

## Henry G. Roe



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### Education:

Ph.D. in Astrophysics, University of California, Berkeley, 2002.  
M.A. in Astrophysics, University of California, Berkeley, 2000.  
B.A. Magna Cum Laude with Highest Honors in Chemistry, Williams College, 1997.

### Professional Appointments:

Tenure-Track Assistant Astronomer (Lowell Observatory; Sep. 2006 - present)  
NSF Astronomy and Astrophysics Postdoctoral Fellow (Caltech; Sep. 2004 - Aug. 2006)  
O.K. Earl Postdoctoral Scholar in Planetary Science (Caltech; Jan. 2003 - Aug. 2004)  
Graduate Instructor for advanced undergraduate infrared lab course (UCB; Fall 2000)  
Graduate Instructor for non-major solar system survey course (UCB; Spring 1998)  
Graduate Instructor for four sections of non-major astronomy survey course (UCB; Fall 1997)  
Teaching Assistant for upper level physical chemistry lab (Williams College; Fall 1996)  
Teaching Assistant for advanced intro to chemistry research lab (Williams College; Fall 1995)  
Research Intern to Dr. Jonathan Friedman (Arecibo Observatory; Summer 1995)  
Teaching Assistant for intro astronomy observing lab (Williams College; 1994 - 1995)  
Research Intern to Dr. Eileen Friel (Maria Mitchell Observatory REU; Summer 1994)  
Student Assistant to Dr. Caty Pilachowski (Kitt Peak National Observatory; Feb. 1992 - June 1993)

### Grants, Awards, and Honors:

NSF Astronomy and Astrophysics Postdoctoral Fellowship (2004 - 2006)  
O.K. Earl Prize Postdoctoral Fellowship in Planetary Science at Caltech (2003 - 2004)  
Mary Elizabeth Uhl Prize for outstanding scholarly achievement in a dissertation (UCB; 2002)  
NASA GSRP Fellowship (1999 - 2002)  
Outstanding Graduate Student Instructor (UCB; 1999)  
Sigma Xi Grant-in-Aid-of-Research (Jan. 1999)  
Elected to Sigma Xi, The Scientific Research Society (1997)  
American Institute of Chemists 1997 Achievement Award

### Current Research Interests:

Titan's seasonal methane meteorology and surface hydrology  
Seasonal cycles and surface interactions of Pluto's atmosphere as revealed by studying methane  
Role of methane on the surfaces and in any atmospheres of the largest Kuiper belt objects  
The search for objects in Sedna-like orbits and their fossil record of solar system formation history

### Service:

Member NASA/IRTF TAC (2004 - 2006)  
Solar system member of the science committee for the Mid-IR High Resolution Echelle Spectrometer (MIREs) on the Thirty Meter Telescope (TMT)  
Regularly agree to participate in grant review panels  
Regularly agree to referee papers in the literature

### Professional Memberships:

American Astronomical Society and its Division for Planetary Sciences  
American Geophysical Union  
Astronomical Society of the Pacific  
Sigma Xi

