

# Gregory C. Sloan

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## Education

**Ph.D. Physics** (Astrophysics Program), University of Wyoming 1992  
*Spatially Resolved 10 Micron Spectra of Circumstellar Material around Evolved Stars*  
Research advisors: Ron Canterna and Gary Grasdalen.

**B.A. Physics and Astronomy**, Northwestern University 1985

## Teaching Experience

**Lecturer**, Ithaca College 2006-2007  
Taught the introductory course on planetary astronomy.

**Guest Lecturer**, Cornell University and Ithaca College 2004-2005  
Assisted Jim Houck with an introductory astrophysics course for engineers and science majors.

**Senior Instructor**, Virginia Polytechnic Institute and State University 1999-2000  
Lectured 150-200 students per semester in 2-3 parallel lectures in (1) general physics for engineers and scientists (with calculus) and (2) physics for biologists (without calculus).

**Visiting Lecturer**, University of New England, Australia 1996-1998  
Lectured and improved the introductory astronomy course for non-majors (second semester 1996, 1997, and 1998). Rewrote much of the 134-page study guide and developed several new laboratory exercises. The course included an external section, whose students attended a special one-week series of intensive lectures, experiments, and observing sessions.

**Visiting Instructor**, University of Montana 1991  
Responsible for two concurrent summer courses for non-majors, one on planetary astronomy and the other on stellar and galactic astronomy.

**Instructor and Teaching Assistant**, University of Wyoming 1985-1991

- Taught the eight-week summer survey course for non-majors (1986 and 1988).
- Lab. instructor and T.A. for introductory and general astronomy.
- Developed and wrote a lab manual for general astronomy (for majors).
- Lab. instructor and T.A. for general physics and physics for liberal arts majors.

## Astronomy Outreach and Public Education

Project Astro, both in the San Francisco Bay area and the Boston area.  
Extensive outreach at Cornell, including workshops for teachers and talks at the Sciencenter, for amateur astronomy organizations, and area schools.  
Organized and participated in numerous star parties and eclipse viewing events.

## Grants and Fellowships

Spitzer Space Telescope observing awards, totalling \$265,000 2004-2010  
National Science Foundation International Research Fellowship 1997-1998  
National Research Council Fellowship 1994-1997  
Geophysics and Phillips Laboratory Scholar Fellowships 1992-1994

**Website** <http://isc.astro.cornell.edu/~sloan/>

## Research Interests

Infrared spectroscopy of circumstellar dust in shells and disks.  
Polycyclic aromatic hydrocarbons (PAHs) and related carbon-rich dust.  
Infrared properties of cool stellar and sub-stellar atmospheres.

## Research Experience

**Research Astronomer**, Cornell University 2001-present

Primarily responsible for the calibration of the Infrared Spectrometer on the *Spitzer Space Telescope*. Also conducting extensive research on mass loss from stars in Local Group galaxies, disks around young stars, atmospheres of cool stars, and brown dwarfs. Supervisor: Jim Houck.

**Senior Astronomer**, Boston College 2000-2002

Produced a publically accessible database of all full-scan spectra from the Short Wavelength Spectrometer on the *Infrared Space Observatory*. Used this database to develop a comprehensive infrared spectral classification system and analyze spectra from circumstellar dust shells. Supervisor: Stephan Price.

**NSF International Research Fellow**, Australian Defence Force Academy 1997-1998

Studied deviations from spherical symmetry in dust shells around evolved stars using mid-infrared imaging. Advisor: Craig H. Smith.

**National Research Council Associate**, NASA Ames Research Center 1994-1997

Studied polycyclic aromatic hydrocarbons (PAHs) using narrow-band imaging and long-slit spectroscopy. Advisor: Jesse Bregman.

**Geophysics Scholar** and **Phillips Laboratory Scholar**, Air Force Phillips Lab. 1992-1994

Improved the Air Force Geophysics Lab. Array Detector Spectrometer (GLADYS). Also developed a spectral classification system for circumstellar dust shells with data from the Low-Resolution Spectrometer aboard the *Infrared Astronomical Satellite*. Advisor: Stephan Price.

