Klaus M. Pontoppidan

SPACE TELESCOPE SCIENCE INSTITUTE
3700 SAN MARTIN DRIVE
BALTIMORE, MD 21218
pontoppi@stsci.edu
CELL (626) 679 5793

Research interests

- Scientific development of infrared space telescopes
- The chemical and physical structure of protoplanetary disks.
- Initial conditions for the formation of extra-solar planets and their atmospheres.
- Observations and models of ices in molecular clouds, protostellar envelopes, and disks.

Career

2016- Associate Astronomer w/ Tenure, Space Telescope Science Institute
2012-2016 Associate Astronomer, Space Telescope Science Institute
2010-2012 Assistant Astronomer, Space Telescope Science Institute
2009-2010 Senior postdoctoral fellow, California Institute of Technology
2006-2009 Hubble Fellow, California Institute of Technology
2005-2006 Postdoctoral fellow in Planetary Science, California Institute of Technology
2004-2005 Postdoctoral Scholar, Leiden Observatory
2000-2004 Ph.D., Leiden University, Thesis Advisor: Prof. Ewine van Dishoeck. Thesis: “Infrared spectroscopy as a probe of ice and gas in star-forming regions”
1998-2000 M.Sc. in Physics and Astronomy, University of Copenhagen. Thesis: “Differential magnification of gravitationally lenses high redshift dusty galaxies”
1995-1998 B.Sc. in Physics and Mathematics, University of Copenhagen

Mission experience

- PRIMA Star- and Planet Formation Theme co-lead/CoI (2022-)
- POEMM CoI (2021-)
- JWST Project Scientist at STScI (2018-)
- JWST Deputy Project Scientist at STScI (2015-2018)
- Origins Space Telescope Science Technology and Definition Team, planet-formation lead (2016-2020)
- SOFIA-HIRMES CoI (2016-2020)
- JWST-MIRI instrument scientist (2012-2015)
- JWST-NIRSpec instrument scientist (2010-2012)
- E-ELT METIS Science Team
- TMT International Science Definition Team

Press

2021/22 Interviews/appearances in NY Times, Time Magazine, Nature, CNN, The Verge, and many others, related to JWST.

2020 Hubble sees flapping bat shadow

2018 NASA's Webb Telescope to Make a Splash in Search for Interstellar Water

2014 Infant solar system shows signs of windy weather - NRAO press release

2009 ESO Highlights of 2008

2008 Mind the gap: VLT hints at the presence of planets in young gas disks - ESO press release

2008 Water vapor detected in protoplanetary disks - Caltech press release

2004 Spitzer sees ice and warm glows in dark and dusty places

Selected, recent observing programs

2022 PI on the JWST Early Release Observations (**120 hours**)

2021 PI on JWST GO1 programs PID1549, PID1584, PID1611 (**56.7 hours**), CoI on an additional 9 GO1 programs. Total award >$700K.

2017 CoI - JWST-ERS "IceAge: Chemical Evolution of Ices during Star Formation" - **30 hours**

2016 PI - VLT-VISIR Large Program "Protoplanetary disks as chemical factories: A spectroscopic survey of the thermo-chemical evolution of planet-forming regions" - **24 nights**

2010 PI - Herschel Space Observatory OT1: Cool Herschel/Hot Spitzer: The distribution of water in protoplanetary disks - **40 hours**

2008 CoI - Herschel Space Observatory Open Time Key Program (PI Evans), "Dust, Ice and Gas in Time" - **250 hours**

2007 Co-PI - VLT-CRIRES large program (PI van Dishoeck) " The planet-forming zones of disks around solar-mass stars: a CRIRES evolutionary survey" – **27 nights**

Awards

2014 Tinsley Scholar, University of Texas

2006 Hubble Fellowship

2004 FWN **"Researcher of the year"**, Leiden University

Advising and mentoring

Postdocs:

- Dr. Andrea Banzatti (2013-2016)
- Dr. Tyler Pauly (2017-)
- Dr. Charles Poteet (2018-2020)

Graduate students:

- Dr. Isa Oliveira (now COO at Optimum Soluções).

- Dr. Rachel Smith (now Director Nature Research Center, NC Museum of Natural History + assistant professor, Appallachian State University).
- Dr. Sandra Blevins (now at GSFC).
- Dr. Andrea Banzatti (now faculty at Texas T).
- Dr. Alexandra Lockwood (now communications lead for JWST at STScI)

Other students/postdocs:

- Jamila Pegues, Harvard University (STScI summer student)
- Dr. Ke (Coco) Zhang, Caltech (now faculty and University of Wisconsin)
- Dr. Jeanette Bast, Leiden University (now project manager at ESA)

Professional service (past 5 years)

- Origins Space Telescope Science Technology and Definition Team
- Infrared Science Archive User Panel
- Referee for Nature Astronomy, the Astrophysical Journal, Astrophysical journal letters, Astronomy & Astrophysics, and the Astronomical Journal.
- NASA ROSES review panels 2012, 2014, 2015, 2017, 2020

Refereed publications

As of May 22, 2022: 8,272 citations, H-index = 52 (from ADS).