### Refereed Publications as First Author

1. Roe, H. G., M. E. Brown, E. L. Schaller, A. H. Bouchez, and C. A. Trujillo 2005, *Geographic Control of Titan's Mid-Latitude Clouds*, Science, 310, 477
2. Roe, H. G., A. H. Bouchez, C. A. Trujillo, E. L. Schaller, and M. E. Brown 2005, *Discovery of Temperate Latitude Clouds on Titan*, Astrophysical Journal, 618, L49
3. Roe, H. G., I. de Pater, and C. P. McKay 2004, *Seasonal variation of Titan's stratospheric ethylene (C<sub>2</sub>H<sub>4</sub>) observed*, Icarus, 169, 440
4. Roe, H. G., I. de Pater, S. G. Gibbard, B. A. Macintosh, C. E. Max, E. F. Young, M. E. Brown, and A. H. Bouchez 2004, *A new 1.6-micron map of Titan's surface*, Geophysical Research Letters, 31, 17
5. Roe, H. G., T. K. Greathouse, M. J. Richter, and J. H. Lacy 2003, *Propane on Titan*, Astrophysical Journal, 597, L65
6. Roe, H. G., I. de Pater, B. A. Macintosh, and C. P. McKay 2002, *Titan's Clouds from Gemini and Keck Adaptive Optics Imaging*, Astrophysical Journal, 581, 1399
7. Roe, H. G., I. de Pater, B. A. Macintosh, S. G. Gibbard, C. E. Max, and C. P. McKay 2002, *NOTE: Titan's Atmosphere in Late Southern Spring Observed with Adaptive Optics on the W. M. Keck II 10-Meter Telescope*, Icarus, 157, 254
8. Roe, H. G. 2002, *Implications of Atmospheric Differential Refraction for Adaptive Optics Observations*, Publications of the Astronomical Society of the Pacific, 114, 450
9. Roe, H. G., D. Gavel, C. Max, I. de Pater, S. Gibbard, B. Macintosh, and K. H. Baines 2001, *Near-Infrared Observations of Neptune's Tropospheric Cloud Layer with the Lick Observatory Adaptive Optics System*, Astronomical Journal, 122, 1636
10. Roe, H. G., J. R. Graham, I. S. McLean, I. de Pater, E. E. Becklin, D. F. Figer, A. M. Gilbert, J. E. Larkin, N. A. Levenson, H. I. Teplitz, and M. K. Wilcox 2001, *The Altitude of an Infrared-bright Cloud Feature on Neptune from Near-Infrared Spectroscopy*, Astronomical Journal, 122, 1023

### Refereed Publications as a co-Author

1. Brown, M. E., E. L. Schaller, H. G. Roe, D. L. Rabinowitz, and C. A. Trujillo 2006, *Direct Measurement of the Size of 2003 UB313 from the Hubble Space Telescope*, Astrophysical Journal, 643, L61 2
2. Schaller, E. L., M. E. Brown, H. G. Roe, A. H. Bouchez, and C. A. Trujillo 2006, *Dissipation of Titan's south polar clouds*, Icarus, 184, 517
3. Schaller, E. L., M. E. Brown, H. G. Roe, and A. H. Bouchez 2006, *A large cloud outburst at Titan's south pole*, Icarus, 182, 224
4. Rabinowitz, D.L., K. Barkume, M.E. Brown, H. Roe, M. Schwartz, S. Tourtellotte, & C.A. Trujillo 2006, *Photometric Observations Constraining the Size, Shape, and Albedo of 2003 El61, a Rapidly Rotating, Pluto-Sized Object in the Kuiper Belt*, ApJ, 639, 1238
5. Witasse, O. & 52 co-authors 2006, *Overview of the coordinated ground-based observations of Titan during the Huygens mission*, Journal of Geophysical Research (Planets), 111, 7 (DOI:10.1029/2005JE002640)
6. Lorenz, R. D., O. Witasse, J.-P. Lebreton, T. Blancquaert, I. de Pater, F. Mazoue, H. Roe, M. T. Lemmon, B. J. Burratti, S. Holmes, and K. Noll 2006, *Huygens entry emission: Observation campaign, results, and lessons learned*, Journal of Geophysical Research (Planets), 111, 7 (DOI:10.1029/2005JE002603)
7. de Pater, I., M. Adamkovics, A. H. Bouchez, M. E. Brown, S. G. Gibbard, F. Marchis, H. G. Roe, E. L. Schaller, and E. Young 2006, *Titan imagery with Keck adaptive optics during and after probe entry*, Journal of Geophysical Research (Planets), 111, 7 (DOI:10.1029/2005JE002620)
8. Barnes, J. W. & 34 co-authors 2005, *A 5-Micron-Bright Spot on Titan: Evidence for Surface Diversity*, Science, 310, 92
9. West, R. A., M. E. Brown, S. V. Salinas, A. H. Bouchez, and H. G. Roe 2005, *No oceans on Titan from the absence of a near-infrared specular reflection*, Nature, 436, 670
10. Griffith, C. A., P. Penteado, T. K. Greathouse, H. G. Roe, and R. V. Yelle 2005, *Observations of Titan's Mesosphere*, Astrophysical Journal, 629, L57

