

## REFEREED PUBLICATIONS

Moores, J. E., Lemmon, M. T., Kahanpää, H., Rafkin, S. C. R., Francis, R., Pla-Garcia, J., Bean, T., Haberle, R., Newman, C., Mischna, M., Vasavada, A. R., de la Torre Juárez, M., Rennó, N., Bell, J., Calef, F., Cantor, B., McConnochie, T. H., Harri, A.-H., Genzer, M., Wong, M., Smith, M. D., Martín-Torres, F. J., Zorzano, M.-P., Kemppinen, O., and McCullough, E., Observational evidence of a suppressed planetary boundary layer in northern Gale Crater, Mars as seen by the Navcam instrument onboard the Mars Science Laboratory rover, *Icarus*, 2014.

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#### **Lunar and Planetary Science meeting, Boulder, CO, USA, June 25-28, 2012**

Delgado-Bonal, A., Martín-Torres, F. J., Simoncini, E., Effect of Radiative Transfer in the Photochemistry of Rocky Planets Atmospheres, Comparative Climatology of Terrestrial Planets, held June 25–28, 2012, in Boulder, Colorado. LPI Contribution No. 1675, id.8076, 2012

#### **EGU General Assembly 2011, held 2-7 May, 2011, Vienna, Austria**

“Thermodynamic study of a martian cave”

“Thermodynamic disequilibrium as a biomarker in Mars”

#### **Astrobiology Science Conference 2010: Evolution and Life: Surviving Catastrophes and Extremes on Earth and Beyond, held April 26-20, 2010 in League City, Texas**

Russell, M. J., Martín-Torres, F. J., Yung, Y., and I. Kanik, Would acetate (or its derivatives) be the most reliable guide to life on terraqueous globes ?

#### **5th MSL Landing Site Workshop, May 16 - May 17, 2011, Monrovia, CA**

Simoncini, E., Delgado-Bonal, A., and F. J Martín-Torres, Disequilibrium as a habitability sign

#### **Fall AGU Meeting, San Francisco, CA, December 14-18 2009**

Mast, J. C., M. Mlynczak, F. J. Martin-Torres, A. K. Smith, D. R. Marsh, J. Yee, B. T. Marshall, and J. M. Russell, Atomic Oxygen, Atomic Hydrogen, and Chemical Energy Deposition Rates Derived from SABER Measured Hydroxyl Airglow in the Mesosphere Region

Martin-Torres, F. J., C. D. Parkinson, M. Allen, S. W. Bougher, A. Bretch, F. P. Mills, M. G. Mlynczak, and Y. L. Yung, Observations of Night OH in the Mesosphere of Venus

Zhang, X., F. J. Martin-Torres, Y. L. Yung, G. S. Orton, and L. N. Fletcher, Non-LTE analysis of Uranus Observations from Spitzer

**41<sup>th</sup> Meeting of the Division for Planetary Sciences (American Astronomical Society), October 4-9, 2009**

Orton, G. S., L. Fletcher, T. Stallard, K. Baines, K. Sayanagi, D. Huestis, Y. Yung, S. Edgington, S. Gulkis, J. Moses, and F. J. Martin-Torres, Saturn Atmospheric Science in the Next Decade,

Fletcher, L., Orton, G. S., , T. Stallard, K. Baines, K. Sayanagi, F. J. Martin-Torres, M. Hofstader, I. de Pater, S. Edgington, R. Morales-Juberias, T. Livengood, D. Huestis, B. Marty, P. Hartogh, D. Atkinson, and J. Moses, Jupiter Atmospheric Science in the Next Decade,

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INVITED: Martin-Torres, F.J., “Non-LTE radiative transfer in planetary atmospheres”

**Yuk Yung’ Seminar California Institute of Technology, Pasadena, CA, July 21 2009**

INVITED: Martin-Torres, F. J., “Modeling of line mixing in atmospheric Spectra”

**Lunar and Planetary Institute, Tucson, Arizona, 7 de Julio de 2009**

Martin-Torres, F. J., “Remote Sensing, Spectroscopy and Radiative Transfer: from Earth to Extrasolar planets”