**Research Assistant**, University of Wyoming 1986-1990

Developed a data acquisition system for the Air Force Spectrometer (GLADYS) at the Wyoming Infrared Observatory. Developed techniques for observing, analyzing data, and deconvolving spectra to exploit the spatial information in long-slit spectral images. Studied spatially extended circumstellar dust shells. Supervisor: Gary Grasdalen.

**Summer Research Assistant**, Air Force Geophysics Laboratory 1987

Developed data reduction techniques for GLADYS. Supervisor: Paul LeVan.

**Research Aide**, Northwestern University 1983-1985

Helped compile catalogs of MK spectral classifications. Supervisor: William Buscombe.

## Professional Associations

International Astronomical Union  
American Astronomical Society

**Refereed Publications**

- Leisenring, J.M., Markwick-Kemper, F., & **Sloan, G.C.** 2008, "Effects of metallicity on the chemical composition of carbon stars," *ApJ*, submitted.
- Keller, L.D., **Sloan, G.C.**, Forrest, W.J., D'Alessio, P., Ayala, S., Shah, S., Calvet, N., Hartmann, L., Najita, J., Sargent, B., Li, A., Watson, D.M., & Chen, C.H. 2008, "PAH emission from Herbig Ae/Be stars," *ApJ*, submitted.
- Watson, D.M., Leisenring, J.M., Furlan, E., Bohac, C.J., Sargent, B., Forrest, W.J., Calvet, N., Hartmann, L., Nordhaus, G.T., Green, J.D., Kim, K.H., **Sloan, G.C.**, Chen, C.H., Keller, L.D., d'Alessio, P., Najita, J., Uchida, K.I., & Houck, J.R. 2008, "Crystalline silicates and dust processing in the protoplanetary disks of the Taurus young cluster," *ApJ Supplement*, submitted.
- Matsuura, M., Zijlstra, A.A., Bernard-Salas, J., Menzies, J.W., **Sloan, G.C.**, Whitelock, P.A., Wood, P.R., Cioni, M.-R.L., Feast, M.W., Lagadec, E., van Loon, J.Th., Groenewegen, M.A.T., & Harris, G.J. 2007, "*Spitzer Space Telescope* spectral observations of AGB stars in the Fornax dwarf spheroidal galaxy," *MNRAS*, in press.
- Sloan, G.C.**, Jura, M., Duley, W.W., Kraemer, K.E., Bernard-Salas, J., Forrest, W.J., Sargent, B., Li, A., Barry, D.J., Bohac, C.J., Watson, D.M., & Houck, J.R. 2007, "The unusual hydrocarbon emission from the early carbon star HD 100764: The connection between aromatics and aliphatics," *ApJ*, **664**, 1144.