11. de Pater, I., S. G. Gibbard, E. Chiang, H. B. Hammel, B. Macintosh, F. Marchis, S. C. Martin, H. G. Roe, and M. Showalter 2005, *The dynamic neptunian ring arcs: evidence for a gradual disappearance of Liberté and resonant jump of courage*, *Icarus*, 174, 263
12. Adamkovics, M., I. de Pater, H. G. Roe, S. G. Gibbard, and C. A. Griffith 2004, *Spatially-resolved spectroscopy at 1.6  $\mu\text{m}$  of Titan's atmosphere and surface*, *Geophysical Research Letters*, 31, 17
13. Gibbard, S. G., I. de Pater, B. A. Macintosh, H. G. Roe, C. E. Max, E. F. Young, and C. P. McKay 2004, *Titan's 2  $\mu\text{m}$  surface albedo and haze optical depth in 1996-2004*, *Geophysical Research Letters*, 31, 17
14. Gibbard, S. G., B. Macintosh, D. Gavel, C. E. Max, I. de Pater, H. G. Roe, A. M. Ghez, E. F. Young, and C. P. McKay 2004, *Speckle imaging of Titan at 2 microns: surface albedo, haze optical depth, and tropospheric clouds 1996-1998*, *Icarus*, 169, 429
15. de Pater, I., F. Marchis, B. A. Macintosh, H. G. Roe, D. Le Mignant, J. R. Graham, and A. G. Davies 2004, *Keck AO observations of Io in and out of eclipse*, *Icarus*, 169, 250
16. Gibbard, S. G., I. de Pater, H. G. Roe, S. Martin, B. A. Macintosh, and C. E. Max 2003, *The altitude of Neptune cloud features from high-spatial-resolution near-infrared spectra*, *Icarus*, 166, 359
17. Max, C. E., B. A. Macintosh, S. G. Gibbard, D. T. Gavel, H. G. Roe, I. de Pater, A. M. Ghez, D. S. Acton, O. Lai, P. Stomski, and P. L. Wizinowich 2003, *Cloud Structures on Neptune Observed with Keck Telescope Adaptive Optics*, *Astronomical Journal*, 125, 364
18. de Pater, I., S. G. Gibbard, B. A. Macintosh, H. G. Roe, D. T. Gavel, and C. E. Max 2002, *Keck Adaptive Optics Images of Uranus and Its Rings*, *Icarus*, 160, 359
19. Marchis, F., I. de Pater, A. G. Davies, H. G. Roe, T. Fusco, D. Le Mignant, P. Descamps, B. A. Macintosh, and R. Prang 2002, *High-Resolution Keck Adaptive Optics Imaging of Violent Volcanic Activity on Io*, *Icarus*, 160, 124
20. de Pater, I., H. Roe, J. R. Graham, D. F. Strobel, and P. Bernath 2002, *NOTE: Detection of the Forbidden  $SO\ a^1\Delta \rightarrow X^3\Sigma^-$  Rovibronic Transition on Io at 1.7  $\mu\text{m}$* , *Icarus*, 156, 296
21. Gibbard, S. G., H. Roe, I. de Pater, B. Macintosh, D. Gavel, C. E. Max, K. H. Baines, and A. Ghez 2002, *High-Resolution Infrared Imaging of Neptune from the Keck Telescope*, *Icarus*, 156, 1
22. Burris, D. L., C. A. Pilachowski, T. E. Armandroff, C. Sneden, J. J. Cowan, and H. Roe 2000, *Neutron-Capture Elements in the Early Galaxy: Insights from a Large Sample of Metal-poor Giants*, *Astrophysical Journal*, 544, 302
23. Koehler, B.G., V.T. Nicholson, H.G. Roe, and E.S. Whitney 1999, *An FTIR Study of the Adsorption of  $SO_2$  on n-Hexane Soot from  $-130^\circ\text{C}$  to  $-40^\circ\text{C}$* . *J. Geophys. Res.*, 104, 5507
24. Friedman, J.S., C.A. Tepley, P.A. Castleberg, and H. Roe 1997. *Middle-atmospheric Doppler lidar using an iodine-vapor edge filter*, *Optics Letters*, 22, 1648