**Panchromatic Retrieval Workshop, California Institute of Technology, Pasadena California, June 25-26, 2009**

Martin-Torres, F. J., “Cloud Properties Using UV/VIS/IR measurements” (INVITED)

**Sounding Science Community Workshop, California Institute of Technology, Pasadena, CA, May 7 2009**

Martin-Torres, F. J., “Estimation of cloud Properties using UV, Visible and Infrared/far-Infrared Measurements from Space” (INVITED)

**European Geosciences Union, Vienna, Austria, 19-24 April 2009**

INVITED: Natraj, V. and F.J. Martin-Torres, “Polarization as a Tool for Remote Sensing of Planetary Atmospheres”

Boesch, H., Connor, B., O’Brien, D., O’Dell, C., Polonsky, I., Christi, M., McDuffie, J., Martin-Torres, F. J., Crisp, D., Miller, C. E., Santee, M., Oyafuso, F., Natraj, V., Yung, Y., “Error Characterization of CO<sub>2</sub> Retrievals from SWIR Satellite Observations”

Martin-Torres, F. J., Brown, L., Crisp, D., Miller, C., and R. Toth, “Overview of Molecular Line Parameters for the Orbiting Carbon Observatory”

Martin-Torres, F.J., "Modeling of line mixing in the CO<sub>2</sub> and O<sub>2</sub> Orbiting Carbon Observatory Channels"

**Yuk Yung' Seminar, California Institute of Technology, Pasadena, CA, April 21, 2009**

INVITED: Martin-Torres, F.J., "Non-LTE radiative transfer in planetary atmospheres" (INVITED)

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INVITED: Martin-Torres, F.J., "Characterization of Solar System and Extrasolar Planetary Spectra" (

**American Geophysical Union, Fall Meeting 2008**

Hunt, L. A., Mlynczak, M. G., Martin-Torres, F. J., Mertens, C. J., Marshall, B. T., Russell, J. M., Gordley, L. L., "New Thermospheric Infrared Radiative Flux and Power Results From the SABER Experiment"

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**37<sup>th</sup> Committee On Space Research (COSPAR) Scientific Assembly, Montreal, Canada, July 13-28 2008**

Siskind, David, Martin-Torres, F. Javier, Marsh, Daniel, Mlynczak, M. G., Russell, J. M., III, Decreases in Atomic Hydrogen Over the summer pole: Evidence for Dehydration from Polar Mesospheric Clouds?

Smith, A. K., Marsh, D. R., Russell III, J. M., Mlynczak, M. G., Martin-Torres, F. J., Kyrola, E., "Satellite Observations of High Nighttime Ozone at the Equatorial Mesopause"

Mlynczak, M. G., Martin-Torres, F. J., Mertens, C., Remsberg, E., Russell III, J. M., Thomson, E. Marshall, B. T., Gordley, L. L., Smith, A. K., and Marsh, D. R., "Atomic oxygen, atomic hydrogen, and chemical heating rates derived from SABER"

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Martin-Torres, F. J., "Calculation of planetary atmosphere refraction indices using HITRAN"

Martin-Torres, F. J., "Effect of the uncertainties in the O<sub>3</sub> absorption cross sections in the 755-775nm spectral region on the OCO retrievals"

Martin-Torres, F. J., Letchworth, K. L., and Benner, D. C., "A new algorithm for the implementation of spectroscopic lineshapes and speed-dependence for radiative transfer modeling in planetary atmospheres"

**European Geosciences Union (EGU) General Assembly Meeting, Vienna, Austria, 13 – 18 April 2008**

Martin-Torres, F. J., Mlynczak, M. G., Remsberg, E., Marshall, B. T., Smith, A. K., Kaufmann, M., Beaumont, K., Gordley, L. L., and Russell III, J. M., "Validation of O<sub>3</sub> from SABER infrared limb radiance measurements by comparison with independent satellite measurements"