- Mainzer, A.K., Roellig, T.L., Marley, M.S., Saumon, D., Cushing, M.C., **Sloan, G.C.**, Kirkpatrick, J.D., Leggett, S.K., & Wilson, J.C. 2007, "Moderate resolution *Spitzer* Infrared Spectrograph (IRS) observations of M, L, and T dwarfs," *ApJ*, **662**, 1245.
- Lagadec, E., Zijlstra, A.A., **Sloan, G.C.**, Matsuura, M., Wood, P., Harris, G.J., van Loon, J.Th., Blommaert, J.A.D.L., Hony, S., Groenewegen, M.A.T., Feast, M.W., Whitelock, P.A., Menzies, J.W., Cioni, M.-R., Habing, H., & Waters, L.B.F.M. 2007, "*Spitzer* mid-infrared spectra of AGB stars in the Small Magellanic Cloud," *MNRAS*, **376**, 1270.
- Groenewegen, M.A.T., Wood, P.R., **Sloan, G.C.**, Blommaert, J.A.D.L., Cioni, M.-R.L., Feast, M.W., Hony, S., Matsuura, M., Menzies, J.W., Olivier, E.A., Vanhollebeke, E., van Loon, J.Th., Whitelock, P.A., Zijlstra, A.A., Habing, H.J., Lagadec, E., Loup, C., & Waters, L.B.F.M. 2007, "Luminosities and mass-loss rates of carbon stars in the Magellanic Clouds," *MNRAS*, **376**, 313.
- Armus, L., Charmandaris, V., Bernard-Salas, J., Spoon, H.W.W., Marshall, J.A., Higdon, S.J.H., Desai, V., Teplitz, H.I., Hao, L., Devost, D., Brandl, B.R., Wu, Y., **Sloan, G.C.**, Soifer, B.T., Houck, J.R., & Herter, T.L. 2007, "Observations of ultraluminous infrared galaxies with the Infrared Spectrograph on the *Spitzer Space Telescope* II: The IRAS bright galaxy sample," *ApJ*, **656**, 148.
- Brandl, B.R., Bernard-Salas, J., Spoon, H.W.W., Devost, D., **Sloan, G.C.**, Guilles, S., Wu, Y., Marshall, J.A., Armus, L., Weedman, D.W., Charmandaris, V., Appleton, P., Soifer, B.T., Hao, L., Higdon, S.J., Herter, T.L., & Houck, J.R. 2006, "The mid-IR properties of starburst galaxies from *Spitzer*-IRS spectroscopy," *ApJ*, **653**, 1129.
- Bernard-Salas, J., Peeters, E., **Sloan, G.C.**, Cami, J., Guiles, S. & Houck, J.R. 2006, "The *Spitzer*-IRS spectrum of SMP LMC 11," *ApJ Letters*, **652**, L29.

