

Chunhua Qi

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EDUCATION	California Institute of Technology, Pasadena, California Ph.D. in Planetary Science and minor in Astronomy. <ul style="list-style-type: none">• Dissertation Topic: “Aperture Synthesis Studies of the Chemical Composition of Protoplanetary Disks and Comets”• Advisor: <i>G.A. Blake</i> Peking University, Beijing, China B.S. in Space Physics		1995 - 2001 1990 - 1995
ACADEMIC EXPERIENCE	Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts Astrophysicist <ul style="list-style-type: none">• Observations of protoplanetary disks• Origin of the Solar System and comet studies Computer Engineer <ul style="list-style-type: none">• Designs, modifications, and maintenance of the MIR package, the off-line data calibration software for the Submillimeter Array. Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts SMA Postdoctoral Fellow <ul style="list-style-type: none">• Made the first SMA 345 GHz image. California Institute of Technology, Pasadena, California Research Assistant <ul style="list-style-type: none">• Millimeter interferometric studies of protoplanetary disks and comets• Database Maintenance, array operation for the Millimeter Array, the Owens Valley Radio Observatory		2003 - now 2000 - 2003 1995 - 2000
TEACHING EXPERIENCE	Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts Instructor for Harvard Astronomy course Astrophysics Lab (Ay191) California Institute of Technology, Pasadena, California Teaching Assistant <ul style="list-style-type: none">• Assisted in teaching graduate courses including Molecular Processes in Astronomy, Cosmochemistry and Atmospheric Chemistry.		2005 - 2007 1995 - 2000
PROFESSIONAL SOCIETIES AND SERVICES	Member of AAS (American Astronomical Society) and IAU (International Astronomical Union) and EAG (European Association of Geochemistry) Referee for The Astrophysical Journal and Astronomy & Astrophysics External Reviewer for NASA Exoplanet Research Program and NASA Postdoctoral Program and JCMT proposals		

LOC member for the conference “Submillimeter Astronomy
in the era of the SMA” (2005)

AWARDS

Smithsonian Astrophysical Observatory Certificate of Award (2018)

PRESS RELEASE

CO snow line study:

- NRAO: <http://http://www.nrao.edu/pr/2013/snowline>
- ESO: <http://www.eso.org/public/news/eso1333>
- CfA: <https://www.cfa.harvard.edu/news/2013-20>

Comet study:

- CfA: <https://www.cfa.harvard.edu/news/2005-23>

INVITED TALKS AND
SEMINARS

- 2018 May 17th, Astrophysics colloquium at the Kavli Institute for Astronomy and Astrophysics at Peking University, Beijing, China
“Imaging Snow Lines”
- 2018 May 16th, THCA / IASTU joint Astrophysics Seminar at the Tsinghua Center for Astrophysics
“Molecules as diagnostic probes of protoplanetary disk structure”
- 2017 July 26th, ASIAA TIARA/CHARMS Workshop in Disks, Taiwan
“Rings and gaps, but no planets?”
- 2017 June 22nd, The 72nd International Symposium on Molecular Spectroscopy, Urbana, IL, USA
“Probing CO Freeze-Out and Desorption in Protoplanetary Disks”
- 2016 October 10th, Fractionation of isotopes in space: from the solar system to galaxies, Florence, Italy
“Observations of isotopic fractionation in circumstellar disks”
- 2016 August 3rd, ASIAA TIARA/CHARMS Workshop in Disks, Taiwan
“Probing the disk structure with molecular emission ”
- 2016 March 18th, Antarctica Dome A Science Workshop, Suzhou, China
“THz science in planet-forming disks and Solar System objects”
- 2015 October 4th, From clouds to protoplanetary disks: the astrochemical link, Berlin, Germany
“Chemical imaging of the CO snow line in protoplanetary disks”
- 2015 August 16th, Goldschmidt 2015, Prague, CZ
“Gas distribution in protoplanetary disks”
- 2015 June 18th, Frontiers in Star Formation: Celebrating Contributions to the Field by Nuria Calvet and Lee Hartmann, Ann Arbor, MI, USA
“Molecules as diagnostic probes of disk structure”
- 2015 January 25th, Revealing the Structure of Protoplanetary Disks, UNAM CRyA, Morelia, Mexico
“Locating the CO Snow Line in Protoplanetary Disks”
- 2012 May 8th, Revealing Evolution of Protoplanetary Disks in the ALMA Era, Kyoto, Japan
“Molecular Observations of Disks with the Submillimeter Array”
- 2011 March 14th, Workshop on the Chemical Taxonomy of Comets, Annapolis, Maryland
“Interferometric Observations of Comets”
- 2010 May 17th, Cometary Radio Astronomy Workshop, NRAO GBT
“Interferometric Imaging of the Outburst of Comet 17P/Holmes with the Submillimeter Array”
- 2010 March 17th, Submillimeter and THz Astrochemistry, Tokyo, Japan
“Chemistry in Protoplanetary Disks - an Observational Prospective”
- 2009 October 1st, JPL Astrophysics Colloquium, Pasadena, CA