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**American Geophysical Union, Fall Meeting 2007, San Francisco, CA, 10-14 December 2007**

Martin-Torres, F. J., Roldan, C., and Crisp, D., "Improved Version of the Roldan et al's Non-Local Thermodynamic Equilibrium Model for the Infrared Emissions in the Atmosphere of Venus", LPI Contribution No. 1376, p.79

Mlynczak, M. G., Martin-Torres, F. J., Remsberg, E. E., Marshall, B. T., Thomson, R. E., Russell, J. M., Gordley, L. L., and Woods, T., "Energy Balance in the Thermosphere from TIMED and SORCE data"

Gardner, J. L., Funke, B., Mlynczak, M. G., Lopez-Puertas, M., Martin-Torres, F. J., Russell, J. M., Miller, S. M., Sharma, R. D., and Winick, J. R., "Analysis, Modeling and Comparison of Nitric Oxide Emissions in the Thermosphere Measured by MIPAS and SABER"

Kalogerakis, K. S., Smith, G. P., Geballe, Z. M., Mlynczak, M. G., Martin-Torres, F. J., and Copeland, R. A., Temperature Dependence of OH(v) Vibrational Relaxation by Atmospheric Gases

#### **SABER Science Team Meeting, Hampton University, November 13-14 2007**

Martin-Torres, F. J., "Validation studies of version 1.07 of O<sub>3</sub> retrieved from 1.27 $\mu$ m SABER measurements"

Martin-Torres, F. J. and Mlynczak, M. G., "NO VER and solar variation correlations"

Martin-Torres, F. J. and Mlynczak M. G., "Thermospheric energy balance study update"

#### **Workshop on Planetary Atmospheres, held November 6-7, 2007 in Greenbelt, Maryland**

Martin-Torres, F. J., Roldan, C., and Crisp, D., "Improved Version of the Roldan et al's Non-Local Thermodynamic Equilibrium Model for the Infrared Emissions in the Atmosphere of Venus"

#### **TIMED ITM Science Meeting, National Center for Atmospheric Research, Boulder, CO, September 17-19, 2007**

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#### **American Meteorological Society 14th Conference on Middle Atmosphere, Portland, Oregon 20-24 August 2007**

Martin-Torres, F. J., Mlynczak, M. G., Remsberg, E., Marshall, T., Thompson, R. E., Russell III, J. M., "Solar driven trends in the mesosphere and lower thermosphere as observed by SABER"

#### **International Union of Geodesy and Geophysics (IUGG) XXIV General Assembly, Perugia, Italy, July 2-13, 2007**

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#### **European Geophysical Union General Assembly, Vienna, Austria, April 15-21, 2007**

Martin-Torres, F. J. and D. Crisp, "Analysis of the Near-Infrared Emissions of CO<sub>2</sub> in the Atmosphere of Venus"

Martin-Torres, F. J. and M. G. Mlynczak, "Application of O<sub>2</sub> and OH SABER measurements and studies to the search of O<sub>3</sub> in other planetary atmospheres"

Mlynczak, M. G., Martin-Torres, F. J., Remsberg, E., Marshall, T., Thompson, R. E., Williams, T., Kratz, D., Russell III, J. M., Woods, T., and Gordley, L. L. "Solar cycle influence on the infrared energy budget of the thermosphere"

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#### **SABER-GUVI Science Meeting, Logan, Utah, February 5-6, 2007**

Mlynczak, M. G. and Martin-Torres, F. J., "Outstanding kinetics issues, O-O<sub>2</sub>, O-CO<sub>2</sub> quenching and O-OH quenching rates"

Mlynczak, M. G. and F. J. Martin-Torres, "Discussion of analysis products: Schumann-Runge band solar heating, O<sub>3</sub> cooling and H<sub>2</sub>O cooling"

Mlynczak, M. G. and F. J. Martin-Torres, "NO<sub>x</sub> changes over the solar cycle"

#### **38th Annual DPS Meeting. Pasadena, CA, October 8-13, 2006**

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#### **Orbiting Carbon Observatory Intensive Algorithm Meeting, Geophysics and Planetary Sciences Department, California Institute of Technology, Pasadena, California, August July 31-August 4, 2006**

