

Dr. Raghvendra Sahai

RESEARCH INTERESTS

- Stellar Evolution: High-resolution studies (imaging/spectroscopy) of dying Sun-like stars (red giants, pre-planetary and planetary nebulae), Young Stellar Objects, Massive Star-Formation Regions
- Astrophysical Jets, Circumstellar Dust
- Multiwavelength observations (radio, millimeter-wave, near-to-far IR, optical, UV & X-rays): Guest Observer on NASA's Great Observatories (Hubble Space Telescope, Chandra X-Ray Observatory, Spitzer Space Telescope, GALEX) and leading ground-based telescopes (e.g., Keck I and II)
- High-resolution ground-based interferometry at radio and millimeter-wave wavelengths (e.g., using the National Radio Astronomy Observatory's Very Long Baseline Array [VLBA] and the Very Large Array [VLA]; the Atacama Large Millimeter/submillimeter Array [ALMA], the Submillimeter Array [SMT], and the Combined Array for Research in Millimeter-wave Astronomy [CARMA])
- Numerical simulations of (magneto)hydrodynamic stellar wind/jet interactions (supercomputing)
- High-contrast coronagraphic imaging (optical/near-infrared) from space to search for planetary and brown dwarf companions around nearby stars, Kuiper Belt and Oort Clouds analogs around nearby red giants, circumstellar disks
- Modeling of multiwavelength data (including continuum/line radiative transfer)

EDUCATION

1978 M.S. Physics, Indian Institute of Technology, Kanpur, India

1981 M.S. Astronomy, California Institute of Technology

1985 Ph.D., California Institute of Technology

EMPLOYMENT

2008-todate Principal Research Scientist, Jet Propulsion Laboratory

2002-2008 Research Scientist (Senior A), Jet Propulsion Laboratory

1995-2002 Research Scientist, Jet Propulsion Laboratory Laboratory

1992-95 Senior Resident Research Associate at JPL, National Research Council

1990-92 Docent, University of Gothenburg, Sweden

1986-90 Post-doctoral Research Associate, University of Gothenburg, Sweden

1985-86 Post-doctoral Research Associate, University of Texas, Austin

1984-85 Robert A. Welch Foundation Fellow, University of Texas, Austin

PROFESSIONAL EXPERIENCE

2015 Hubble Space Telescope Proposal Review Panel Cycle 23

2015 Chandra Peer Proposal Review Panel Cycle 17

2012-2013 Member, Scientific Organizing Committee, International Conference on “Asymmetric Planetary Nebulae VI”

2012 Hubble Space Telescope Proposal Review Panel Cycle 20

2011 NASA Astrophysics Data Analysis Program [ADAP] Review

2010,2011 Herschel Observing Time Allocation Committee

2005-08 JPL Group Supervisor Alternate, group 3262 “Origins of Stars and Planets”

2008-09 Panel Member, National Optical Astronomy Observatory (NOAO), Telescope Allocation Committee

2006-2007 Member, Scientific Organizing Committee, International Conference on “Asymmetric Planetary Nebulae IV”

2006 Hubble Space Telescope Proposal Review Panel Cycle 15

2005 Spitzer Space Telescope Proposal Review Panel Cycle 2

2005 JPL Research and Technology Development Proposal Review

2003,2004 Research Project Review for FAPESP (Sao Paulo State Funding Agency), Brazil

2002-2005 JPL Promotion Advisory Board Reviews

2002-2003 Associate Member, Scientific Organizing Committee, International Conference on “Asymmetric Planetary Nebulae III”

2002-2003 NHST/SUVO Science Working Group

2001 Hubble Space Telescope Proposal Review Panel Cycle 10

1997-todate Member, Science Team, ECLIPSE Proposal (MIDEX, DISCOVERY)

1996 Member, Science Team for CODEX/HST Instrument Proposal

1995-99 Associate Member, Science Team, Hubble Space Telescope Wide Field & Planetary Camera 2