- 2007 June 22nd, The North American ALMA Science Center Conference: Through Disks to Stars and Planets, Charlottesville, VA
 “Chemistry in Disks – an Observational Perspective”
- 2006 July 16th, 36th COSPAR Scientific Assembly, Beijing, China
 “SMA Observation of Star-Forming Regions”

SELECTED
 CONTRIBUTED
 TALKS

- 2018 July 10–13, ASTROCHEMISTRY Past, Present and Future, Pasadena, CA “Imaging condensation fronts of CO and N₂ in disks”
- 2017 November 29–December 1, ASTROCHEMISTRY Past, Present and Future, Pasadena, CA
 “Imaging the CO snow line in protoplanetary disks”
- 2014 December 8–11, Revolution in Astronomy with ALMA, the 3rd Year, Tokyo, Japan
 “Chemical Imaging of the CO Snow Line in Disks”
- 2013 June 3–7, IAUS 299: Exploring the Formation and Evolution of Planetary Systems, Victoria, Canada
 “Observational Signatures of the CO Snow Line in Protoplanetary Disks”
- 2012 June 10–15, The Origins of Stars and Their Planetary Systems, Hamilton, ON Canada
 “Resolving the CO Snow Line in Protoplanetary Disks”
- 2011 May 22–26, AAS 218
 “Resolving the CO Snow Line in the Disk around HD 163296”
- 2009 June 8–12, Millimeter and Submillimeter Astronomy at High Angular Resolution, Taipei, Taiwan
 “An SMA View of Chemistry in Disks”
- 2005 June 13–16, Submillimeter Astronomy in the era of the SMA, Cambridge, MA
 “Constraining TW Hydra Disk Properties”

REFEREED
 PUBLICATIONS

- Eighty-two papers in referred journals, including eleven as first author, with more than 6000 citations; h-index = 43 (source: Google Scholar by June 2019)
82. Bergner, J. B., Öberg, K. I., Bergin, E. A. 2019, “A Survey of C₂H, HCN, and C₁₈O in Protoplanetary Disks”, *The Astrophysical Journal*, **876**, 25
81. Carney, M. T., Hogerheijde, M. R., Guzman, V. V. 2019, “Upper limits on CH₃OH in the HD 163296 protoplanetary disk. Evidence for a low gas-phase CH₃OH-to-H₂CO ratio”, *Astronomy & Astrophysics*, **623**, 124
80. Guzmán, V. V., Öberg, K. I., Carpenter, J. 2018, “H₂CO Ortho-to-para Ratio in the Protoplanetary Disk HD 163296”, *The Astrophysical Journal*, **864**, 170
79. Kastner, J. H., Qi, C., Dickson-Vandervelde, D. A. 2018, “A Subarcsecond ALMA Molecular Line Imaging Survey of the Circumbinary, Protoplanetary Disk Orbiting V4046 Sgr”, *The Astrophysical Journal*, **863**, 106
78. Salinas, V. N., Hogerheijde, M. R., Murillo, N. M. 2018, “Exploring DCO⁺ as a tracer of thermal inversion in the disk around the Herbig Ae star HD 163296”, *Astronomy & Astrophysics*, **616**, 45
77. Favre, C., Fedele, D., Semenov, D. 2018, “First Detection of the Simplest Organic Acid in a Protoplanetary Disk”, *The Astrophysical Journal*, **862**, L2
76. Mauco, K., Briceno, C., Calvet, N. 2018, “Herschel PACS Observations of 4-10 Myr Old Classical T Tauri Stars in Orion OB1”, *The Astrophysical Journal*, **859**, 1
75. Law, C. J., Ricci, L., Andrews, S. M. 2017, “An SMA Continuum Survey of Circumstellar Disks in the Serpens Star-forming Region”, *The Astronomical Journal*, **154**, 255