1. *Scanning disk rings and winds in CO at 0.01-10 AU: A high-resolution M-band spectroscopy survey with IRTF-ISHELL*
   Banzatti et al. 2022, AJ, 163, 174

2. *Linking ice and gas in the lambda Orionis Barnard 35A cloud*
   Perotti et al. 2021, A&A, 650, 168

3. *Origins survey spectrometer: Revealing the hearts of distant galaxies and forming planetary systems with far-IR spectroscopy*
   Bradford et al. 2021, JATIS, 7a1017B

4. *Origins space telescope: Trades and decisions leading to the baseline mission concept*
   Leisawitz et al. 2021, JATIS, 7a1014L

5. *Origins space telescope science drivers to design traceability*
   Meixner et al. 2021, JATIS, 7a1012M

6. *Heterodyne receiver for Origins*
   Wiedner et al. 2021, JATIS, 7a1007w

7. *Origins Space Telescope: baseline mission concept*
   Leisawitz et al., 2021, JATIS, 7a1002L

8. *Hints of icy pebble migration feeding and oxygen-rich chemistry in the inner planet-forming region of disks*
Banzatti et al. 2020, ApJ, 903, 124

9. *The evolution of disk winds from a combined study of optical and infrared forbidden lines*
Pascucci et al. 2020, ApJ, 903, 78

10. *Linking ice and gas in the Serpens low-mass star-forming region*
Perotti et al., 2020, A&A, 643, 48

11. *Variability of the Great Disk Shadow in Serpens*
Pontoppidan, Klaus, M.; Green, Joel D.; Pauly, Tyler A.; Salyk, Colette, DePasquale, Joseph, 2020, ApJ, 896, 169

12. The Nitrogen Carrier in Inner Protoplanetary Disks
Pontoppidan, Klaus, M.; Salyk, C.; Banzatti, A.; Blake, Geoffrey A.; Walsh, C.; Lacy, J. H.; Richter, M. J.

13. *Observing the linked depletion of dust and CO gas at 0.1–10 au in disks of intermediate-mass stars*
Banzatti, A.; Garufi, A.; Kama, M.; Benisty, M.; Brittain, S.; **Pontoppidan, K. M.**; Rayner, J., 2018, A&A, 609, 2

14. *PandExo: A Community Tool for Transiting Exoplanet Science with JWST & HST*
Batalha, Natasha E.; Mandell, Avi; **Pontoppidan, Klaus**; Stevenson, Kevin B.; Lewis, Nikole K.; Kalirai, Jason; Earl, Nick; Greene, Thomas; Albert, Loïc; Nielsen, Louise D., 2017, PASP, 129, 4501

15. *Two-dimensional ice mapping of molecular cores*
Noble, J. A.; Fraser, H. J.; **Pontoppidan, K. M.**; Craigon, A. M., 2017, MNRAS, 467, 4753

16. *The Depletion of Water During Dispersal of Planet-forming Disk Regions*
Banzatti, A.; **Pontoppidan, K. M**.; Salyk, C.; Herczeg, G. J.; van Dishoeck, E. F.; Blake, G. A., 2017, ApJ, 834, 152

17. *Mass Measurements in Protoplanetary Disks from Hydrogen Deuteride*
McClure, M. K.; Bergin, E. A.; Cleeves, L. I.; van Dishoeck, E. F.; Blake, G. A.; Evans, N. J., II; Green, J. D.; Henning, Th.; Öberg, K. I.; **Pontoppidan, K. M.**; Salyk, C., 2016, ApJ, 831, 167

18. *The abundance and thermal history of water ice in the disk surrounding HD 142527 from the DIGIT Herschel Key Program*
Min, M.; Bouwman, J.; Dominik, C.; Waters, L. B. F. M.; **Pontoppidan, K. M**.; et al., 2016, ApJ, 593, 11

19. *Measurements of water surface snow lines in classical protoplanetary disks*
Blevins, S. M., **Pontoppidan K. M.**, Banzatti, A., Zhang, K., Najita, J. R., Carr, J. S., Salyk, C., Blake, G. A., 2016, ApJ, 818, 22

20. *Resolved gas cavities in transitional disks inferred from CO isotopologs with ALMA*
van der Marel, N., van Dishoeck, E. F., Bruderer, S., Andrews, S. M., **Pontoppidan, K. M.**, Herczeg, G. J., van Kempen, T., Miotello, A., 2016, A&A, 585, 58