1991,1992 Expert Member, Ph.D. dissertation committees, Chalmers University of Technology, Gothenburg, Sweden

1985-todate Frequent Referee for papers submitted to Astrophysical Journal, Astronomical Journal, Astronomy and Astrophysics & Monthly Notices of the Royal Astronomical Society

AWARDS

1. 2 JPL Research & Technology Development Awards (2013, 2014)
2. 4 **PI** and 2 **co-I** XMM-Newton (ESA/NASA) GO program awards (2007-2016)
3. 23 **PI** and 8 **co-I** NASA Hubble Space Telescope GO program awards (1998-2013)
4. 9 **PI** and 2 **co-I** NASA Chandra X-Ray Observatory GO program awards (2001-2015)
5. 3 **PI** and 1 **co-I** ESA/NASA Herschel Space Observatory GO program awards (2010-2012)
6. 3 **PI** and 5 **co-I** NASA Spitzer Space Telescope GO program awards (2004-2006)
7. **PI** 2 NASA Long Term Space Astrophysics 5-yr awards (1998-2003, 2005-2010)
8. **PI** 2 NASA GALEX GO program awards (2004,2008)
9. **PI** 3 NASA Astrophysics Data Program 3-yr awards (2004-07, 2010-14, 2013-16)

HONORS

1. 2007 West Coast Alumni Leadership Award, Indian Institute of Technology, Kanpur
2. 1978 President's Gold Medal, Best Outgoing Undergraduate Student, Indian Institute of Technology, Kanpur, India

MENTORING & SUPERVISION

- 08/15-12/15 Samantha Scibelli (Stony Brook University), NASA UI program
- 02/15-08/15 Ryan McPeters (College of the Canyons), SIRI and JPL Summer Internship program
- 06/15-08/15 Kelechi Ikegwu (North Carolina A & T State University), NASA MUREP program
- 01/15-06/15 Benjamin Stenger (Cal State University, Fullerton), MSP in STEM program
- 01/14-05/14 Galen Mack-Crane (Occidental College), SIRI program
- 01/13-05/13 Skyler Saleebyan (Glendale Community College, Glendale, CA), SIRI program
- 01/13-05/13 Stoyan Ivanova (Georgia Tech., Georgia), NASA/USRP Internship program
- 09/12-12/12 Alyx Stevens (U. Texas, Austin), NASA/USRP Internship program
- 01/12-04/13 Jorge Munoz (Occidental College, Los Angeles, Ca), SIRI & Caltech SURF program
- 09/11-04/14 Alexandra Gruson (Santa Monica Community College, Santa Monica, CA), SIRI program & JPL Research Apprentice program
- 09/11-12/11 Abigail Azari (Smith College, Northampton, MA), NASA/USRP Internship program
- 01/11-05/11 Adam Blake (Embry-Riddle Aeronautical University, Daytona Beach, FL), NASA/USRP Internship program
- 01/11-05/11 Nick Stantzios (Northern Arizona University, Flagstaff, AZ), NASA/USRP Internship program
- 01/09-05/09 John Caleb Wherry (Austin Peay State University, Clarksville, TN), NASA/USRP Internship program
- 09/08-12/08 Rachael Ainsworth (U. Tennessee, Knoxville, TN), NASA/USRP Internship program