#### Other Publications and Presentations

1. Bauer, J. M., Y. Choi, P. R. Weissman, Y. R. Ferna'ndez, J. A. Stansberry, and H. G. Roe 2006, *Mid-IR Spitzer Observations Of The Active Centaur 60558 Echeclus*, AAS/Division for Planetary Sciences Meeting Abstracts, 38, 44.14
2. Roe, H. G. 2006, *Methane in Pluto's Atmosphere*, AAS/Division for Planetary Sciences Meeting Abstracts, 38, 31.07
3. de Pater, I., C. Laver, F. Marchis, H. Roe, and B. Macintosh 2006, *Spatially Resolved Measurements of  $SO$  Emission on Io, while Eclipsed by Jupiter*, AAS/Division for Planetary Sciences Meeting Abstracts, 38, 30.05
4. Schaller, E. L., M. E. Brown, and H. G. Roe 2006, *Seasonal Change in Titan's Cloud Activity Observed with IRTF/SpeX*, AAS/Division for Planetary Sciences Meeting Abstracts, 38, 27.23
5. Brown, M., C. Trujillo, D. Rabinowitz, H. Roe, H. Schlichting, and B. G. Marsden 2005, *2004 TY364*, *Minor Planet Electronic Circulars*, 11
6. Schaller, E. L., M. E. Brown, H. G. Roe, A. H. Bouchez, and C. A. Trujillo 2005, *Dissipation of Titan's South Polar Clouds*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,

7. Barnes, J. W. & 31 co-authors 2005, *The Brightest Spot on Titan*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
8. Trafton, L. M., J. H. Lacy, H. Roe, and M. Richter 2005, *Detection of Cyanoacetylene on Titan During Southern Summer Near the Epoch of the Huygens Probe Descent*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
9. Roe, H. G., M. E. Brown, E. L. Schaller, A. H. Bouchez, and C. A. Trujillo 2005, *Geographic control of Titan's mid-latitude clouds*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
10. Penteado, P., C. Griffith, T. Greathouse, H. Roe, and R. Yelle 2005, *Measuring Titan's mesospheric temperatures by infrared spectroscopy*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
11. Ingersoll, A. P., H. G. Roe, E. L. Schaller, and M. E. Brown 2005, *Scale Analysis of Convective Activity on Titan: Is the Surface Setting the Time Scale?*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
12. Greathouse, T. K., H. G. Roe, and M. J. Richter 2005, *Evidence for a mesosphere on Saturn and the seasonal variation of temperature between 2002 and 2004 in Saturn's southern hemisphere.*, AAS/Division for Planetary Sciences Meeting Abstracts, 37,
13. van Houten-Groeneveld, I., E. Bowell, H. G. Roe, T. Gehrels, E. M. Shoemaker, C. S. Shoemaker, D. H. Levy, H. E. Schlichting, L. T. Kotredes, M. E. Brown, C. J. van Houten, A. Wisse, and B. A. Skiff 2005, *Minor Planet Observations [675 Palomar Mountain]*, Minor Planet Circulars, 5435, 7