21. *Thirty Meter Telescope Detailed Science Case*
Skidmore, W. et al., 2015, Research in Astronomy and Astrophysics, 15, 1945

22. *Direct imaging of the water snow line at the time of planet formation using two ALMA continuum bands* Banzatti, A., Pinilla, P., Ricci, L., **Pontoppidan, K. M.**, Birnstiel, T., Ciesla, F., 2015, 815, 15

23. *Testing particle trapping in transition disks with ALMA*
Pinilla, P., van der Marel, N., Perez, L. M., van Dishoeck, E. F., Andrews, S., Birnstiel, T., Herczeg, G., Pontoppidan, K. M., van Kempen T., 2015, A&A, 584, 16

24. *Spectroscopic constraints in CH3OH formation: CO mixed with CH3OH ices towards young stellar objects*
Penteado, E. M., Boogert, A. C. A., Pontoppidan, K. M., Ioppolo, S., Blake, G. A., Cuppen, H. M., 2015, MNRAS, 454, 531

25. *Heterogeneity in 12CO/13CO abundance ratios toward solar-type young stellar objects*
Smith, R. L., **Pontoppidan, K. M.**, Young, E. D., Morris, M. R., 2015, ApJ, 813, 120

26. *Detection of water vapor in the terrestrial planet forming region of a transition disk*
Salyk, C. , Lacy, J. H., Richter, M. J., Zhang, K., Blake, G. A., **Pontoppidan, K. M.**, 2015, ApJ, in press

27. *An empirical sequence of gap opening in protoplanetary disks revealed by rovibrational CO*
Banzatti, A. & **Pontoppidan, K. M.**, 2015, ApJ, 809, 167

28. *The mid-infrared instrument for the James Webb Space Telescope, X: Operations and Data Reduction* Gordon, K. D., et al. 2015, PASP, 127, 696

29. *Dimming and CO absorption toward the AA Tau protoplanetary disk: An inflating flow caused by disk instability?*
*Z*hang, K., Crockett, N., Salyk, C., **Pontoppidan, K.**, et al., 2015, ApJ, 805, 55

30. *Depletion of molecular gas by an accretion outburst in a protoplanetary disk*
Banzatti, A., **Pontoppidan, K. M.**, Bruderer, S., Muzerolle, J. et al., 2015, ApJ, 798, 16

31. *Signatures of warm carbon monoxide in protoplanetary discs observed with Herschel SPIRE*
van der Wiel, M. H. D., Naylor, D. A., Kamp, I., Menard, F. et al., 2014, MNRAS, 444, 3911

32. *Emission from water vapor and absorption from other gases at 5-7.5 micron in Spitzer-IRS spectra of protoplanetary disks*
Sargent, B. A., Forrest, W., Watson, D. M., D'Alessio, P. et al.

33. ALMA observations of the T Tauri binary system AS 205: Evidence for molecular winds and/or binary interaction
Salyk, C., **Pontoppidan, K.**, Corder, S., Munoz, D., Zhang, K., Blake, G. A., 2014, 792, 68

34. *The chemistry of planet-forming regions is not interstellar*
Pontoppidan, K. M., 2014, Faraday Discussions, 169, 49

35. UV-to-MIR monitoring of DR Tau: Exploring how water vapor in the planet formation region is affected by stellar accretion variability
Banzatti, A., Meyer, M. R., Manara, C. F., **Pontoppidan, K. M.**, Testi, L., 2014, ApJ, 780, 26

36. *Volatiles in protoplanetary disks*
Pontoppidan, K. M., Salyk, C., Bergin, E. A., Brittain, S. et al., 2014, PPVI chapter

37. *A survey of H2O, CO2 and CO ice features toward background stars and low-mass young stellar objects using AKARI*
Noble, J. A., Fraser, H. J., Aikawa, Y, **Pontoppidan, K. M.**, Sakon, I., 2013, ApJ, 775, 85

38. *VLT-CRIRES survey of rovibrational CO emission from protoplanetary disks*
Brown, J. M., **Pontoppidan, K. M.**, van Dishoeck, E. F., Herczeg, G. J. et al., 2013, ApJ, 770, 94

39. *Measuring protoplanetary disk accretion with HI Pfund beta*
Salyk, C., Herczeg, G., Brown, J. M. Blake, G. A., **Pontoppidan, K. M.**, van Dishoeck, E. F., 2013, ApJ, 769, 21

40. *Vertical settling and radial segregation of larger dust grains in the circumstellar disks of the butterfly star*
Grafe, C., Wolf, S., Guilloteau, S., Dutrey, A., Stapelfeldt, K. R., **Pontoppidan, K. M.**, Sauter, J., 2013, A&A, 553, 69