*INVITED*: Martin-Torres, F. J., "Non-local thermodynamic Equilibrium effects in the OCO bands"

#### **36<sup>th</sup> COSPAR Scientific Assembly, 16-23 July, 2006, Beijing, China**

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#### **9<sup>th</sup> HITRAN Conference, June 26- 28, 2006, Cambridge, MA**

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**Abscon2006, March 2006, Washington DC**

Martin-Torres, F. J., “The lower detection limit of methane in the martian atmosphere using near-infrared measurements”, Abscon2006, Washington DC.

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Martin-Torres, F. J. and Martin-Torres, F. J., “Modeling of the 3.3-micron emission of methane in the atmosphere of Mars”, #37, #33.26, 2005



**13<sup>th</sup> American Meteorological Society Conference on the Middle Atmosphere Conference, 13-17 June 2005, Cambridge, MA**

Mlynczak, M.G., Martin-Torres, F. J., Mertens, C., Russell, J. M., Marshall, T., Gordley, L. L., and E.E. Remsberg, "Solar Heating, Chemical Heating, and Infrared Cooling in the Mesosphere as Revealed by the SABER Experiment"

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**18<sup>th</sup> SABER Science Team meeting, April 18-19, Hampton University, Hampton, VA**

Martin-Torres, F. J. and Mlynczak, M. G., "Comparison of ozone observations from SABER measurements at 1.27- and 9.6-microns",

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*INVITED:* "SABER observations of the thermal structure and radiative and chemical energetics in the mesosphere and lower thermosphere region during polar summer and winter seasons", Mertens, C., Mlynczak, M. G., Martin-Torres, F. J., Schmidlin, Goldberg, She, Rapp, Lopez-Puertas, Wintersteiner, Picard, Winick, Russell, and Gordley.

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*INVITED:* "Chemical and solar heating rates in the mesosphere after SABER observations", M. G. Mlynczak and F. J. Martin-Torres

**Spring AGU 2004 Meeting , Montreal, Canada, 17-21 May 2004**

Winick, J.R., M.G. Mlynczak, P.P. Wintersteiner, F.-J. Martin-Torres, R.H. Picard, M. Lopez-Puertas, J.M. Russell III, and L.Gordley, "Thermospheric infrared emission response to major geomagnetic

disturbances from SABER data: High latitude aurora and X-ray flares”

**SABER Algorithm Meeting at NASA/Langley, Hampton, VA, May 4-5 2004**

Martin-Torres, F. J., “O<sub>3</sub> retrieval using measurements at 1.27 micron and 9.6 micron”

Martin-Torres, F. J., “Odd oxygen issues”

Martin-Torres, F. J. “Incorporating MSIS into operational processing”

**TIMED Science Meeting, Boulder, CO, March 16-17 2004**

Martin-Torres, F. J., “Natural thermostat effect in the thermosphere”

**18<sup>th</sup> SABER Science Team Meeting, March 9-10 2004**

Martin-Torres, F. J., “Revised unfilter factor approach”

Martin-Torres, F. J., “O<sub>2</sub> spectroscopy update: impact on O<sub>3</sub> retrievals from O<sub>2</sub>(<sup>1</sup>Delta)

Martin-Torres, F. J., “October-November 2003 storm effects at 4.3 micron and 5.3 micron”

Martin-Torres, F. J., “Natural thermostat effect update”

**Conference on Sun-Earth Connections Multiscale Coupling of Sun-Earth Processes, Kona, Hawaii, USA, February 9-12 2004, Sun-Earth connection meeting**

*INVITED*: M. Mlynczak, Martin-Torres, F. J., G. Crowley, J. Kozyra, L. Paxton, C. J. Mertens, J. M. Russell, J. Winick, and R. Picard, “Observations and Modeling of Infrared Radiative Cooling and Energy Loss in the Thermosphere in Response to Geomagnetic Storm Events”