74. Salinas, V. N., Hogerheijde, M. R., Mathews, G. S. 2017, “DCO+, DCN, and N₂D+ reveal three different deuteration regimes in the disk around the Herbig Ae star HD 163296”, *Astronomy & Astrophysics*, **606**, 125
73. Carney, M. T., Hogerheijde, M. R., Loomis, R. A. 2017, “Increased H₂CO production in the outer disk around HD 163296”, *Astronomy & Astrophysics*, **605**, 21
72. Flaherty, K. M., Hughes, A. M., Rose, S. C., et al. 2017, “A Three-dimensional View of Turbulence: Constraints on Turbulent Motions in the HD 163296 Protoplanetary Disk Using DCO+”, *The Astrophysical Journal*, **843**, 150
71. Hily-Blant, P., Magalhaes, V., Kastner, J., et al. 2017, “Direct evidence of multiple reservoirs of volatile nitrogen in a protosolar nebula analogue”, *Astronomy & Astrophysics*, **603**, L6
70. Öberg, K. I., Guzmán, V. V., Merchantz, C. J., et al. 2017, “H₂CO Distribution and Formation in the TW HYA Disk”, *The Astrophysical Journal*, **839**, 43
69. Guzmán, V. V., Öberg, K. I., Huang, J., Loomis, R., & Qi, C. 2017, “Nitrogen Fractionation in Protoplanetary Disks from the H₁₃CN/H₁₃CN Ratio”, *The Astrophysical Journal*, **836**, 30
68. Huang, J., Öberg, K. I., Qi, C., et al. 2017, “An ALMA Survey of DCN/H₁₃CN and DCO+/H₁₃CO+ in Protoplanetary Disks”, *The Astrophysical Journal*, **835**, 231
67. Schwarz, K. R., Bergin, E. A., Cleaves, L. I., et al. 2016, “The Radial Distribution of H₂ and CO in TW Hya as Revealed by Resolved ALMA Observations of CO Isotopologues”, *The Astrophysical Journal*, **823**, 91
66. Flaherty, K. M., Hughes, A. M., Andrews, S. M., et al. 2016, “Resolved Gas Interior to the Dust Rings of the HD 141569 Disk”, *The Astrophysical Journal*, **818**, 97
65. Hogerheijde, M. R., Bekkers, D., Pinilla, P., et al. 2015, “Steepening of the 820 micron continuum surface-brightness profile signals dust evolution in TW Hya’s disk”, *Astronomy & Astrophysics*, **586**, 99
64. Guzmán, V. V., Öberg, K. I., Loomis, R., & Qi, C. 2015, “Cyanide Photochemistry and Nitrogen Fractionation in the MWC 480 Disk”, *The Astrophysical Journal*, **814**, 53
63. Qi, C., Öberg, K. I., Andrews, S. M., et al. 2015, “Chemical Imaging of the CO Snow Line in the HD 163296 Disk”, *The Astrophysical Journal*, **813**, 128
62. Kastner, J. H., Qi, C., Gorti, U., et al. 2015, “Rings of C₂H in the Molecular Disks Orbiting TW Hya and V4046 Sgr”, *IAU Symposium 314*, 193
61. Öberg, K. I., Furuya, K., Loomis, R., et al. 2015, “Double DCO+ Rings Reveal CO Ice Desorption in the Outer Disk Around IM Lup”, *The Astrophysical Journal*, **810**, 112
60. Rich, E. A., Wisniewski, J. P., Mayama, S., et al. 2015, “Near-IR Polarized Scattered Light Imagery of the DoAr 28 Transitional Disk”, *The astronomical Journal*, **150**, 86
59. Graninger, D., Öberg, K. I., Qi, C., & Kastner, J. 2015, “HNC in Protoplanetary Disks”, *The Astrophysical Journal*, **807**, L15
58. Espaillat, C., Andrews, S., Powell, D., Feldman, D., Qi, C., Wilner, D., D’Alessio, P. 2015, “The Transitional Disk around IRAS 04125+2902”, *The Astrophysical Journal*, **807**, 156
57. Aikawa, Y., Furuya, K., Nomura, H., & Qi, C. 2015, “Analytical Formulae of Molecular Ion Abundances and the N₂H+ Ring in Protoplanetary Disks”, *The Astrophysical Journal*, **807**, 120
56. Kastner, J. H., Qi, C., Gorti, U., Hily-Blant, P., Öberg, K., Forveille, T., Andrews, S., Wilner, D. 2015, “A Ring of C₂H in the Molecular Disk Orbiting TW Hya”, *The Astrophysical Journal*, **806**, 75
55. Öberg, K. I., Guzmán, V. V., Furuya, K., Qi, C., Aikawa, Y., Andrews, S.M., Loomis, R., Wilner, D.J. 2015, “The comet-like composition of a protoplanetary disk as revealed by complex cyanides”, *Nature*, **520**, 198