41. *The HCN-water ratio in the planet formation of region of disks*
Najita, J. R., Carr, J. S., **Pontoppidan, K. M.**, Salyk, C., van Dishoeck, E. F., Blake, G. A. 2013, ApJ, 766, 134

42. *Anomalous CO2 ice toward HOPS-68: A tracer of protostellar feedback*
Poteet, C. A., **Pontoppidan, K. M.**, Megeath, S. T., Watson, D. M., Isokoski, K., Bjorkman, J. E., Sheehan, P. D., Linnartz, H., 2013, ApJ. 766, 117

43. *The radial abundance structure of water vapor in the TW Hya protoplanetary disk*
Zhang, K., **Pontoppidan, K. M.**, Salyk, C., Blake, G. A., 2013, ApJ, 766, 82

44. An old disk still capable of forming a planetary system
Bergin, E. A., Cleeves, L. I., Gorti, U., Zhang, K., Blake, G. A., Green, J. D., Andrews, S. M., Evans N. J., Henning, T., Oberg, K., Pontoppidan, K. M., Qi, C., Salyk, C., van Dishoeck, E., 2013, Nature, 493, 644

45. *The physical structure of protoplanetary disks in the Serpens cluster*
Oliveira, I., Merin, B., **Pontoppidan, K. M.**, van Dishoeck, E. F., 2013, ApJ, 762, 128

46. CO2 ice toward low-luminosity embedded protostars: Evidence for episodic mass accretion via chemical history
Kim, H. J., Evans, N. J., Dunham, M. M., Lee, J.-E., Pontoppidan, K. M., 2012, ApJ 758, 38

47. *Water in star-forming regions with Herschel: highly excited molecular emission from the NGC 1333 IRAS 4B outflow*
Herczeg, G. J., Karska, A., Bruderer, S., Kristensen, L. E., van Dishoeck, E. F., Jorgensen, J. K., Visser, R., Wampfler, S. F., Bergin, E. A., Yildiz, U. A., **Pontoppidan, K. M.**, Gracia-Carpio, J., 2012, A&A, 540, 84

48. *AKARI observations of ice absorption bands towards edge-on young stellar objects*
Aikawa, Y., Kamuro, D., Sakon, I., Itoh, Y., Terada, H., Noble, J. A., **Pontoppidan, K. M.**, Fraser, H. J., Tamura, M., Kandori, R., Kawamura, A., Uena, M., 2012, A&A, 538, 57

49. *A 30 AU radius CO gas hole in the disk around the Herbig Ae star Oph IRS 48*
Brown, J. M., Herczeg, G. J., **Pontoppidan, K. M.**, van Dishoeck, E. F., 2012, ApJ, 744, 116

50. *The Spitzer ice legacy: Ice evolution from cores to protostars*
Oberg, K. I., Boogert, A. C. A., **Pontoppidan, K. M.**, van den Broek, S., van Dishoeck, E. F., Bottinelli, S., Blake, G. A., Evans, N. J., 2011, ApJ, 740, 109

51. *Disks and outflows in CO rovibrational emission from embedded, low-mass young stellar objects*
Herczeg, G. J., Brown, J. M., van Dishoeck, E. F., **Pontoppidan, K. M.**, A&A, 533, 112

52. *On the evolution of dust mineralogy, from protoplanetary disks to planetary systems*
Oliveira, I., Olofsson, J., **Pontoppidan, K. M.**, van Dishoeck, E. F., Augereau, J.-C., Merin,B., 2011, ApJ, 734, 51

53. *The structure and dynamics of molecular gas in planet-forming zones: A CRIRES spectro-astrometric survey*
Pontoppidan, K. M., Blake, G. A., Smette, A., 2011, ApJ, 733, 84

54. *A Spitzer survey of mid-infrared molecular emission from protoplanetary disks. II. Correlations and local thermal equilibrium models*
Salyk, C. **Pontoppidan, K. M.**, Blake, G. A., Najita, J. R., Carr, J. S., 2011, ApJ, 731, 130

55. *Warm dust resolved in the cold disk around T Chamaeleontis with VLTI/AMBER*
Olofsson, J., Benisty, M., Augereau, J.-C., Pinte, C., Menard, F., Tatulli, E., Berger, J.-P., Malbet, F., Merin, B., van Dishoeck, E. F., Lacour, S., **Pontoppidan, K. M.**, Monin, J.-L., Brown, J. M., Blake, G. A., 2011, A&A, 528, 6

56. *Astronomical oxygen isotopic evidence for supernova enrichment of the solar system birth environment by propagating star formation*
Young, E. D., Gounelle, M., Smith, R., L., Morris, M. R., **Pontoppidan, K. M**., 2011, ApJ, 729, 43

57. *Single peaked CO emission line profiles from the inner regions of protoplanetary disks*
Bast, J. E., Brown, J. M., Herczeg, G. J., van Dishoeck, E. F., **Pontoppidan, K. M**., 2011, A&A, 527, 119