14. Roe, H. G., M. E. Brown, K. M. Barkume, and B. G. Marsden 2005, *Seven TNOs*, Minor Planet Electronic Circulars, 26
15. Schaller, E. L., M. E. Brown, H. G. Roe, A. H. Bouchez, and C. A. Trujillo 2005, *Cloud Activity on Titan During the Cassini Mission*, 36th Annual Lunar and Planetary Science Conference, 36, 1989
16. Greathouse, T. K., H. G. Roe, and M. J. Richter 2005, *Changes in the Temperature of Saturn's Stratosphere from 2002 to 2004 and Direct Evidence of a Mesopause*, 36th Annual Lunar and Planetary Science Conference, 36, 1365
17. Bouchez, A. H., M. E. Brown, E. L. Schaller, and H. G. Roe 2004, *Cloud frequency and wind speed in Titan's troposphere*, AAS/Division for Planetary Sciences Meeting Abstracts, 36, 2017
18. Wong, M. H., I. de Pater, H. G. Roe, and M. R. Showalter 2004, *Groundbased near-IR spectroscopy of Jupiter's main ring*, AAS/Division for Planetary Sciences Meeting Abstracts, 36, 711
19. Schaller, E. L., M. E. Brown, A. H. Bouchez, H. G. Roe, and C. A. Trujillo 2004, *Continuous Monitoring of Titan for Large Cloud Outbursts*, AAS/Division for Planetary Sciences Meeting Abstracts, 36, 609
20. Roe, H. G., E. L. Schaller, M. E. Brown, C. A. Trujillo, and A. H. Bouchez 2004, *Discovery of temperate latitude clouds on Titan*, AAS/Division for Planetary Sciences Meeting Abstracts, 36, 607
21. Martin, S. C., I. de Pater, S. G. Gibbard, P. Marcus, H. G. Roe, B. A. Macintosh, and C. E. Max 2004, *Adaptive Optics imaging of small cloud features on Neptune: zonal wind variability and detections of oscillations in longitude*, AAS/Division for Planetary Sciences Meeting Abstracts, 36, 505
22. de Pater, I., M. Adamkovics, S. Gibbard, H. G. Roe, and C. A. Griffith 2004, *Flight through Titan's atmosphere*, ESA SP-1278: Titan - From Discovery to Encounter, 313
23. Roe, H. G. 2003, *Titan's Atmosphere at High Resolution*, Publications of the Astronomical Society of the Pacific, 115, 1262
24. de Pater, I., S. Gibbard, S. Martin, F. Marchis, H. G. Roe, and B. Macintosh 2003, *Keck Adaptive Optics Observations of Neptune's Ring and Satellite Keck Adaptive Optics Observations of Neptune's Ring and Satellite System*, AAS/Division for Planetary Sciences Meeting Abstracts, 35, 2002
25. Roe, H. G., T. K. Greathouse, M. J. Richter, and J. H. Lacy 2003, *Propane on Titan*, AAS/Division for Planetary Sciences Meeting Abstracts, 35, 1201
26. de Pater, I., F. Marchis, B. A. Macintosh, H. G. Roe, D. Le Mignant, and J. R. Graham 2003, *Keck AO observations of Io in and out of eclipse*, Discoveries and Research Prospects from 6- to 10-Meter-Class Telescopes II. Edited by Guhathakurta, Puragra. Proceedings of the SPIE, Volume 4834, pp. 139-149 (2003)., 4834, 139