**Refereed Publications** (continued)

- Kraemer, K.E., **Sloan, G.C.**, Bernard-Salas, J., Price, S.D., Egan, M.P., & Wood, P.R. 2006, "A post-AGB star in the Small Magellanic Cloud observed with the *Spitzer* Infrared Spectrograph," *ApJ Letters*, **652**, L25.
- Chen, C.H., Sargent, B.A., Bohac, C., Kim, K.H., Leibensperger, E., Jura, M., Najita, J., Forrest, W.J., Watson, D.M., **Sloan, G.C.**, & Keller, L.D. 2006, "*Spitzer* IRS spectroscopy of IRAS-discovered debris disks," *ApJ Supplement*, **166**, 351.
- Cushing, M.C., Roellig, T.L., Marley, M.S., Saumon, D., Leggett, S.K., Kirkpatrick, J.D., Wilson, J.C., **Sloan, G.C.**, Mainzer, A.K., Van Cleve, J.E., & Houck, J.R. 2006, "A *Spitzer* Infrared Spectrograph (IRS) spectral sequence of M, L, and T dwarfs," *ApJ*, **648**, 614.
- Matsuura, M., Wood, P.R., **Sloan, G.C.**, Zijlstra, A.A., van Loon, J.Th., Groenewegen, M.A.T., Blommaert, J., Cioni, M.-R., Feast, M.W., Habing, H., Hony, S., Lagadec, E., Loup, C., Menzies, J., Waters, L.B.F.M., & Whitelock, P.A., 2006, "*Spitzer* observations of acetylene bands in carbon-rich AGB stars in the Large Magellanic Cloud," *MNRAS*, **371**, 415.
- Zijlstra, A.A., Matsuura, M., Wood, P.R., **Sloan, G.C.**, Lagadec, E., van Loon, J.Th., Groenewegen, M.A.T., Feast, M.W., Menzies, J.W., Whitelock, P.A., Blommaert, J., Cioni, M.-R., Habing, H., Hony, S., Loup, C., & Waters, L.B.F.M. 2006, "A *Spitzer* mid-infrared spectral survey of mass-losing carbon stars in the Large Magellanic Cloud," *MNRAS*, **370**, 1961.
- Sloan, G.C.**, Kraemer, K.E., Matsuura, M., Wood, P.R., Price, S.D., & Egan, M.P. 2006, "Mid-infrared spectroscopy of carbon stars in the Small Magellanic Cloud," *ApJ*, **645**, 1118.
- Sargent, B., Forrest, W.J., Najita, J., Li, A., D'Alessio, P., Calvet, N., Furlan, E., Green, J.D., Kim, K.H., Watson, D.M., **Sloan, G.C.**, Uchida, K.I., Markwick-Kemper, F., Chen, C.H., Hartmann, L., Keller, L.D., Herter, T.L., Brandl, B.R., Houck, J.R., Barry, D.J., Hall, P., Morris, P.W., & Myers, P.C. 2007, "Dust processing in disks around T-Tauri type stars," *ApJ*, **645**, 395.
- Spoon, H.W.W., Tielens, A.G.G.M., Armus, L., **Sloan, G.C.**, Sargent, B., Cami, J., Charmandaris, V., Houck, J.R., & Soifer, B.T. 2006, "The detection of crystalline silicates in ultra-luminous infrared galaxies," *ApJ*, **638**, 759.
- Sloan, G.C.**, Devost, D., Bernard-Salas, J., Wood, P.R., & Houck, J.R. 2006, "The unusual silicate dust around HV 2310, an evolved star in the Large Magellanic Cloud," *ApJ*, **638**, 472.
- Jura, M., Bohac, C.J., Sargent, B., Forrest, W.J., Green, J., Watson, D.M., **Sloan, G.C.**, Marckwick-Kemper, F., Chen, C.H., & Najita, J. 2006, "Polycyclic aromatic hydrocarbons orbiting HD 233517, an evolved oxygen-rich giant," *ApJ Letters*, **637**, L45.
- van Loon, J.Th., Oliveira, J.M., Wood, P.R., Zijlstra, A.A., **Sloan, G.C.**, Matsuura, M., Whitelock, P.A., Groenewegen, M.A.T., Bloemmaert, J.A.D.L., Cioni, M.-R.L., Hony, S., Loup, C., & Waters, L.B.F.M. 2005, "ESO-VLT and *Spitzer* spectroscopy of IRAS 05328-6827: A massive protostar in the Large Magellanic Cloud," *MNRAS*, **364**, 71.
- Sloan, G.C.**, Keller, L.D., Leibensperger, E., Forrest, W.J., Li, A., Najita, J., Watson, D.M., Chen, C.H., Green, J.D., Kemper, F., Hartmann, L., Herter, T.L., Calvet, N., D'Alessio, P., Furlan, E., Sargent, B., Morris, P.W., Barry, D.J., Hall, P., Brandl, B.R., Myers, P.C., & Houck, J.R. 2005, "Mid-infrared spectra of PAH emission in Herbig AeBe stars," *ApJ*, **632**, 956.