54. Favre, C., Bergin, E. A., Cleeves, L. I., Hersant, F., Qi, C., Aikawa, Y. 2015, "Evidence for DCO+ as a Probe of Ionization in the Warm Disk Surface", *The Astrophysical Journal*, **802**, L23
53. Cleeves, L. I., Bergin, E. A., Qi, C., Adams, F. C., Öberg, K. I. 2015, "Constraining the X-Ray and Cosmic-Ray Ionization Chemistry of the TW Hya Protoplanetary Disk: Evidence for a Sub-interstellar Cosmic-Ray Rate", *The Astrophysical Journal*, **799**, 204
52. Qi, C., Hogerheijde, M. R., Jewitt, D., Gurwell, M. A., & Wilner, D. J. 2015, "Peculiar Near-nucleus Outgassing of Comet 17P/Holmes during its 2007 Outburst", *The Astrophysical Journal*, **799**, 110
51. Dutrey, A., Semenov, D., Chapillon, E., Gorti, U., Guilloteau, S., Hersant, F., Hogerheijde, M., Hughes, A.M., Meeus, G., Nomura, H., Pietu, V., Qi, C., Wakelam, V. 2014, "Physical and Chemical Structure of Planet-Forming Disks Probed by Millimeter Observations and Modeling", *Protostars and Planets VI*, 317
50. Favre, C., Cleeves, L. I., Bergin, E. A., Qi, C., & Blake, G. A. 2013, "A Significantly Low CO Abundance toward the TW Hya Protoplanetary Disk: A Path to Active Carbon Chemistry?", *The Astrophysical Journal*, **776**, L38
49. Rosenfeld, K. A., Andrews, S. M., Hughes, A. M., Wilner, D. J., & Qi, C. 2013, "A Spatially Resolved Vertical Temperature Gradient in the HD 163296 Disk", *The Astrophysical Journal*, **774**, 16
48. Qi, C., Öberg, K. I., Wilner, D. J., et al. 2013, "Imaging of the CO Snow Line in a Solar Nebula Analog", *Science*, **341**, 630
47. Qi, C., Öberg, K. I., Wilner, D. J., & Rosenfeld, K. A. 2013, "First Detection of c-C₃H₂ in a Circumstellar Disk", *The Astrophysical Journal*, **765**, L14
46. Qi, C., Öberg, K. I., & Wilner, D. J. 2013, "H₂CO and N₂H⁺ in Protoplanetary Disks: Evidence for a CO-ice Regulated Chemistry", *The Astrophysical Journal*, **765**, 34
45. Bergin, E. A., Cleeves, L. I., Gorti, U., Zhang, K., Blake, G.A., Green, J.D., Andrews, S.M., Evans, N. II, Henning, T., Oberg, K., Pontoppidan, K., Qi, C., Salyk, C., van Dishoeck, E. 2013, "An old disk still capable of forming a planetary system", *Nature*, **493**, 644
44. Rosenfeld, K. A., Qi, C., Andrews, S. M., Wilner, D.J., Corder, S.A., Dullemond, C.P., Lin, S., Hughes, A.M., D'Alessio, P., Ho, P.T.P. 2012, "Kinematics of the CO Gas in the Inner Regions of the TW Hya Disk", *The Astrophysical Journal*, **757**, 129
43. Öberg, K. I., Qi, C., Wilner, D. J., & Hogerheijde, M. R. 2012, "Evidence for Multiple Pathways to Deuterium Enhancements in Protoplanetary Disks", *The Astrophysical Journal*, **749**, 162
42. Espaillat, C., Ingleby, L., Hernández, J., Furlan, E., D'Alessio, P., Calvet, N., Andrews, S., Muzerolle, J., Qi, C., & Wilner, D. 2012, "On the Transitional Disk Class: Linking Observations of T Tauri Stars and Physical Disk Models", *The Astrophysical Journal*, **747**, 103
41. Andrews, S. M., Wilner, D. J., Hughes, A. M., Qi, C., Rosenfeld, K.A., Oberg, K.I., Birnstiel, T., Espaillat, C., Cieza, L.A., Williams, J.P., Lin, S., Ho, P.T.P. 2012, "The TW Hya Disk at 870 μ m: Comparison of CO and Dust Radial Structures", *The Astrophysical Journal*, **744**, 162
40. Öberg, K. I., Qi, C., Wilner, D. J., & Andrews, S. M. 2011, "The Ionization Fraction in the DM Tau Protoplanetary Disk", *The Astrophysical Journal*, **743**, 152
39. Lyo, A.-R., Ohashi, N., Qi, C., Wilner, D. J., & Su, Y.-N. 2011, "Millimeter Observations of the Transition Disk around HD 135344B (SAO 206462)", *The Astronomical Journal*, **142**, 151
38. Qi, C., D'Alessio, P., Öberg, K. I., Wilner, D. J., Hughes, A. M., Andrews, S. M., & Sandra, A. 2011, "Resolving the CO Snow Line in the Disk around HD 163296", *The Astrophysical Journal*, **740**, 84