- 02/07-08/07 Gregory Villar (CSU, Pomona), Minority Initiatives Internship Summer Student (2008)
- 02/07-08/07 Mark Rubin (CSU, Northridge), Academic Part Time, (2007)
- 02/07-08/07 Mark Rubin, Academic Part Time
- 2005-2007 Dr. M. Stute, Caltech Postdoctoral Scholar at JPL
- 06/06-08/06 Krzysztof Findeisen (Cornell University, Ithaca, NY), Caltech Summer Research Undergraduate Fellow at JPL
- 2001-2003 Dr. C-F. Lee, Postdoctoral Scholar, National Research Council (NRC)
- 2000-2002 Dr. C. Sánchez Contreras, Caltech Postdoctoral Scholar at JPL
- 1999 D. Ionita-Ariton (Caltech), Caltech Summer Research Undergraduate Fellow at JPL
- 1997-1999 Dr. A. Dayal, Caltech Postdoctoral Scholar at JPL
- 1995 B. E. Sugerman, Honors Thesis “Models of Kinematic Structure in the Circumstellar Outflows of the AGB Carbon Stars V Hydra Using High-Resolution Spectroscopy of the $4.6\ \mu\text{m}$ CO Lines”, Occidental College
- 1994 B. E. Sugerman (Occidental College), Caltech Summer Research Undergraduate Fellow at JPL
- 1992 F. Larsson, Senior Undergraduate Research thesis “Time-variability in the rare $^{29}\text{SiO}(v=0, J=2-1)$ maser in NML Tau, other Miras and Orion-KL”, University of Gothenburg, Sweden
- 1991-92 A. Nummelin, Senior Undergraduate Research thesis “Mass Loss from AGB Stars – The Circumstellar Envelope of the Carbon Star V Cygni”, Chalmers University of Technology, Sweden

TEACHING EXPERIENCE

- 1990-1992 Advanced Undergraduate Course in “Astronomical Techniques”, Chalmers University of Technology and University of Gothenburg, Sweden
- 1988-1992 Advanced Undergraduate Course in “Stars and Stellar Atmospheres”, Chalmers University of Technology and University of Gothenburg, Sweden

PROFESSIONAL SOCIETIES

- 1 American Astronomical Society
- 2 International Astronomical Union
- 3 European Astronomical Society (founding member)

SERVICE & PUBLIC OUTREACH

- 2004-2005 Lecturer at “SPECTRA” Summer Workshops for Physics High-School Teachers at University of La Verne, La Verne, CA 91750
- 1999-2003 Public Talks, e.g. “A Window to the Beginning of Time - The Hubble Space Telescope”, 11/20/03 at Explorers Club

SELECTED PEER-REVIEWED PUBLICATIONS

1. "CN abundance variations in the shell of IRC +10216", Wootten, A., Lichten, S. M., **Sahai, R.**, & Wannier, P. G. 1982, ApJ, 257, 151
2. "SiS in circumstellar shells" **Sahai, R.**, Wootten, A., & Clegg, R. E. S. 1984, ApJ, 284, 144
