS

- NASA Hubble fellowship 2016.
- ESO (3 years) and CITA (5 years) fellowships 2016 (*declined*).
- NOVA Grant: to organize a Lorentz workshop, March 2015.
- Patzer Prize for one of the best publications by a young scientist at MPIA/ZAH in 2012.
- Graduate Research Fellowship, International Max Planck Research School, Germany.

SERVICE

- Initiator and organizer of the conference: “Star and Planet Formation (SPF2) in the South-West”, to be held at the Biosphere 2 Center in Oracle, Arizona, March 2018.
- Initiator, SOC, and co-chair of the Lorentz workshop: “Transition Disks and Planet Formation”, Leiden Observatory, March 2015, The Netherlands.
- Referee for: ApJ, ApJL, A&A (papers and letters), MNRAS, PASJ, RMxAA, Planetary and Space Science (Elsevier), and Astrophysics and Space Science (Springer).
- Panelist for the Emerging Worlds Program (NASA). Reviewer of grant proposals for: (a) NASA Exoplanets Research Program (XRP), (b) Natural Sciences and Engineering Research Council of Canada (NSERC), (c) National Commission for Scientific and Technological Research (CONICYT), and (d) French National Research Agency (ANR).

SELECTED TALKS IN THE LAST TWO YEARS

(TOTAL NUMBER OF TALKS IN THE LAST 6 YEARS: ~60)

- OCT. 2017 (*invited*) National Astronomical Conference Colombia (COCOA), Colombia
SEP. 2017 Planet Formation and Evolution 2017, Jena, Germany.
SEP. 2017 (*invited*) Star and Planet Formation Seminar, Rice University, USA.
SEP. 2017 Physics Colloquium, University of Arizona, USA.
JUN. 2017 (*invited*) Gordon Conference: Origins of the Solar Systems, USA.
MAY. 2017 Star and Planet Formation Seminar, University of Michigan, USA.
MAR. 2017 Hubble Symposium, Space Telescope Science Institute, USA.
MAR. 2017 (*invited*) Symposium on Galactic Astrophysics, ETH, Switzerland.
FEB. 2017 (*invited*) Stars & Planets Seminar, ITC Seminar at CfA- Harvard, USA.
DEC. 2016 Origins Seminar, University of Arizona, USA.
NOV. 2016 (*invited*) Astrophysical Colloquium, University of Colorado, USA.
JUN. 2016 (*invited*) Two talks in the workshop: Origins of Habitable Planets, Sweden.
MAY. 2016 (*invited*) Resolving planet formation in the era of ALMA and extreme AO, Chile.
APR. 2016 (*invited*) Workshop Formation, Evolution, and Dynamics of Young Solar Systems, Spain.
FEB. 2016 (*invited*) Special Colloquium, MPIfR/Bonn, Germany.
NOV. 2015 (*invited*) Seminar talk, ETH, Switzerland.
NOV. 2015 (*invited*) Seminar talk, Bern University, Switzerland.
OCT. 2015 (*invited*) Astronomical Colloquium, MPIA, LSW, and ZAH, Germany.
AUG. 2015 (*invited*) Division H Interstellar Matter and Local Universe, IAU General Assembly, USA.
AUG. 2015 FM 1: Dynamical problems in extrasolar planets science, IAU General Assembly, USA.
AUG. 2015 (*invited*) Seminar talk, Harvard-Smithsonian Center for Astrophysics, USA.
JUN. 2015 Disc dynamics and planet formation, Cyprus.
MAR. 2015 (*invited*) Science Coffee, Space Telescope Science Institute, USA.
MAR. 2015 (*invited*) Solar System Exploration Seminars, Goddard Space Flight Center, USA.
MAR. 2015 Star and planet formation in the Southwest I, USA.
JAN. 2015 (*invited*) Seminar, Amsterdam University, The Netherlands.
JAN. 2015 (*invited*) SSO Seminars, ESTEC/ESA, The Netherlands.