58. *Observational constraints on submillimeter dust opacity*
Shirley, Y. L., Huard, T. L., **Pontoppidan, K. M**., Wilner D. J., Stutz, A. M., Bieging, J. H., Evans, N. J., II, 2011, ApJ, 728, 143

59. *Fundamental vibrational transition of CO during the outburst of EX Lupi in 2008*
Goto, M., Regaly, Zs, Dullemond, C. P., van den Ancker, M., Brown, J. M., Carmona, A., **Pontoppidan, K.** (12 additional authors), 2011, ApJ, 728, 5

60. *VLT/X-shooter spectroscopy of a dusty planetary nebula discovered with Spitzer/IRS*
Oliveira, I., Overzier, R. A., **Pontoppidan, K. M.,** van Dishoeck, E. F., Spezzi, L., 2011, A&A, 526, 41

61. *Spectrally resolved pure rotational lines of water in protoplanetary disks*
Pontoppidan, K. M., Salyk, C., Blake, G. A., Kaufl, H.-U., 2010, 722, 173

62. *A Spitzer survey of mid-infrared molecular emission from protoplanetary disks. I. Detection rates*
Pontoppidan, K. M., Salyk, C. S., Blake, G. A., Meijerink, R., Carr, J. S., Najita, J., 2010, ApJ, 720, 887

63. *Evidence for episodic warm outflowing CO gas from the intermediate-mass young stellar object IRAS 08470-4321*
Thi, W.-F., van Dishoeck, E. F., **Pontoppidan, K. M.**, Dartois, E., MNRAS, 406, 1409

64. *The c2d Spitzer spectroscopic survey of ices around low-mass young stellar objects. IV. NH3 and CH3OH*
Bottinelli, S., Boogert, A. C. A., Bouwman, J., Beckwith, M., van Dishoeck, E. F., Oberg, K. I., **Pontoppidan**, K. M., Linnartz, H., Blake, G. A., Evans, N. J. II, Lahuis, F., ApJ, 718, 1100

65. *First results of the Herschel key program "Dust, ice and gas in time (DIGIT)": Dust and gas spectroscopy of HD 100546*
Sturm, B. and the DIGIT team, 2010, A&A, 518, 129

66. *Dust, ice and gas in time (DIGIT) Herschel program first results. A full PACS-SED scan of the gas line emission in protostar DK Cha*
van Kempen, T. A., and the DIGIT team, 2010, A&A, 518, 128

67. *Herschel-PACS imaging of protostars in the HH 1-2 outflow complex*
Fischer, W. J. et al. and the HOPS team, 2010, A&A, 518, 122

68. *Hier ist wahrhaftig ein Loch im Himmel. The NGC 1999 dark globule is not a globule*
Stanke, T. and the HOPS team, 2010, A&A, 518, 94

69. *A Spitzer survey of protoplanetary disk dust in the young Serpens cloud: How do dust characteristics evolve with time?*
Olveira, I., **Pontoppidan, K. M.**, Merin, B., van Dishoeck, E. F., Lahuis, F., Geers, V. C., Jorgensen, J. K., Olofsson, J., Augereau, J.-C., Brown, J. M., 2010, ApJ, 714, 778

70. *Dust particle size evolution*
Pontoppidan, K. M. & Brearley, A. J., 2010, Chapter in book: Protoplanetary dust: Astrophysical and cosmochemical perspectives, eds.: D. Apai, D. S. Lauretta, CUP

71. *c2d Spitzer-IRS spectra of disks around T Tauri stars. IV: Crystalline silicates*
Olofsson et al. 2009, A&A, 507, 327

72. *Radiative transfer models of mid-infrared H2O lines in the planet-forming region of circumstellar disks*
Meijerink R., **Pontoppidan, K. M.**, Blake, G. A., Poelman, D. R., Dullemond, C. P. 2009, ApJ, 704, 1471

73. *A new raytracer for modeling AU-scale imaging of lines from protoplanetary disks*
Pontoppidan, K. M., Meijerink, R., Dullemond, C. P., Blake, G. A., 2009, ApJ, 704, 1482

74. *The circumstellar disk in the Bok globule CB 26: Multi-wavelength observations and modeling of the dust disk and envelope*
Sauter, J., Wolf, S., Launhardt, R., Padgett, D. L., Stapelfeldt, K. R., Pinte, C., Duchene, G., Menard, F., McCabe, C.-E., **Pontoppidan, K. M.**, Dunham, M., Bourke, T.-L., Chen, J. H. 2009, A&A, in press

75. *Lack of PAH emission toward low-mass embedded young stellar objects*
Geers, V. C., van Dishoeck, E. F., **Pontoppidan, K. M.**, Lahuis, F., Crapsi, A., Dullemond, C. P., Blake, G. A.. 2009, A&A, 495, 837