**Refereed Publications** (continued)

- Kraemer, K.E., **Sloan, G.C.**, Wood, P.R., Price, S.D., & Egan, M.P. 2005, "R CrB candidates in the Small Magellanic Cloud: Observations of cold, featureless dust with the *Spitzer* Infrared Spectrograph," *ApJ Letters*, **631**, L147.
- Hartmann, L., Calvet, N., Watson, D.M., D'Alessio, P., Furlan, E., Sargent, B., Forrest, W.J., Uchida, K.I., Green, J.D., **Sloan, G.C.**, Chen, C.H., Najita, J., Markwick-Kemper, F., Herter, T.L., Morris, P., Barry, D.J., & Hall, P. 2005, "The accretion disk of the lithium-depleted young binary St 34," *ApJ Letters*, **628**, L147.
- Hao, L., Spoon, H.W.W., **Sloan, G.C.**, Marshall, J.A., Armus, L., Tielens, A.G.G.M., Sargent, B., van Bemmell, I.M., Charmandaris, V., Weedman, D.W., & Houck, J.R. 2005, "The detection of silicate emission from quasars at 10 and 18 microns," *ApJ Letters*, **625**, L75.
- Furlan, E., Calvet, N., D'Alessio P., Hartmann, L., Forrest, W.J., Watson, D.M., Luhman, K.L., Uchida, K.I., Green, J.D. Green, Sargent, B., Najita, J., **Sloan, G.C.**, Keller, L.D., & Herter, T.L. 2005, "*Spitzer* IRS spectra of young stars near the hydrogen burning mass limit," *ApJ Letters*, **621**, L129.
- D'Alessio, P., Hartmann, L., Calvet, N., Franco-Hernandez, R., Forrest, W.J., Sargent, B., Furlan, E., Uchida, K., Green, J.D., Watson, D.M., Chen, C.H., Kemper, F., **Sloan, G.C.**, & Najita, J., 2005, "The truncated disk of CoKu Tau/4," *ApJ*, **621**, 461.
- Higdon, S.J.U., Devost, D., Higdon, J.L., Brandl, B.R., Houck, J.R., Hall, P., Barry, D., Charmandaris, V., Smith, J.D.T., **Sloan, G.C.**, & Green, J. 2004, "The SMART data analysis package for the Infrared Spectrograph on the *Spitzer Space Telescope*," *PASP*, **116**, 975.
- Sloan, G.C.**, Charmandaris, V., Fajardo-Acosta, S.B., Shupe, D.L., Morris, P.W., Su, K.Y.L., Hines, D.C., Rho, J., & Engelbracht, C.W. 2004, "The serendipitous discovery of a debris disk around the A dwarf HD 46190," *ApJ Letters*, **614**, L77.
- Jura, M., Chen, C.H., Furlan, E., Green, J., Sargent, B., Forrest, W.J., Watson, D.M., Barry, D.J., Hall, P., Herter, T.L., Houck, J.R., **Sloan, G.C.**, Uchida, K., D'Alessio, P., Calvet, N., Hartmann, L., & Myers, P.C. 2004, "Mid-infrared spectra of dust debris around main-sequence stars," *ApJ Supplement*, **154**, 453.
- Forrest, W.J., Sargent, B., Furlan, E., D'Alessio, P., Calvet, N., Hartmann, L., Uchida, K.I., Green, J.D., Watson, D.M., Chen, C.H., Kemper, F., Keller, L.D., **Sloan, G.C.**, Herter, T.L., Brandl, B.R., Houck, J.R., Barry, D.J., Hall, P., Morris, P.W., Najita, J., & Myers, P.C. 2004, "Mid-infrared spectroscopy of disks around classical T Tauri stars," *ApJ Supplement*, **154**, 443.
- Uchida, K.I., Calvet, N., Hartmann, L., Kemper, F., Forrest, W.J., Watson, D.M., D'Alessio, P., Chen, C.H., Furlan, E., Sargent, B., Brandl, B.R., Herter, T.L., Morris, P., Myers, P.C., Najita, J., **Sloan, G.C.**, Barry, D.J., Green, J., Keller, L.D., & Hall, P. 2004, "The state of protoplanetary material 10 million years after stellar formation: Circumstellar disks in the TW Hydrae Association," *ApJ Supplement*, **154**, 439.
- Roellig, T.L., Van Cleve, J.E., **Sloan, G.C.**, Wilson, J.C., Saumon, D., Leggett, S.K., Marley, M.S., Cushing, C., Kirkpatrick, J.D., Mainzer, A.K., & Houck, J.R. 2004, "Spitzer Infrared Spectrograph (IRS) Observations of M, L, and T dwarfs," *ApJS*, **154**, 418.