List of Publications

h-index: 18, total citations: \sim 1300, year of first publication: 2012

Publications with Peer Review Process

FIRST AUTHOR PUBLICATIONS

14. **Pinilla**, Quiroga-Nuñez, Benisty, Natta, Ricci, Henning, van der Plas, Birnstiel, Testi, Ward-Duong: *Millimeter spectral indices and dust trapping by planets in brown dwarf disks*, ApJ (2017), 846, 70.
13. **Pinilla** and Youdin: *Particle Trapping in Protoplanetary Disks: Models vs. Observations*, in: Pessah M., Gressel O. (eds.) *Formation, Evolution, and Dynamics of Young Solar Systems*. Astrophysics and Space Science Library, vol. 445. Springer, Cham.
12. **Pinilla**, Pohl, Stammler, Birnstiel: *Dust Density Distribution and Imaging Analysis of Different Ice Lines in Protoplanetary Disks*, ApJ (2017) vol. 845, 68.
11. **Pinilla**, Pérez, Andrews, van der Marel, van Dishoeck, Ataiee, Benisty, Birnstiel, Juhász, Natta, Ricci, and Testi: *A Multi-wavelength Analysis of Dust and Gas in the SR 24S Transition Disk*, ApJ (2017) vol. 839, 99.
10. **Pinilla**, Flock, de Juan Ovelar, and Birnstiel: *Can dead zones create structures like a transition disk?*, A&A (2016) vol. 596, A81.
9. **Pinilla**, Klarmann, Birnstiel, Benisty, Dominik, and Dullemond: *A tunnel and a traffic jam: How transition disks maintain a detectable warm dust component despite the presence of a large planet-carved gap*, A&A (2016) vol. 585, A35.
8. **Pinilla**, de Boer, Benisty, Juhász, de Juan Ovelar, Dominik, Avenhaus, Birnstiel, Girard, Huelamo, Isella, and Milli: *Variability and dust filtration in the transition disk J160421.7-213028 observed in optical scattered light*, A&A (2015) vol. 584, L4.
7. **Pinilla**, van der Marel, Pérez, van Dishoeck, Andrews, Birnstiel, Herczeg, Pontoppidan, and van Kempen: *Testing particle trapping in transition disks with ALMA*, A&A (2015) vol. 584, A16.
6. **Pinilla**, Birnstiel, and Walsh: *Sequential planet formation in the HD 100546 protoplanetary disk?*, A&A (2015) vol. 580, A105.
5. **Pinilla**, de Juan Ovelar, Ataiee, Benisty, Birnstiel, van Dishoeck, and Min: *Gas and dust structures in protoplanetary disks hosting multiple planets*, A&A (2015) vol. 573, A9.
4. **Pinilla**, Benisty, Birnstiel, Ricci, Isella, Natta, Dullemond, Quiroga-Nuñez, Henning, and Testi: *Millimetre spectral indices of transition disks and their relation to the cavity radius*, A&A (2014) vol. 564, A51.
3. **Pinilla**, Birnstiel, Benisty, Ricci, Natta, Dullemond, Dominik, and Testi: *Explaining millimeter-sized particles in brown dwarf disks*, A&A (2013) vol. 554, A95.
2. **Pinilla**, Benisty, and Birnstiel: *Ring shaped dust accumulation in transition disks*, A&A (2012) vol. 545, A81.
1. **Pinilla**, Birnstiel, Ricci, Dullemond, Uribe, Testi, and Natta: *Trapping dust particles in the outer regions of protoplanetary disks*, A&A (2012) vol. 538, A114.