3. "CO 4.6 micron emission lines from the IRC +10216 inner envelope", **Sahai, R.** & Wannier, P. G. 1985, ApJ, 299, 424
4. "Mass loss from giant and supergiant stars", Wannier, P. G., & **Sahai, R.** 1986, ApJ, 311, 335
5. "A hot, low mass-loss rate inner envelope in IRC + 10216", **Sahai, R.** 1987, ApJ, 318, 809
6. "Abundances in red giant stars - Carbon and oxygen isotopes in carbon-rich molecular envelopes", Wannier, P. G., & **Sahai, R.** 1987, ApJ, 319, 367
7. "Discovery of very high velocity outflow in V Hydra - Wind from an accretion disk in a binary?" **Sahai, R.** & Wannier, P. G. 1988, A&A, 201, L9
8. "The centimeter radio continuum from IRC+10216 and other late-type stars with mass-loss envelopes", **Sahai, R.**, Claussen, M. J., & Masson, C. R. 1989, A&A, 220, 92
9. "SiO and CO emission from carbon stars with silicate features and southern IRAS sources", Deguchi, S., Nakada, Y., & **Sahai, R.** 1990, A&A, 230, 339
10. "Mass loss from red giant stars. II - Carbon stars", Wannier, P. G., **Sahai, R.**, Andersson, B.-G., & Johnson, H. R. 1990, ApJ, 358, 251
11. "CO in the bipolar planetary nebula NGC 3132", **Sahai, R.**, Wootten, A., Clegg, R. E. S. 1990, A&A 234, L1
12. "A new self-consistent model of circumstellar CO emission for deriving mass-loss rates in red giants. I - The carbon-rich star U Camelopardalis", **Sahai, R.** 1990, ApJ, 362, 652
13. "The bipolar planetary nebula IC 4406 - CO, optical and dust emission", **Sahai, R.**, Wootten, A., Schwarz, H. E., & Clegg, R. E. S. 1991, A&A, 251, 560
14. "Discovery of a Fast Bipolar Mass-Outflow from the Prototype S-star π^1 Gru", **Sahai, R.**, 1992, A&A, 253, L33
15. "A survey of circumstellar CO emission from a sample of IRAS point sources", Nyman, L.-A., Booth, R.S., Carlstrom, U., Habing, H.J., Heske, A., **Sahai, R.**, Stark, R., van der Veen, W.E.C.J. & Winnberg, A. 1992, A&A Suppl.Ser., 93, 121
16. "SEST CO observations of galaxies in the Grus Quartet - NGC 7582 and NGC 7552", Claussen, M. J., & **Sahai, R.** 1992, AJ, 103, 1134
17. "SO and SO₂ in Mass-Loss Envelopes of Red Giants - Probes of Non-Equilibrium Circumstellar Chemistry and Mass-Loss Rates", **Sahai, R.** and Wannier, P.G. 1992, ApJ., 394, 320
18. "Interferometric Observations of Non-Maser SiO Emission from Circumstellar Envelopes of AGB Stars: Acceleration Regions and SiO Depletion", **Sahai, R.** and Bieging, J.H. 1993, AJ, 105, 595