**Refereed Publications** (continued)

- Watson, D.M., Kemper, F., Calvet, N., Keller L.D., Furlan, E., Hartmann, L., Forrest, W.J., Chen, C.H., Uchida, K.I., Green, J.D., Sargent, B., **Sloan, G.C.**, Herter, T.L., Brandl, B.R., Houck, J.R., Najita, J., D'Alessio, P., Myers, P.C., Barry, D.J., Hall, P., & Morris, P.W., 2004, "Mid-infrared spectra of Class I protostars in Taurus," *ApJ Supplement*, **154**, 391.
- Bernard-Salas, J., Houck, J.R., Morris, P.W., **Sloan, G.C.**, Pottasch, S.R., & Barry, D.J. 2004, "*Spitzer* Infrared Spectrograph (IRS) observations of Large Magellanic Cloud planetary nebula SMP 83," *ApJ Supplement*, **154**, 271.
- Devost, D., Brandl, B.R., Armus, L., Barry, D.J., **Sloan, G.C.**, Charmandaris, V., Spoon, H., Bernard-Salas, J., & Houck, J.R. 2004, "*Spitzer* Infrared Spectrograph (IRS) mapping of the inner kiloparsec of NGC 253: Spatial distribution of the [Ne III], polycyclic aromatic hydrocarbon 11.3 micron, and H<sub>2</sub> (0-0) S(1) lines and a gradient in the [Ne III]/[Ne II] line ratio," *ApJ Supplement*, **154**, 242.
- Armus, L., Charmandaris, V., Spoon, H.W.W., Houck, J.R., Soifer, B.T., Brandl, B.R., Appleton, P.N., Teplitz, H.I., Higdon, S.J.U., Weedman, D.W., Devost, D., Morris, P.W., Uchida, K.I., van Cleve, J., Barry, D.J., **Sloan, G.C.**, Grillmair, C.J., Burdorf, M.J., Fajardo-Acosta, S.B., Ingalls, J.G., Higdon, J., Hao, L., Bernard-Salas, J., Herter, T., Troeltzsch, J., Unruh, B., & Winghart, M. 2004, "Observations of ultraluminous infrared galaxies with the Infrared Spectrograph (IRS) on the *Spitzer Space Telescope*: Early results on Markarian 1014, Markarian 463, and UGC 5101," *ApJ Supplement*, **154**, 178.
- Houck, J.R., Roellig, T.L., van Cleve, J., Forrest, W.J., Herter, T., Lawrence, C.R., Matthews, K., Reitsema, H.J., Soifer, B.T., Watson, D.M., Weedman, D., Huisjen, M., Troeltzsch, J., Barry, D.J., Bernard-Salas, J., Blacken, C.E., Brandl, B.R., Charmandaris, V., Devost, D., Gull, G.E., Hall, P., Henderson, C.P., Higdon, S.J.U., Pirger, B.E., Schoenwald, J. **Sloan, G.C.**, Uchida, K.I., Appleton, P.N., Armus, L., Burgdorf, M.J., Fajardo-Acosta, S.B., Grillmair, C.J., Ingalls, J.G., Morris, P.W., & Teplitz H.I. 2004, "The Infrared Spectrograph (IRS) on the *Spitzer Space Telescope*," *ApJ Supplement*, **154**, 18.
- Sloan, G.C.**, Kraemer, K.E., Goebel, J.H., & Price, S.D. 2003, "Guilt by association: The 13  $\mu$ m dust emission feature and its correlation to other gas and dust features," *ApJ*, **594**, 483.
- Sloan, G.C.**, Kraemer, K.E., Price, S.D., & Shipman, R.F. 2003, "A uniform database of 2.4-45.2  $\mu$ m spectra from the *ISO* Short Wavelength Spectrometer," *ApJS*, **147**, 379
- Kraemer, K.E., **Sloan, G.C.**, Price, S.D., & Walker, H.J. 2002, "Classification of 2.4-45.2  $\mu$ m spectra from the *ISO* Short Wavelength Spectrometer," *ApJS*, **140**, 389.
- Price, S.D., **Sloan, G.C.**, & Kraemer, K.E. 2002, "Artifacts at 4.5 and 8.0 microns in Short-Wavelength Spectra from the *Infrared Space Observatory*," *ApJ Letters*, **565**, L55.
- Egan, M.P. & **Sloan, G.C.** 2001, "The physical basis for the silicate dust sequence," *ApJ*, **558**, 165.
- Bregman, J.D., Hayward, T.L., & **Sloan, G.C.** 2000, "Discovery of the 11.2 micron polycyclic aromatic hydrocarbon band in absorption toward Monoceros R2," *ApJ Letters*, **544**, L75.
- Sloan, G.C.**, Hayward, T.L., Allamandola, L.J., Bregman, J.D., Devito, B., & Hudgins, D.M. 1999, "Direct spectroscopic evidence for ionized PAHs in the interstellar medium," *ApJ Letters*, **513**, L65.