27. Roe, H. G. 2002, *Titan's atmosphere at high-resolution*, Ph.D. Thesis.
28. Marchis, F., I. de Pater, D. Le Mignant, H. G. Roe, T. Fusco, J. R. Graham, R. Prange, and B. Macintosh 2002, *Monitoring Io volcanic activity using the Keck AO system: 2-5  $\mu\text{m}$  sunlit and eclipse observations*, AGU Fall Meeting Abstracts, 460
29. Marchis, F., I. de Pater, D. Le Mignant, H. Roe, T. Fusco, J. R. Graham, R. Prange, B. Macintosh, and Keck Science Team 2002, *Volcanic activity of Io observed in December 2001 with the Keck AO system: 2-5  $\mu\text{m}$  sunlit and eclipse observations*, Bulletin of the American Astronomical Society, 34, 914
30. Lunine, J. I., H. Roe, and G. H. Atkinson 2002, *Very Long Pathlength Near-IR Spectra of Methane for Application to Titan*, Bulletin of the American Astronomical Society, 34, 908
31. Roe, H. G., I. de Pater, B. A. Macintosh, and C. P. McKay 2002, *South polar clouds on Titan imaged with adaptive optics on the Gemini and Keck telescopes*, Bulletin of the American Astronomical Society, 34, 881
32. Gibbard, S. G., I. de Pater, S. C. Martin, H. G. Roe, B. A. Macintosh, and C. E. Max 2002, *Spatially-resolved K-band Spectra of Neptune from the W.M. Keck Telescope*, Bulletin of the American Astronomical Society, 34, 874
33. Martin, S. C., I. de Pater, S. G. Gibbard, B. A. Macintosh, H. G. Roe, and C. E. Max 2002, *The Motions and Morphologies of cloud features on Neptune: continued monitoring with Keck Adaptive Optics*, Bulletin of the American Astronomical Society, 34, 858
34. Gibbard, S. G., B. A. Macintosh, C. E. Max, H. Roe, I. de Pater, E. F. Young, and C. P. McKay 2002, *The surface of Titan from adaptive optics observations*, Highlights in Astronomy, 12, 629
35. Gibbard, S. G., B. A. Macintosh, C. E. Max, I. de Pater, H. G. Roe, and F. Marchis 2001, *2-micron Adaptive Optics Images of Titan from the W.M. Keck Telescope*, Bulletin of the American Astronomical Society, 33, 1403
36. Roe, H. G., I. de Pater, and C. P. McKay 2001, *Observations of the Spatial Distribution of Ethylene ( $\text{C}_2\text{H}_4$ ) on Titan*, Bulletin of the American Astronomical Society, 33, 1135
37. de Pater, I., H. G. Roe, J. R. Graham, D. F. Strobel, P. Bernath, F. Marchis, and B. Macintosh 2001, *Io in Eclipse: Keck LWS Images and the Detection of the Forbidden  $\text{SO } a^1\Delta \rightarrow X^3\Sigma^-$  Rovibronic Transition at 1.7 micron.*, Bulletin of the American Astronomical Society, 33, 1082
38. Martin, S. C., I. de Pater, H. Roe, B. Macintosh, S. Gibbard, and C. E. Max 2001, *The Morphology and Motions of storm features on Neptune on minute and hour timescales*, Bulletin of the American Astronomical Society, 33, 1079
39. Marchis, F., I. de Pater, T. Fusco, A. Davies, H. Roe, D. Le Mignant, B. Macintosh, and R. Prangé 2001, *A strong volcanic outburst on Io as observed with the Keck AO system*, Bulletin of the American Astronomical Society, 33, 1063
40. Roe, H. G., I. de Pater, and C.P. McKay 2001. *Mapping Titan's Atmosphere with Keck LWS*. Talk at Keck Science Meeting, Pasadena, October 2001
41. Roe, H. G., I. de Pater, S. Martin, F. Marchis, B. Macintosh, S. Gibbard, and C.E. Max 2001. *An Adaptive Optics Gallery of the Solar System*. Poster at CfAO Integrating Education and Research Workshop, Kona, April 2001
42. Roe, H. G. 2001. *Implications of Differential Refraction for AO Observing*. Poster at CfAO Integrating Education and Research Workshop, Kona, April 2001
43. de Pater, I., F. Marchis, H. Roe, B. Macintosh, S. Acton, D. Le Mignant, and W. M. Keck 2001, *Volcanic outburst on Jupiter I (Io)*, International Astronomical Union Circular, 7588, 2
44. Brown, M. E., J. L. Margot, W. M. Keck, I. de Pater, and H. Roe 2001, *Discovery and confirmation of satellite to (87) Sylvia; S/2001 (87) 1*, International Astronomical Union Circular, 7588, 1
45. Max, C. E., D. Whysong, B. A. Macintosh, R. Antonucci, and H. Roe 2000, *Adaptive optics observations of NGC 6240 at the Keck and Lick Observatories*, Bulletin of the American Astronomical Society, 32, 1491
46. de Pater, I., H. Roe, B. Macintosh, S. Gibbard, C. Max, and D. Gavel 2000, *Keck Adaptive Optics Imaging of Uranus and its Rings*, Bulletin of the American Astronomical Society, 32, 1086