19. “A search for SiO, OH, CO and HCN radio emission from silicate-carbon stars”, Little-Marenin, I. R., **Sahai, R.**, Wannier, P. G., Benson, P. J., Gaylard, M., & Omont, A. 1994, *A&A*, 281, 451
20. “A systematic study of IRAS selected proto-planetary nebula candidates. II. OH and CO observations”, 1994, Hu, J. Y., Te Lintel Hekkert, P., Slijkhuis, F., Baas, F., **Sahai, R.**, & Wood, P. R. 1994, *A&A Suppl. Ser.*, 103, 301
21. “Multiple Outflows in the Bipolar Planetary Nebula M1-16: A Molecular Line Study”, **Sahai, R.**, Wootten, A., Schwarz, H.E., Wild, W. 1994, *ApJ*, 428, 237
22. “Circumstellar CO emission in S Stars. I. Mass-loss with little or no dust”, **Sahai, R.** and Liechti, S. 1995, *A&A*, 293, 198
23. “Hubble Space Telescope Observations of the SN 1987A Triple Ring Nebula” Burrows, C. J., Krist, J., Hester, J.J., **Sahai, R.** et al. 1995, *ApJ*, 452, 680
24. “The Boomerang Nebula: The Coldest Region of the Universe?” **Sahai, R.**, Nyman, L-Å. 1997, *ApJ*, 487, L155
25. “The shock structure in the protoplanetary nebula M1-92: imaging of atomic and H₂ line emission”, Bujarrabal, V., Alcolea, J., **Sahai, R.**, Zamorano, J., Zijlstra, A. A. 1998, *A&A*, 331, 361
26. “Imaging of the Egg Nebula (CRL 2688) with WFPC2/HST: A History of AGB/Post-AGB Mass Loss”, **Sahai, R.**, Trauger, J.T., Watson, A.M., Stapelfeldt, K.R. et al. 1998, *ApJ*, 493, 301
27. “The Structure of the Prototype Bipolar Protoplanetary Nebula CRL 2688 (Egg Nebula): Broadband, Polarimetric, and H₂ Line Imaging with NICMOS on the Hubble Space Telescope”, **Sahai, R.**, Hines, D. C., Kastner, J. H., Weintraub, D. A., Trauger, J. T., Rieke, M. J., Thompson, R. I., Schneider, G. 1998, *ApJ*, 492, L163
28. “Multipolar Bubbles and Jets in Low-Excitation Planetary Nebulae: Toward a New Understanding of the Formation and Shaping of Planetary Nebulae”, **Sahai, R.**, Trauger, J. T. 1998, *AJ*, 116, 1357
29. ”Saturn’s hydrogen aurora: Wide field and planetary camera 2 imaging from the Hubble Space Telescope” Trauger, J.T., Griffiths, R.E., Hester, J.J., Hoessel, J. G., Holtzman, J.A., Krist, J.E., Mould, J.R., **Sahai, R.**, Scowen, P.A., Stapelfeldt, K.R., Watson, A.M., *JGR*, 103, 20237
30. “Discovery of a Remarkable Point-Symmetric Proto-Planetary Nebula: Hubble Space Telescope Imaging of IRAS 04296+3429”, **Sahai, R.** 1999, *ApJ*, 524, L125
31. “A Highly Collimated Bipolar Outflow in a Proto-planetary Nebula: Hubble Space Telescope Imaging of HEN 401”, **Sahai, R.**, Bujarrabal, V., Zijlstra A. 1999, *ApJ*, 518, L115
32. “The “Water-Fountain Nebula” IRAS 16342-3814: Hubble Space Telescope/Very Large Array Study of a Bipolar Protoplanetary Nebula”, **Sahai, R.**, Te Lintel Hekkert, P., Morris, M., Zijlstra, A., Likkell, L. 1999, *ApJ*, 514, L115
33. “Unraveling the Structure of Aspherical Proto-Planetary Nebulae. I. Hubble Space Telescope Imaging and Hydroxyl Maser Line Observations of Roberts 22”, **Sahai, R.**, Zijlstra, A., Bujarrabal, V., Te Lintel Hekkert, P. 1999, *AJ*, 117, 1408