SECOND AND THIRD AUTHOR PUBLICATIONS

19. Hendler, **Pinilla**, Pascucci, Pohl, Mulders, Henning, Dong, Clarke, Owen, Hollenbach: *A likely planet-induced gap in the disk around T Cha*, submitted to MNRAS Letters.
18. Facchini, **Pinilla**, van Dishoeck, de Juan Ovelar: *Determining giant planet masses from simultaneous mm continuum and line observations in (transition) disks*, submitted to A&A.
17. Pohl, Benisty, **Pinilla**, Ginski, de Boer, Avenhaus, Henning, Zurlo, Boccaletti, Dominik, Facchini, Fedele, Janson, Keppler, Kral, Langlois, Ligi, Maire, Menard, Pinte, Quanz, Sauvage, Sezestre, Stolker, Szulagyi, van Boekel, van der Plas: *The circumstellar disk HD 169142: gas, dust and planets acting in concert?*, accepted for publication in ApJ.
16. Ricci, Rome, **Pinilla**, Facchini, Birnstiel, Testi: *VLA Observations of the Disk Around the Young Brown Dwarf 2M0444*, ApJ (2017), 846, 19.
15. van der Marel, Cazzoletti, **Pinilla**, and Garufi: *Vortices and Spirals in the HD135344B Transition Disk*, ApJ (2016) vol. 832, 178.
14. Ginski, Stolker, **Pinilla**, Dominik, Boccaletti, de Boer, Benisty, Biller, Feldt, Garufi, Keller, Kenworthy, Maire, Ménard, Mesa, Milli, Min, Pinte, Quanz, van Boekel, Bonnefoy, Chauvin, Desidera, Gratton, Girard, Keppler, Kopytova, Lagrange, Langlois, Rouan, Vigan: *Direct detection of scattered light gaps in the transitional disk around HD 97048 with VLT/SPHERE*, A&A (2016) vol. 595, A112.
13. Kama, **Pinilla**, and Heays: *Spirals in protoplanetary disks from photon travel time*, A&A (2016) vol. 593, L20.
12. Pohl, Kataoka, **Pinilla**, Dullemond, Henning, and Birnstiel: *Investigating dust trapping in transition disks with millimeter-wave polarization*, A&A (2016) vol. 593, A12.
11. de Juan Ovelar, **Pinilla**, Min, Dominik, and Birnstiel: *Constraining turbulence mixing strength in transitional discs with planets using SPHERE and ALMA*, MNRAS (2016) vol. 459, L85-L89.
10. Hogerheijde, Bekkers, **Pinilla**, Salinas, Kama, Andrews, Qi, and Wilner: *Steepening of the 820 μm continuum surface brightness profile signals dust evolution in TW Hydrae's disk*, A&A (2016) vol. 586, A99.
9. Banzatti, **Pinilla**, Ricci, Pontoppidan, Birnstiel, and Ciesla: *Direct Imaging of the Water Snow Line at the Time of Planet Formation using Two ALMA Continuum Bands*, ApJL (2015) vol. 815, L15.
8. Birnstiel, Andrews, **Pinilla**, and Kama: *Dust Evolution Can Produce Scattered Light Gaps in Protoplanetary Disks*, ApJL (2015) vol. 813, L14.
7. Pohl, **Pinilla**, Benisty, Ataiee, Juhász, Dullemond, Van Boekel, and Henning: *Scattered light images of spiral arms in marginally gravitationally unstable discs with an embedded planet*, MNRAS (2015) vol. 453, 1768-1778.
6. Kama, Folsom, and **Pinilla**: *Fingerprints of giant planets in the photospheres of Herbig stars*, A&A (2015) vol. 582, L10.
5. van der Marel, **Pinilla**, Tobin, van Kempen, Andrews, Ricci, and Birnstiel: *A Concentration of Centimeter-sized Grains in the Ophiuchus IRS 48 Dust Trap*, ApJL (2015) vol. 810, L7.
4. Dipierro, **Pinilla**, Lodato, and Testi: *Dust trapping by spiral arms in gravitationally unstable protostellar discs*, MNRAS (2015) vol. 451, 974-986.