47. Gibbard, S. G., B. Macintosh, C. E. Max, H. Roe, I. de Pater, E. F. Young, and C. P. McKay 2000, *Adaptive Optics Observations of Titan from the W.M. Keck Telescope*, Bulletin of the American Astronomical Society, 32, 1025
48. Roe, H. G., I. de Pater, S. G. Gibbard, B. Macintosh, C. E. Max, and C. P. McKay 2000, *Near- and mid-Infrared Resolved Imaging of Titan's Atmosphere*, Bulletin of the American Astronomical Society, 32, 1023
49. Roe, H. G., I. de Pater, S.G. Gibbard, B. Macintosh, C.E. Max, and C.P. McKay 2000, *Discovery of a Haze Belt around Titan's South Pole*, Talk at Keck Science Meeting, Santa Cruz, October 2000
50. Martin, S. C., H. Roe, I. de Pater, B. Macintosh, S. Gibbard, C. E. Max, D. Gavel, M. Brown, and A. Ghez 2000, *The Evolution of Cloud Features on Neptune over a 20-day time period*, Bulletin of the American Astronomical Society, 32, 1009
51. Max, C. E., B. A. Macintosh, S. Gibbard, D. T. Gavel, H. Roe, I. de Pater, A. M. Ghez, S. Acton, P. L. Wizinowich, and O. Lai 2000, *Neptune and Titan observed with Keck Telescope adaptive optics*, Proc. SPIE Vol. 4007, p. 803-810, Adaptive Optical Systems Technology, Peter L. Wizinowich; Ed., 4007, 803
52. Gibbard, S. G., B. Macintosh, C. Max, H. Roe, I. de Pater, E. F. Young, and C. P. McKay 2000, *The Surface of Titan from Adaptive Optics Observations*, Highlights of Planetary Exploration from Space and from Earth, 24th meeting of the IAU, Joint Discussion 12, August 2000, Manchester, England, meeting abstract., 12, 11
53. Max, C., B. Macintosh, S. Gibbard, H. Roe, I. de Pater, A. Ghez, S. Acton, P. Wizinowich, and O. Lai 1999, *Adaptive Optics Imaging of Neptune and Titan with the W.M. Keck Telescope*, Bulletin of the American Astronomical Society, 31, 1512
54. Macintosh, B., C. E. Max, H. Roe, S. Gibbard, D. Gavel, S. Acton, O. Lai, P. Wizinowich, I. de Pater, A. Ghez, and K. Baines 1999, *Adaptive Optics Imaging of Neptune with the W.M. Keck Telescope*, AAS/Division for Planetary Sciences Meeting Abstracts, 31, 6506
55. Roe, H., J.R. Graham, I. de Pater, S. Gibbard, B. Macintosh, C. Max, K. Baines, A.M. Gilbert, I.S. McLean, E.E. Becklin, D.F. Figer, J.E. Larkin, N.A. Levenson, H.I. Teplitz, and M.K. Wilcox 1999. *Near-Infrared Spectroscopic Investigation of Neptune's Hazes and Storms*. Poster at Keck Science Meeting, Pasadena, October 1999.
56. Roe, H., J. R. Graham, I. de Pater, S. Gibbard, B. Macintosh, C. Max, K. Baines, A. M. Gilbert, I. S. McLean, E. E. Becklin, D. F. Figer, J. E. Larkin, N. A. Levenson, H. I. Teplitz, M. K. Wilcox, and NIRSPEC Team 1999, *Near-Infrared Spectroscopic Investigation of Neptune's Hazes and Storms at the Keck Telescope*, AAS/Division for Planetary Sciences Meeting Abstracts, 31,
57. Koehler, B.G., A.H. Muentner, V.T. Nicholson, H.G. Roe, and E.S. Whitney 1998. *An FTIR Study of the Adsorption of SO<sub>2</sub> on n-Hexane Soot from -130° C to -40° C*. December 1998 AGU Meeting in San Francisco, CA, in EOS 79, F125.
58. Gibbard, S. G., B. Macintosh, C. E. Max, D. Gavel, I. de Pater, H. Roe, E. F. Young, and C. P. McKay 1999, *High-Resolution Infrared Speckle Imaging of Titan: Haze and Surface Properties*, AAS/Division for Planetary Sciences Meeting Abstracts, 31,
59. Roe, H.G. 1997, *An FT-IR study of the interactions of sulfur dioxide and soot from -100° C to -150° C*. Talk at American Chemical Society Connecticut Valley 17th annual Undergraduate Research Symposium, April 1997.
60. Roe H.G. 1997, *An FT-IR study of the interactions of sulfur dioxide and soot from -100° C to -150° C.*, Senior thesis in the Chemistry Department of Williams College
61. Koehler, B.G., H.G. Roe, and E.S. Whitney 1996, *Adsorption of SO<sub>2</sub> on Soot With and Without Water Vapor*. December 1996 AGU Meeting in San Francisco, CA, in EOS 77.
62. Roe, H. G., C. Pilachowski, and T. Armandroff 1994, *Barium Abundances in Metal Poor Giants*, Bulletin of the American Astronomical Society, 26, 1482
63. Roe, H. 1994, *A Preliminary Color-Magnitude Diagram for the Old Open Cluster NGC 6939*, Proceedings of the 1994 Undergraduate Symposium on Research in Astronomy, 60
64. Numerous other talks and posters at smaller workshops and conferences.