37. Hughes, A. M., Wilner, D. J., Andrews, S. M., Williams, J. P., Su, K. Y.L., Murray-Clay, R. A., & Qi, C. 2011, “Resolved Submillimeter Observations of the HR 8799 and HD 107146 Debris Disks”, *The Astrophysical Journal*, **740**, 38
36. Öberg, K. I., Qi, C., Fogel, J. K. J., Bergin, E. A., Andrews, S. M., Espaillat, C., Wilner, D. J., Pascucci, I., Kastner, J. H. 2011, “Disk Imaging Survey of Chemistry with SMA. II. Southern Sky Protoplanetary Disk Data and Full Sample Statistics”, *The Astrophysical Journal*, **734**, 98
35. Andrews, S. M., Wilner, D. J., Espaillat, C., Hughes, A. M., Dullemond, C. P., McClure, M. K., Qi, C., Brown, J. M. 2011, “Resolved Images of Large Cavities in Protoplanetary Transition Disks”, *The Astrophysical Journal*, **732**, 42
34. Hughes, A. M., Wilner, D. J., Andrews, S. M., Qi, C., & Hogerheijde, M. R. 2011, “Empirical Constraints on Turbulence in Protoplanetary Accretion Disks”, *The Astrophysical Journal*, **727**, 85
33. Andrews, S. M., Wilner, D. J., Hughes, A. M., Qi, C., & Dullemond, C. P. 2010, “Protoplanetary Disk Structures in Ophiuchus. II. Extension to Fainter Sources”, *The Astrophysical Journal*, **723**, 1241
32. Rodriguez, D. R., Kastner, J. H., Wilner, D., & Qi, C. 2010, “Imaging the Molecular Disk Orbiting the Twin Young Suns of V4046 Sgr”, *The Astrophysical Journal*, **720**, 1684
31. Öberg, K. I., Qi, C., Fogel, J. K. J., Bergin, E. A., Andrews, S. M., Espaillat, C., van Kempen, T. A., Wilner, D. J., Pascucci, I. 2010, “The Disk Imaging Survey of Chemistry with SMA. I. Taurus Protoplanetary Disk Data”, *The Astrophysical Journal*, **720**, 480
30. Hughes, A. M., Andrews, S. M., Wilner, D. J., Meyer, M. R., Carpenter, J. M., Qi, C., Hales, A. S., Casassus, S., Hogerheijde, J. R., Mamajek, E. E., Wolf, S., Henning, T., Silverstone, M. D. 2010, “Structure and Composition of Two Transitional Circumstellar Disks in Corona Australis”, *The Astronomical Journal*, **140**, 887
29. Brown, J. M., Blake, G. A., Qi, C., Dullemond, C. P., Wilner, D. J., & Williams, J. P. 2009, “Evidence for Dust Clearing Through Resolved Submillimeter Imaging”, *The Astrophysical Journal*, **704**, 496
28. Andrews, S. M., Wilner, D. J., Hughes, A. M., Qi, C., & Dullemond, C. P. 2009, “Protoplanetary Disk Structures in Ophiuchus”, *The Astrophysical Journal*, **700**, 1502
27. Panić, O., Hogerheijde, M. R., Wilner, D., & Qi, C. 2009, “A Break in the Gas and Dust Surface Density of the Disc around the T Tauri Star IM Lup”, *Astronomy and Astrophysics*, **501**, 269
26. Hughes, A. M., Andrews, S. M., Espaillat, C., Wilner, D. J., Calvet, N., D’Alessio, P., Qi, C., Williams, J. P., Hogerheijde, M. R. 2009, “A Spatially Resolved Inner Hole in the Disk Around GM Aurigae”, *The Astrophysical Journal*, **698**, 131
25. Hogerheijde, M. R., Qi, C., de Pater, I., Blake, G. A., Friedel, D. N., Forster, J. R., Palmer, P., Remijan, A. j., Snyder, L. E., Wright, M. C. H. 2009, “Simultaneous Observations of Comet C/2002 T7 (LINEAR) with the Berkeley-Illinois-Maryland Association and Owens Valley Radio Observatory Interferometers: HCN and CH₃OH”, *The Astronomical Journal*, **137**, 4837
24. Panić, O., Hogerheijde, M. R., Wilner, D., & Qi, C. 2008, “Gas and Dust Mass in the Disc around the Herbig Ae Star HD 169142”, *Astronomy and Astrophysics*, **491**, 219
23. Eisner, J. A., Plambeck, R. L., Carpenter, J. M., Corder, S. A., Qi, C., & Wilner, D. 2008, “Proplyds and Massive Disks in the Orion Nebula Cluster Imaged with CARMA and SMA”, *The Astrophysical Journal*, **683**, 304
22. Qi, C., Wilner, D. J., Aikawa, Y., Blake, G. A., & Hogerheijde, M. R. 2008, “Resolving the Chemistry in the Disk of TW Hydrae. I. Deuterated Species”, *The Astrophysical Journal*, **681**, 1396