76. *C16O/C17O and C16O/C18O in young stellar objects: analogs for CO self shielding in the early Solar System?*
Smith, R. L., **Pontoppidan, K. M.**, Young, E. D., Morris, M. R., van Dishoeck, E. F. 2009, ApJ, 701, 163

77. *Optical characterization of a new young stellar population in the Serpens molecular cloud*
Oliveira, I., Merin, B., **Pontoppidan, K. M**., et al. 2009, ApJ, 691, 672

78. *Probing dust grain evolution in IM Lupi 's circumstellar disk. Multi-wavelength observations and modeling of the dust disk*
Pinte, C. Padgett, D. L., Menard, F., Stapelfeldt, K. R., Schneider, G., Olofsson, J., Panic, O., Augereau, J. C., Duchene, G., Krist, J, **Pontoppidan, K**. et al. 2008, A&A, 489, 633

79. *Spectro-astrometric imaging of molecular gas within protoplanetary disk gaps*
Pontoppidan, K. M., Blake, G. A., van Dishoeck, E. F., Smette, A., Ireland, M. I. and Brown, J. 2008, ApJ, 684, 1323

80. *H2O and OH gas in the terrestrial zones of protoplanetary disks around two classical T Tauri stars*
Salyk, C., **Pontoppidan, K. M.**, Blake, G. A., Lahuis, F., van Dishoeck, E. F., Evans, N. J., 2008, ApJL, 676, 49

81. *The c2d Spitzer Spectroscopic Survey of Ices around Low-Mass Young Stellar Objects. III. CH4*
*Oberg, K. I., Boogert, A. C. A., **Pontoppidan, K. M.** et al. 2008, ApJ, 678, 1032*

82. *The c2d Spitzer Spectroscopic Survey of Ices around Low-Mass Young Stellar Objects. II. CO2*
Pontoppidan, K. M., Boogert, A. C. A. et al., 2008, ApJ, 678, 1005

83. *The c2d Spitzer Spectroscopic Survey of Ices around Low-Mass Young Stellar Objects. I. H2O and the 5-8 μm Bands*
Boogert, A. C. A., **Pontoppidan, K. M.** et al., 2008, ApJ, 678, 985

84. *Characterizing the nature of embedded young stel lar objects through silicate, ice and millimeter observations*
Crapsi, A., van Dishoeck, E. F., Hogerheijde, M. R., **Pontoppidan, K. M.**, Dullemond, C. P., 2008, A&A, 486, 245

85. *Spatially extended PAHs in circumstellar disks around T Tauri and Herbig Ae stars*
Geers, V. C., van Dishoeck, E. F., Visser, R., **Pontoppidan, K. M.**, Augereau, J.-C., Habart, E., Lagrange, A. M., 2007, A&A, 476, 279

86. *Evolution of Dust and Ice Features around FU Orionis Objects*
Quanz, S. P., Henning, Th., Bouwman, J., van Boekel, R., Juhasz, A., Linz, H., **Pontoppidan, K. M.**, Lahuis, F., 2007, ApJ, 668, 359

87. *Dust sedimentation in protoplanetary disks with polycyclic aromatic hydrocarbons*
Dullemond, C. P., Henning, Th., Visser, R., Geers, V. C., van Dishoeck, E. F., **Pontoppidan, K. M.**, 2007, A&A, 473, 457

88. *c2d Spitzer IRS Spectra of Disks around T Tauri Stars. III. [Ne II], [Fe I], and H2 gas-phase lines*
Lahuis, F., van Dishoeck, E. F., Blake, G. A., Evans, N. J., Kessler-Silacci, J. E., **Pontoppidan, K. M.**, 2007, ApJ, 665, 492

89. *Cold Disks: Spitzer Spectroscopy of Disks around Young Stars with Large Gaps*
Brown, J. M., Blake, G. A., Dullemond, C. P., Merin, B., Augereau, J. C., Boogert, A. C. A., Evans, N. J., Geers, V. C., Lahuis, F., Kessler-Silacci, J. E., **Pontoppidan, K. M.**, van Dishoeck, E. F., 2007, ApJ, 664, 107

90. *Spatial separation of small and large grains in the transitional disk around the young star IRS 48*
Geers, V. C., **Pontoppidan, K. M**., van Dishoeck, E. F., Dullemond, C. P., Augereau, J.-C., Merin, B., Oliveira, I. and Pel, J. W., 2007, A&A, 469, 35

91. *Abundant Crystal line Silicates in the Disk of a Very Low Mass Star*
Merin, B., Augereau, J.-C., van Dishoeck, E. F., Kessler-Silacci, J. E., Dullemond, C. P., Blake, G. A., Lahuis, F., Brown, J. M., Geers, V. C, **Pontoppidan, K. M**. et al., 2007, ApJ, 661, 361