3. Walsh, Juhász, **Pinilla**, Harsono, Mathews, Dent, Hogerheijde, Birnstiel, Meeus, Nomura, Aikawa, Millar, and Sandell: *ALMA Hints at the Presence of two Companions in the Disk around HD 100546*, ApJL (2014) vol. 791, L6.
2. Ataiee, **Pinilla**, Zsom, Dullemond, Dominik, and Ghanbari: *Asymmetric transition disks: Vorticity or eccentricity?*, A&A (2013) vol. 553, L3.
1. Birnstiel, Dullemond, and **Pinilla**: *Lopsided dust rings in transition disks*, A&A (2013) vol. 550, L8.

OTHER CO-AUTHOR PUBLICATIONS

12. Ligi, Vigan, Gratton, de Boer, Benisty, Quanz, Meyer, Ginski, Sissa, Henning, Beuzit, Boccaletti, Biller, Bonnefoy, Chauvin, Cheetham, Cudel, Delorme, Desidera, Feldt, Galicher, Girard, Janson, Kasper, Kopytova, Lagrange, Langlois, Lecoroller, Mesa, Maire, Peretti, Perrot, **Pinilla**, Pohl, Rouan, Stolker, Samland, Wahhaj, Wildi, Zurlo: *Investigation of the inner structures around HD169142 with VLT/SPHERE*, accepted for publication in MNRAS.
11. Bayo, Joergens, Liu, Brauer, Olofsson, Arancibia, **Pinilla**, Wolf, Ruge, Henning, Natta, Johnston, Bonnefoy, Beuther, Chauvin: *First Millimeter Detection of the Disk around a Young, Isolated, Planetary-mass Object*, ApJL (2017) vol. 841, L11.
10. Carmona, Thi, Kamp, Baruteau, Matter, van den Ancker, Pinte, Kóspál, Audard, Liebhart, Sicilia-Aguilar, **Pinilla**, Regály, Güdel, Henning, Cieza, Baldovin-Saavedra, Meeus, Eiroa: *A gas density drop in the inner 6 AU of the transition disk around the Herbig Ae star HD 139614. Further evidence for a giant planet inside the disk?*, A&A (2017) vol. 598, A118.
9. Benisty, Stolker, Pohl, de Boer, Lesur, Dominik, Dullemond, Langlois, Min, Wagner, Henning, Juhasz, **Pinilla**, Facchini, Apai, van Boekel, Garufi, Ginski, Ménard, Pinte, Quanz, Zurlo, Boccaletti, Bonnefoy, Beuzit, Chauvin, Cudel, Desidera, Feldt, Fontanive, Gratton, Kasper, Lagrange, LeCoroller, Mouillet, Mesa, Sissa, Vigan, Antichi, Buey, Fusco, Gisler, Llored, Magnard, Moeller-Nilsson, Pragt, Roelfsema, Sauvage, Wildi: *Shadows and spirals in the protoplanetary disk HD 100453*, A&A (2017) vol. 597, A42.
8. de Boer, Salter, Benisty, Vigan, Boccaletti, **Pinilla**, Ginski, Juhasz, Maire, Messina, Desidera, Cheetham, Girard, Wahhaj, Langlois, Bonnefoy, Beuzit, Buenzli, Chauvin, Dominik, Feldt, Gratton, Hagelberg, Isella, Janson, Keller, Lagrange, Lannier, Menard, Mesa, Mouillet, Mugaer, Peretti, Perrot, Sissa, Snik, Vogt, Zurlo, and SPHERE Consortium: *Multiple rings in the transition disk and companion candidates around RX J1615.3-3255. High contrast imaging with VLT/SPHERE*, A&A (2016) vol. 595, A114.
7. Wright, Maddison, Wilner, Burton, Lommen, van Dishoeck, **Pinilla**, Bourke, Menard, and Walsh: *Resolving structure of the disc around HD100546 at 7 mm with ATCA*, MNRAS (2015) vol. 453, 414-438.
6. Casassus, Wright, Marino, Maddison, Wootten, Roman, Pérez, **Pinilla**, Wyatt, Moral, Ménard, Christiaens, Cieza, van der Plas: *A Compact Concentration of Large Grains in the HD 142527 Protoplanetary Dust Trap*, ApJ (2015) vol. 812, 126.
5. Lobo Gomes, Klahr, Uribe, **Pinilla**, and Surville: *Vortex Formation and Evolution in Planet Harboring Disks Under Thermal Relaxation*, ApJ (2015) vol. 810, 94.
4. Benisty, Juhasz, Boccaletti, Avenhaus, Milli, Thalmann, Dominik, **Pinilla**, Buenzli, Pohl, Beuzit, Birnstiel, de Boer, Bonnefoy, Chauvin, Christiaens, Garufi, Grady, Henning, Huelamo, Isella, Langlois, Ménard, Mouillet, Olofsson, Pantin, Pinte, Pueyo: *Asymmetric features in the protoplanetary disk MWC 758*, A&A (2015) vol. 578, L6.