34. “The Etched Hourglass Nebula MYCN 18. I. HUBBLE SPACE TELESCOPE Observations”, **Sahai, R.**, Dayal, A., Watson, A.M., Trauger, J.T., et al. 1999, AJ, 118, 468
35. “The Etched Hourglass Nebula MYCN 18. II. A Spatio-kinematic Model”, Dayal, A., **Sahai, R.**, Watson, A.M., Trauger, J.T. et al. 2000, AJ, 119, 315
36. “Pinpointing the Position of the Post-Asymptotic Giant Branch Star at the Core of RAFGL 2688 Using Polarimetric Imaging with NICMOS”, Weintraub, D.A., Kastner, J.H., Hines, D.C., **Sahai, R.** 2000, ApJ, 531, 401
37. “He2-113: A Multipolar Planetary Nebula with Rings around a Cool Wolf-Rayet Star”, **Sahai, R.**, Nyman, L-Å., Wootten, A. 2000, ApJ, 543, 880
38. “The Starfish Twins: Two Young Planetary Nebulae with Extreme Multipolar Morphology”, **Sahai, R.** 2000, ApJ, 537, L43
39. “Discovery of a Symmetrical Highly-Collimated Bipolar Jet in He2-90”, **Sahai, R.**, & Nyman, L-Å. 2000, ApJ, 538, L145
40. “The structure and momentum of multiple collimated outflows in the protoplanetary nebula Frosty Leo”, **Sahai, R.**; Bujarrabal, V., Castro-Carrizo, A., Zijlstra, A. 2000, A&A, 360, L9
41. “A 2000 km s^{-1} pristine post-AGB wind in the protoplanetary nebula He 3-1475”, Sánchez Contreras, C. and **Sahai, R.** 2001, ApJ, 55, L173
42. “Proper Motions in the Knotty, Bipolar Jet in Henize 2-90”, **Sahai, R.**, Brilliant, S., Livio, M., Grebel, E.K., Brandner, W., Tingay, S. & Nyman, L-Å. 2002, ApJ, 573, L123
43. “Physical Structure of the Proto-Planetary Nebula CRL 618. I. Optical Long-Slit Spectroscopy and Imaging”, Sánchez Contreras, C., **Sahai, R.** & Gil de Paz, A. 2002, ApJ, 578, 269
44. “HST observations of the protoplanetary nebula OH 231.8+4.2: The structure of the jets and shocks”, Bujarrabal, V., Alcolea, J., Sánchez Contreras, C., & **Sahai, R.** 2002, A&A, 389, 271
45. “An Icy, Bipolar Pre-Planetary Nebula with Knotty Jets: IRAS22036+5306”, **Sahai, R.**, Zijlstra, A., Sánchez Contreras, C., & Morris, M. 2003, ApJ, 586, L81
46. “Shaping Proto-Planetary and Young Planetary Nebulae with Collimated Fast Winds”, Lee, C-F. & **Sahai, R.** 2003, ApJ, 586, 319
47. “A collimated, high-speed outflow from the dying star V Hydrae”, **Sahai, R.**; Morris, M., Knapp, G. R., Young, K., Barnbaum, C. 2003, Nature, 426, 261
48. “X-Ray Emission from the Preplanetary Nebula He3-1475”, **Sahai, R.**, Kastner, J.H., Morris, M., Frank, A., Blackman, E.G. 2003, ApJ, 599, L87
49. “Magnetohydrodynamic Models of the Knotty, Collimated Jet in He2-90”, Lee, C-F. & **Sahai, R.** 2004, ApJ, 606, 483
50. “Physical Structure of the Protoplanetary Nebula CRL 618. II. Interferometric Mapping of Millimeter-Wavelength HCN $J = 1-0$, HCO+ $J = 1-0$, and Continuum Emission”, Sánchez Contreras, C. and **Sahai, R.** 2004, ApJ, 602, 960
51. “The Companion to the Central Mira Star of the Protoplanetary Nebula OH 231.8+4.2”, Sánchez Contreras, C., Gil de Paz, A., & **Sahai, R.** 2004, ApJ, 616, 519