92. *Deep Spitzer Spectroscopy of the "Flying Saucer" Edge-on Disk: Large Grains beyond 50 AU*
Pontoppidan, K. M., Stapelfeldt, K. R., Blake, G. A., van Dishoeck, E. F. and Dullemond, C. P., 2007, ApJ, 658, 111

93. *PAH chemistry and IR emission from circumstellar disks*
Visser, R., Geers, V. C., Dullemond, C. P., Augereau, J.-C., **Pontoppidan, K. M.** and van Dishoeck, E. F., 2007, A&A, 466, 229

94. *Modeling Spitzer observations of VV Ser I: The circumstel lar disk of a UX Orionis star*
Pontoppidan, K. M., Dullemond, C. P., Blake, G. A., Boogert, A. C. A., van Dishoeck, E. F., Evans II, N. J., Kessler-Silacci, J. E. and Lahuis, F., 2006, ApJ, 656, 991

95. *Modeling Spitzer observations of VV Ser II: An extended quantum heated nebula and a disk shadow*
Pontoppidan, K. M., Dullemond, C. P., Evans II, N. J., Geers, V. C., Harvey, P. M. and Spiesman, B., 2006, ApJ, 656, 980

96. *C2D Spitzer-IRS spectra of disks around T Tauri stars. II. PAH emission features*
Geers, V. C., Augereau, J.-C., **Pontoppidan, K. M.** et al., 2006, A&A, 459, 545

97. *Low-mass star formation in R Coronae Australis: observations of organic molecules with the APEX telescope*
Schoier, F. L., Jørgensen, J. K., **Pontoppidan, K. M.**, Lundgren, A. A., 2006, A&A, 454, 67

98. *Spatial mapping of ices in the Oph-F core: a direct measurement of CO depletion and the formation of CO2*
Pontoppidan, K. M., 2006, A&A, 453, 47

99. *VLT-ISAAC 3-5 mum spectroscopy of embedded young low-mass stars. III. Intermediate-mass sources in Vela*
Thi, W.-F., van Dishoeck, E. F., Dartois, E., **Pontoppidan, K. M.**, Schutte, W. A., Ehren- freund, P., D'Hendecourt, L., Fraser, H. J., 2006, A&A, 449, 251

100. *C2D Spitzer-IRS spectra of disks around T Tauri stars: I. Silicate emission and grain growth*
Kessler-Silacci, J.-E., Augereau, J.-C., Dullemond, C. P., Geers, V., Lahuis, F., Evans II, N. J., van Dishoeck, E. F., Blake, G. A., Boogert, A. C. A., Brown, J., Jørgensen, J. K., Knez, C. and **Pontoppidan, K. M.**, 2006, ApJ, 639, 275

101. *Hot organic molecules toward a young low-mass star: a first look at inner disk chemistry*
Lahuis, F., Boogert, A. C. A., van Dishoeck, E. F., **Pontoppidan, K. M.**, et al., 2006, ApJ, 636, 145

102. *Spitzer mid-infrared spectroscopy of ices toward extincted background stars*
Knez, C., Boogert, A. C. A., **Pontoppidan, K. M.**, et al., 2005, ApJ, 635, 145

103. *A 3-5 μm VLT spectroscopic survey of embedded young low mass stars II. Solid OCN–*
van Broekhuizen, F. A., **Pontoppidan, K. M.**, Fraser, H. J. and van Dishoeck, E. F., 2005, A&A, 441, 249

104. *Protostellar holes: Spitzer Space Telescope observations of the protostellar binary IRAS 16293-2422*
Jørgensen, J. K., Lahuis, F., Sch¨oier, F. L., van Dishoeck, E. F., Blake, G. A., Boogert, A. C. A., Dullemond, C. P., Evans, N. J., Kessler-Silacci, J. E. and **Pontoppidan, K. M.**, 2005, A&A, L631, 77

105. *Ices in the edge-on disk CRBR 2422.8-3423: Spitzer spectroscopy and Monte Carlo radiative transfer modeling*
Pontoppidan, K. M., Dullemond, C. P., van Dishoeck, E. F., Blake, G. A., Boogert, A. C. A., Evans II, N. J., Kessler-Silacci, J. E. and Lahuis, F. 2005, ApJ, 622, 463

106. *Projection of circumstellar disks on their environments*
Pontoppidan, K. M. and Dullemond, C. P., 2005, A&A, 435, 595

107. *Probing the surfaces of interstel lar dust grains: The adsorption of CO at bare grain surfaces*
Fraser, H. J., Bisschop, S. E., **Pontoppidan, K. M.,** Tielens, A. G. G. M. and van Dishoeck, E. F. 2004, MNRAS, 356, 1283