21. Andrews, S. M., Hughes, A. M., Wilner, D. J., & Qi, C. 2008, "The Structure of the DoAr 25 Circumstellar Disk", *The Astrophysical Journal*, **678**, L133
20. Hughes, A. M., Wilner, D. J., Qi, C., & Hogerheijde, M. R. 2008, "Gas and Dust Emission at the Outer Edge of Protoplanetary Disks", *The Astrophysical Journal*, **678**, 1119
19. Brown, J. M., Blake, G. A., Qi, C., Dullemond, C. P., & Wilner, D. J. 2008, "LkH α 330: Evidence for Dust Clearing through Resolved Submillimeter Imaging", *The Astrophysical Journal*, **675**, L109
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17. Isella, A., Testi, L., Natta, A., Neri, R., Wilner, D., & Qi, C. 2007, "Millimeter imaging of HD 163296: probing the disk structure and kinematics", *Astronomy and Astrophysics*, **469**, 213
16. Qi, C. 2007, "The Submillimeter Array", *Advances in Space Research*, **40**, 639
15. Qi, C., Wilner, D. J., Calvet, N., Bourke, T. L., Blake, G. A., Hogerheijde, M. R., Ho, P. T. P., & Bergin, E. 2006, "CO J=6-5 observation of TW Hya with the SMA", *The Astrophysical Journal*, **636**, L157
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13. Meech, K. J., and 208 coauthors including Qi C. 2005, "Deep Impact: Observations from a Worldwide Earth-Based Campaign", *Science*, **310**, 265
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11. Chunhua Qi, Paul Ho, David J. Wilner, Shigehisa Takakuwa, Naomi Hirano, Nagayoshi Ohashi, Tyler L. Bourke, Qizhou Zhang, Geoffrey A. Blake, Michiel Hogerheijde, Masao Saito, Minhoo Choi, & Ji Yang 2004, "Imaging the Disk around TW Hya with the Submillimeter Array", *The Astrophysical Journal*, **616**, L11
10. Shigehisa Takakuwa, Nagayoshi Ohashi, Paul T. P. Ho, Chunhua Qi, David J. Wilner, Qizhou Zhang, Tyler L. Bourke, Naomi Hirano, Minhoo Choi, & Ji Yang 2004, "Submillimeter Array Observations of L1551 IRS 5 in CS (J=7-6)", *The Astrophysical Journal*, **616**, L15
9. Yi-Jehng Kuan, Hui-chun Huang, Steven B. Charnley, Naomi Hirano, Shigehisa Takakuwa, David J. Wilner, Sheng-Yuan Liu, Nagayoshi Ohashi, Tyler L. Bourke, Chunhua Qi, Qizhou Zhang 2004, "Organic Molecules in Low-Mass Protostellar Hot Cores: Submillimeter Imaging of IRAS 16293-2422", *The Astrophysical Journal*, **616**, L27