3. de Juan Ovelar, Min, Dominik, Thalmann, **Pinilla**, Benisty, and Birnstiel: *Imaging diagnostics for transitional discs*, A&A (2013) vol. 560, A111.
2. Garufi, Quanz, Avenhaus, Buenzli, Dominik, Meru, Meyer, **Pinilla**, Schmid, and Wolf: *Small vs. large dust grains in transitional disks: do different cavity sizes indicate a planet?. SAO 206462 (HD 135344B) in polarized light with VLT/NACO*, A&A (2013) vol. 560, A105.
1. van der Marel, van Dishoeck, Bruderer, Birnstiel, **Pinilla**, Dullemond, van Kempen, Schmalzl, Brown, Herczeg, Mathews, and Geers: *A Major Asymmetric Dust Trap in a Transition Disk*, Science (2013) vol. 340, 1199-1202.

Publications without Peer Review Process

5. van der Marel, van Dishoeck, Bruderer, **Pinilla**, van Kempen, Perez, Isella (2016): *Gas Cavities inside Dust Cavities in Disks Inferred from ALMA Observations*, Young Stars & Planets Near the Sun, Proceedings of the International Astronomical Union, IAU Symposium, Volume 314, pp. 139-142
4. van Dishoeck, van der Marel, Bruderer, **Pinilla** (2015): *Quantifying the Gas Inside Dust Cavities in Transitional Disks: Implications for Young Planets*, Revolution in Astronomy with ALMA: The Third Year. Proceedings of a Conference held at the Tokyo International Forum, Tokyo, Japan 8-11 December 2014. Edited by Daisuke Iono, Ken-ichi Tatematsu, Alwyn Wootten, and Leonardo Testi. ASP Conference Series Vol. 499. San Francisco: Astronomical Society of the Pacific, 2015, p.281
3. van der Marel, van Dishoeck, Bruderer, Birnstiel, **Pinilla**, Dullemond, van Kempen, Schmalzl, Brown, Herczeg, Mathews, Geers (2014): *Planet formation in action: resolved gas and dust images of a transitional disk and its cavity*, Exploring the Formation and Evolution of Planetary Systems, Proceedings of the International Astronomical Union, IAU Symposium, Volume 299, pp. 90-93
2. de Juan Ovelar, Min, Dominik, Thalmann, **Pinilla**, Benisty, Birnstiel (2014): *Imaging diagnostics for Transitional Disks*, Exploring the Formation and Evolution of Planetary Systems, Proceedings of the International Astronomical Union, IAU Symposium, Volume 299, pp. 155-156.
1. Birnstiel, **Pinilla**, Andrews, Benisty, Ercolano (2013): *Transition Disks - Grain Growth, Planets, or Photoevaporation?*, Instabilities and Structures in Proto-Planetary Disks, Marseille, France, Edited by P. Barge; L. Jorda; European Physical Journal Web of Conferences, Volume 46, id.02001.