108. *Mapping ices in protostellar environments on 1000 AU scales: Methanol-rich ice in the envelope of Serpens SMM 4*
Pontoppidan, K. M., van Dishoeck, E. F. and Dartois, E, 2004, A&A, 426, 925

109. *A New Look at Stel lar Outflows: Spitzer Observations of the Herbig-Haro 46/47 System*
Noriega-Crespo, A., Morris, P., Marleau, F., Carey, S., Boogert, A., van Dishoeck, E., Evans, N., Keene, J., Muzerolle, J., Stapelfeldt, K., **Pontoppidan, K.** et al., 2004, ApJS, 154, 352- 356

110. *Spitzer Space Telescope Spectroscopy of Ices toward Low Mass Embedded Protostars*
Boogert, A., **Pontoppidan, K**., et al. 2004, ApJS, 154, 359-363

111. *A 3-5 micron VLT survey of ices around embedded young low mass stars I: Structure of the CO ice*
Pontoppidan, K. M., Fraser, H. J., Dartois, E., Thi, W.-F., van Dishoeck, E. F., Boogert, A.C.A., d'Hendecourt, L., Tielens, A.G.G.M. and Bisschop, S. E., 2003, A&A, 408, 981-1007

112. *Detection of abundant solid methanol around 3 young low mass stars*
Pontoppidan, K. M., Dartois, E., van Dishoeck, E. and d'Hendecourt, L., 2003, A&A, 404, L17-20

113. *From molecular cores to planet-forming disks: An SIRTF legacy program*
Evans II, N. J., Allen, L. E., Blake, G. A., Boogert, A. C. A., Bourke, T., Harvey, P. M., Kessler, J. E., Koerner, D. W., Lee, C. W., Mundy, L. G., Myers, P. C., Padgett, D. L., **Pontoppidan, K.**, et al. 2003, PASP, 115, 965-980

114. *Detection of strongly processed ice in the central starburst of NGC4945*
Spoon, H.W.W., Moorwood, A.F.M., **Pontoppidan, K. M**., Cami, J., Kregel, M., Lutz, D. and Tielens, A.G.G.M., 2003, A&A, 402, 499-507

115. *Stringent upper limits to the solid NH3 abundance towards W33A from near-IR spectroscopy with the Very Large Telescope*
Taban, I.M., Schutte, W.A., **Pontoppidan, K. M.** and van Dishoeck, E.F., 2003, A&A, 399, 169-175

116. *Detection of abundant solid CO in the disk around CRBR 2422.8-3423*
Thi, W.-F., **Pontoppidan, K. M.**, van Dishoeck, E. F., Dartois, E. and d'Hendecourt, L., 2002, A&A, 394, L27-30

117. *Combined VLT ISAAC/ISO SWS spectroscopy of two protostellar sources. The importance of minor solid state features*
Dartois, E., d'Hendecourt, L. Thi, W., **Pontoppidan, K. M.** and van Dishoeck, E. F., 2002, A&A, 394, 1057

118. *Bright CO ro-vibrational emission lines in the class I source GSS 30 IRS1: Probing the inner disk of a young embedded star*
Pontoppidan, K. M., Schoier, F. L., van Dishoeck, E. F. and Dartois, E., 2002, A&A, 393, 585-595

Recent, significant unrefereed papers

1. *Origins Space Telescope Mission Concept Study Report*
Meixner et al. 2019, ArXiv/191206213

2. *The Origins Space Telescope*
Leisawitz et al. 2019, SPIE, 111150Q

3. *The need for a far-infrared cold space telescope to understand the chemistry of planet formation*
Pontoppidan, Klaus M.; et al. 2018, White Paper submitted to the NAS Exoplanet Science Strategy Committee

4. *Pandeia: a multi-mission exposure time calculator for JWST and WFIRST*
Pontoppidan, Klaus M.; Pickering, Timothy E.; et al. 2016, SPIE, 9910

5. *The Far-Infrared Surveyor Mission study: paper I, the genesis*
Meixner, M et al. 2016, SPIE, 9904

6. *The NIRSpec MSA planning tool for mult-object spectroscopy with JWST*
Karakla, D., Shyrokov, A., **Pontoppidan, K.**, Beck, T., Gilbert, K., Valenti, J., Kassin, S., Soderblom, D., 2014, SPIE, 9149

7. *METIS: The thermal infrared instrument for the E-ELT*
Brandl, B. R., Lenzen, R., Pantin, E., Glasse, A., Blommaert, J., Meyer, M., Guedel, M., Venema, L., Molster, F., Stuik, R., Schmalzl, E., Meisner, J., Le Floc'h, E., Brandner, W., Hippler, S., Snellen, I., **Pontoppidan, K.,** 2012, SPIE, 8446