8. Naomi Hirano, Hiroko Shinnaga, Dinh-V-Trung, David Fong, Eric Keto, Nimesh Patel, Chunhua Qi, Ken Young, Qizhou Zhang, & Junhui Zhao 2004, "High Velocity Bipolar Outflow and Disk-like Envelope in the Carbon Star V Hya", *The Astrophysical Journal*, **616**, L43
7. Young, K. H.; Hunter, T. R.; Wilner, D. J.; Gurwell, M. A.; Barrett, J. W.; Blundell, R.; Christensen, R.; Fong, D.; Hirano, N.; Ho, P. T. P., Liu, S.Y., Lo, K.Y., Martin, R., Matsushita, S., Moran, J.M., Ohashi, N., Papa, D.C., Patel, N., Patt, F., Peck, A., Qi, C., Saito, M., Schinckel, A., Shinnaga, H., Sridharan, T.K., Takakuwa, S., Tong, C.E., Trung, D.V. 2004, "Submillimeter Array Observations of CS J = 14-13 Emission from the Evolved Star IRC +10216", *The Astrophysical Journal*, **616**, L51
6. Edwin Bergin and Nuria Calvet, Michiael L. Sitko, Herve Abgrall, Paola D'Alessio, Gregory J. Herczeg, Evelyne Roueff, Chunhua Qi, David K. Lynch, Ray W. Russell, Suellen M. Braford, R. Brad Perry 2004, "A New Probe of the Planet-Forming Region in T Tauri Disks", *The Astrophysical Journal*, **614**, L133

5. Michiel R. Hogerheijde, Imke de Pater, Melvyn Wright, J.R. Forster, L. E. Snyder, A. Remijan, L. M. Woodney, M. F. A'Hearn, P. Palmer, Y.-J. Kuan, H.-C. Huang, G. A. Blake, Chunhua Qi, J. Kessler, S.-Y. Liu 2004, "Combined BIMA and OVRO Observations of Comet C/1999 S4(LINEAR)", *The Astronomical Journal*, **127**, 2406
4. Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake 2003, "Continuum and CO/HCO⁺ Emission from the Disk Around the T Tauri Star LkCa 15", *The Astrophysical Journal*, **597**, 986
3. Yuri Aikawa, Munetake Momose, Wing-Fai Thi, Gerd-Jan Van Zadelhoff, Chunhua Qi, Geoffrey A. Blake, & Ewine F. van Dishoeck 2003, "Interferometric Observations of Formaldehyde in the Protoplanetary Disk around LkCa 15", *Publications of the Astronomical Society of Japan*, **55**, 11
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