52. “The kinematics of water masers in the stellar molecular outflow source, IRAS 19134+2131”, Imai, H., Morris, M., **Sahai, R.**; Hachisuka, K., Azzollini F., J. R. 2004, A&A, 420, 265
53. “Sculpting a Pre-planetary Nebula with a Precessing Jet: IRAS 16342-3814”, **Sahai, R.**; Le Mignant, D., Sánchez Contreras, C., Campbell, R. D., Chaffee, F. H. 2005, ApJ, 622, L53.
54. “A Starfish Preplanetary Nebula: IRAS 19024+0044”, **Sahai, R.**; Sánchez Contreras, C., Morris, M. 2005, ApJ, 620, 948
55. “The disrupted molecular envelope of Frosty Leo”, Castro-Carrizo, A., Bujarrabal, V., Sánchez Contreras, C., **Sahai, R.**; Alcolea, J. 2005, A&A, 431, 979
56. “The dark lane of the planetary nebula NGC 6302”, Matsuura, M., Zijlstra, A. A., Molster, F. J., Waters, L. B. F. M., Nomura, H., **Sahai, R.**, & Hoare, M. G. 2005, MNRAS, 359, 383
57. “First Evidence of a Precessing Jet Excavating a Protostellar Envelope”, Ybarra, J. E., Barsony, M., Haisch, K. E., Jr., Jarrett, T. H., **Sahai, R.**, & Weinberger, A. J. 2006, ApJ, 647, L159
58. “Radio continuum monitoring of the extreme carbon star IRC+10216” Menten, K. M., Reid, M. J., Krügel, E., Claussen, M. J., & **Sahai, R.** 2006, A&A, 453, 301
59. “The Dust Envelope of the Pre-Planetary Nebula IRAS 19475+3119”, Sarkar, G. & **Sahai, R.** 2006, ApJ, 644, 1171
60. “A Study of H₂ Emission in the Bipolar Proto-Planetary Nebula IRAS 17150-3224”, Hrivnak, B.J., Kelly, D.M., Su, K.Y.L., Kwok, S., **Sahai, R.** 2006, ApJ, 650, 237
61. “A Spitzer IRS Spectral Atlas of Luminous 8 micron Sources in the Large Magellanic Cloud”, Buchanan, C.L., Kastner, J.H., Forrest, W.J., Hrivnak, B.J., **Sahai, R.**, Egan, M., Frank, A., and Barnbaum, C. 2006, AJ, 132, 1890
62. “X-Ray Emission from Planetary Nebulae I. Spherically Symmetric Numerical Simulations”, Stute, M. and **Sahai, R.**, 2006, ApJ, 651, 882
63. “A Massive Bipolar Outflow and a Dusty Torus with Large Grains in the Pre-Planetary Nebula IRAS 22036+5306”, **Sahai, R.**, Young, K., Patel, N.A., Sánchez Contreras, C. and Morris, M. 2006, ApJ, 653, 1241
64. “Adaptive Optics Imaging of IRAS 18276-1431: A Bipolar Pre-Planetary Nebula with Circumstellar Searchlight Beams and Arcs”, Sánchez Contreras, C., D. Le Mignant, D., **Sahai, R.**, and Morris, M. 2007, ApJ, 656, 1150
65. “A Quadrupolar Preplanetary Nebula: IRAS19475+3119”, **Sahai, R.**, Sánchez Contreras, C., Morris, M., & Claussen, M. 2007, ApJ, 658, 410
66. “Hydrodynamical Simulations of the Jet in the Symbiotic Star MWC 560. III. Application to X-Ray Jets in Symbiotic Stars”, Stute, M., & **Sahai, R.** 2007, ApJ, 665, 698
67. “A Spitzer Study of the Mass-Loss Histories of Three Bipolar Preplanetary Nebulae”, Do, T., Morris, M., **Sahai, R.**, & Stapelfeldt, K. 2007, AJ, 134, 1419
68. “The Spatio-Kinematical Structure and Distance of the Preplanetary Nebula IRAS 19134+2131”, Imai, H., **Sahai, R.**, & Morris, M. 2007, ApJ, 669, 424
69. “Preplanetary Nebulae: An HST Imaging Survey and a New Morphological Classification System”, **Sahai, R.**, Morris, M., Sánchez Contreras, C., & Claussen, M. 2007, AJ, 134, 2200