**Refereed Publications** (continued)

- Sloan, G.C.** & Price, S.D. 1998, "The silicate dust sequence: infrared spectral classification of oxygen-rich circumstellar dust," *ApJS*, **119**, 141.
- Sloan, G.C.**, Little-Marenin, I.R., & Price, S.D. 1998, "The carbon-rich dust sequence: infrared spectral classification of carbon stars," *AJ*, **115**, 809.
- Sloan, G.C.**, Bregman, J.D., Geballe, T.R., Allamandola, L.J., & Woodward, C.E. 1997, "Variations in the 3  $\mu$ m spectrum across the Orion Bar: PAHs and related molecules," *ApJ*, **474**, 735.
- Geballe, T.R., Kulkarni, S.R., Matthews, K., Woodward, C.E., & **Sloan, G.C.** 1996, "The near-infrared spectrum of the recently discovered brown dwarf Gliese 229B," *ApJ Letters*, **467**, L101.
- Sloan, G.C.**, LeVan, P.D., & Little-Marenin, I.R. 1996, "Sources of the 13  $\mu$ m emission feature associated with oxygen-rich circumstellar dust," *ApJ*, **463**, 310.
- Hickman, M.A., **Sloan, G.C.**, & Canterna, R. 1995, "An infrared color-magnitude relationship," *AJ*, **110**, 2910.
- Sloan, G.C.** & Price, S.D. 1995, "Silicate emission at 10 microns in variables on the asymptotic giant branch," *ApJ*, **451**, 758.
- Sloan, G.C.** & Egan, M.P. 1995, "The structure of the dust shells around IRC+10216," *ApJ*, **444**, 452.
- Sloan, G.C.**, Grasdalen, G.L., & LeVan, P.D. 1993, "Spatially resolved spectra of the unidentified infrared features around HD 44179 (the Red Rectangle)," *ApJ*, **409**, 412.
- Sloan, G.C.**, Grasdalen, G.L., & LeVan, P.D. 1993, "Spatially resolved spectra of silicate dust around  $\alpha$  Orionis," *ApJ*, **404**, 328.
- Landau, R., Grasdalen, G., & **Sloan, G.C.** 1992, "Three-beam chopping: an efficient infrared observing technique," *A&A*, **259**, 696.
- LeVan, P.D., **Sloan, G.C.**, Little-Marenin, I.R., & Grasdalen, G.L. 1992, "8-14 micron spectroscopy of carbon stars associated with silicate dust," *ApJ*, **392**, 702.
- Grasdalen, G.L., **Sloan, G.C.**, & LeVan, P.D. 1992, "Spatial structure in the 10  $\mu$ m spectrum of HD 44179 (the Red Rectangle)," *ApJ Letters*, **384**, L25.
- LeVan, P.D. & **Sloan, G.** 1989, "Ten-micron observations of bright circumstellar shells—spectral properties and a search for extended emission," *PASP*, **101**, 1140.
- Grasdalen, G.L., **Sloan, G.**, Stout, N., Strom, S.E., & Welty, A.D. 1989, "Circumstellar gas associated with HL Tauri: evidence for a remnant infalling envelope," *ApJ Letters*, **339**, L37.

**Unrefereed Publications**

- Bernard-Salas, J., Houck, J.R., Morris, P.W., **Sloan, G.C.**, Pottasch, S.R., & Barry, D.J. 2006, "IRS observations of LMC and SMC planetary nebulae," in *The Spitzer Space Telescope: New Views of the Cosmos*, ed. L. Armus & W.T. Reach, ASP Conf. Series 357, 157.
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**Seminars and Colloquia**

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