70. “High-Velocity Interstellar Bullets in IRAS05506+2414: A Very Young Protostar?”, **Sahai, R.**, Claussen, M., Sánchez Contreras, C., Morris, M. & Sarkar, G. 2008, ApJ, 680, 483
71. “The LMC’s Top 250: Classification of the Most Luminous Compact 8 micron Sources in the Large Magellanic Cloud”, Kastner, J. H., Thorndike, S. L., Romanczyk, P. A., Buchanan, C., Hrivnak, B. J., **Sahai, R.**, & Egan, M. 2008, AJ, 136, 1221
72. “Echelle long-slit optical spectroscopy of evolved stars”, Sánchez Contreras, C., **Sahai, R.**, Gil de Paz, A., & Goodrich, R. 2008, ApJS, 179, 166
73. “Binarity in Cool Asymptotic Giant Branch Stars: A Galex Search for Ultraviolet Excesses”, **Sahai, R.**, Findeisen, K., Gil de Paz, A., & Sánchez Contreras, C. 2008, ApJ, 689, 1274
74. “A Study of H₂ Emission in Three Bipolar Proto-Planetary Nebulae: IRAS 16594-4656, Hen 3-401, and Rob 22”, Hrivnak, B. J., Smith, N., Su, K. Y. L., & **Sahai, R.** 2008, ApJ, 688, 327
75. “The Motion of Water Masers in the Pre-Planetary Nebula IRAS 16342-3814”, Claussen, M.J., **Sahai, R.**, & Morris, M., 2009, ApJ, 691, 219
76. “Detection of X-rays from the jet-driving Symbiotic Star MWC 560”, Stute, M. & **Sahai, R.**, 2009, A&A, 498, 209
77. “Mid-IR period-magnitude relations for AGB stars”, Glass, I.S., Schultheis, M., Blommaert, J.A.D.L., **Sahai, R.**, Stute, M., & Uttenthaler, S. 2009, MNRAS, 395, L11
78. “Collimated Fast Wind in the Pre-Planetary Nebula CRL 618”, Lee, C-F., Hsu, M-C., & **Sahai, R.** 2009, ApJ, 696, 1630
79. “Sculpting an AGB Mass-Loss Envelope into a Bipolar Planetary Nebula: High-Velocity Outflows in V Hydrae”, **Sahai, R.**, Sugerman, B.E.K, Hinkle, K. 2009, ApJ, 699, 1015
80. “Spitzer IRS Spectra of Luminous 8 μ m Sources in the Large Magellanic Cloud: testing Color-based Classifications”, Buchanan, C., Kastner, J. H., Hrivnak, B. J., **Sahai, R.**, 2009, AJ, 138, 1597
81. “The Astrosphere of the Asymptotic Giant Branch Star IRC+10216”, **Sahai, R.**, & Chronopoulos, C. K. 2010, ApJ, 711, L53
82. “Proper Motions of H₂O Masers in the Water Fountain Source IRAS 19190+1102”, Day, F. M., Pihlström, Y. M., Claussen, M. J., & **Sahai, R.** 2010, ApJ, 713, 986
83. “The Dusty Circumstellar Disks of B[e] Supergiants in the Magellanic Clouds”, Kastner, J. H., Buchanan, C., **Sahai, R.**, Forrest, W. J., & Sargent, B. A. 2010, AJ, 139, 1993
84. “Galactic bulge giants: probing stellar and galactic evolution I. Catalogue of Spitzer IRAC and MIPS sources”, Uttenthaler, S., Stute, M., **Sahai, R.**, Blommaert, J. A. D. L., Schultheis, M., Kraemer, K. E., Groenewegen, M. A. T., & Price, S. D. 2010, A&A, 517, A44
85. “Young Planetary Nebulae: Hubble Space Telescope Imaging and a New Morphological Classification System”, **Sahai, R.**, Morris, M. R., & Villar, G. G. 2011, AJ, 141, 134
86. “The Identification of Probable SiS Emission at 13-14 μ m in Spectra of Galactic S Stars”, Sloan, G. C., Hony, S., Smolders, K., Decin, L., Zijlstra, A. A., Feast, M. W., van Wyk, F., van Loon, J. Th., Groenewegen, M. A. T., **Sahai, R.**, 2011, ApJ, 729, 121

87. “Discovery and Analysis of $21\mu\text{m}$ Feature Sources in the Magellanic Clouds”, Volk, K., Hrivnak, B.J., Matsuura, M., Bernard-Salas, J., Szczerba, R., Sloan, G.C., Kraemer, K.E., van Loon, J.Th., Kemper, F., Woods, P.M., Zijlstra, A.A., **Sahai, R.**; Meixner, M., Gordon, K.D., Gruendl, R.A., Tielens, A.G.G.M., Indebetouw, R., Marengo, M., 2011, ApJ, 735, 127
88. “An EVLA and CARMA study of dusty disks and torii with large grains in dying stars”, **Sahai, R.**, Claussen, M. J., Schnee, S., Morris, M. R., & Sánchez Contreras, C. 2011, ApJ, 739, L3
89. “Strong Variable Ultraviolet Emission from Y Gem: Accretion Activity in an AGB Star with a Binary Companion?”, **Sahai, R.**, Neill, J.D., Gil de Paz, A., & Sánchez Contreras, C. 2011, ApJ, 740, L39
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