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**17<sup>th</sup> SABER Science Team Meeting, August 24-26, 2003, Hampton University, Museum Education Center Room, Hampton, VA**

Martin-Torres, F. J. and Mlynczak, M. G., “Chemical Heating and Solar Heating Studies using SABER data”

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Mlynczak, M. G., Martin-Torres, F. J., et al. "An Overview and science results from the SABER experiment at the TIMED mission"

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Mlynczak, M. G., Martin-Torres, F. J., William Ward, and J. M. Russell III, "Chemical Heating and Solar Heating in the Mesosphere and Lower Thermosphere"

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Martin-Torres, F. J., Kutepov, A., Dudhia, A., Gusev, O., Feofilov, A. G., "A Non-LTE model for the atmosphere of Titan and implications for the Cassini CIRS experiment"

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Co-author in Funke et al., "NO and CO vertical profiles derived from MIPAS/ENVISAT under consideration of non-LTE"

Co-author in von Clarmann et al., "Retrieval of temperature and pointing information from MIPAS limb emission spectra"

Co-author in von Clarmann et al. "Advanced MIPAS-Level-2 Data Analysis (AMIL2DA)"

Co-author in Lopez-Puertas et al., "The temperature and CO<sub>2</sub> abundance of the mesosphere and lower thermosphere as measured by MIPAS/Envisat"

Co-author in Lopez-Puertas et al., "A survey of the non-LTE atmospheric emissions as measured by MIPAS/Envisat"

**16<sup>th</sup> SABER Science Team Meeting, March 11-13, 2003, Hampton University, Museum Education Center Room, Hampton, VA**

Martin-Torres, F. J. and Mlynczak, M. G., "Unfilter factor" study progress

Martin-Torres, F. J. and M. G., and Mlynczak, M. G., "Recommended rate coefficients for use in retrieval codes"

**TIMED Scientific Working Group, Boulder, CO, February 19-21 2003**

M. G. Mlynczak, F. J. Martin-Torres, M. Hagan, R. Roble, G. Lu, J. Winick, R. Picard, C. J. Mertens, M. Lopez-Puertas, K. Beaumont, S. Jacobson, T. Marshall, L. Gordley, L. Paxton, J. Kozyra, T. Woods, and J. M. Russell III, "Energy Balance in the Sun-Earth System During the Solar Storm Events of April 2002"

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F. J. Martin-Torres et al., "Derivation of Mesospheric Ozone From SABER/TIMED Measurements of the O<sub>2</sub> Infrared Atmospheric Band Emission in the Dayglow"

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**15th SABER Science Team Meeting, Hampton University, Marine Sciences Conference Room, Hampton, VA, USA, November 19-20, 2002**

F. J. Martin-Torres and M. G. Mlynczak, "Review of "unfilter" factor calculations and approach"

F. J. Martin-Torres and M. G. Mlynczak, "Energy Balance in the Sun-Earth System During the Solar Storm Events of April 2002"

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**Workshop on the April 2002 Solar Storm Workshop, MIT Haystack Observatory, Westford, MA, USA, October 29-30 2002**

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**34th COSPAR Scientific Assembly, The Second World Space Congress, Houston, TX, USA, 10-19 October 2002**

M. G. Mlynczak, F. J. Martin-Torres, J. Russell III, L. Gordley, C. Mertens, R. Picard, M. Lopez-Puertas, P. Wintersteiner, J. Winick, D. Siskind, D. Baker, J. Ulwick, E. Remsberg, R. Garcia, P. Espy, R. Roble, and S. Solomon, "A first look at the energy budget of the mesosphere and lower thermosphere as revealed by the SABER experiment on the TIMED mission"

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F. J. Martin-Torres, A. Dudhia, and L. M. Lara, "Modelling of the infrared emissions in the atmosphere of Titan: re-analysis of the Voyager data"

F. J. Martin-Torres and G. J. Molina-Cuberos, "Ion-neutral model of the lower ionosphere of Venus"

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Infrared Limb Emission as Observed by TIMED/SABER”

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D. Kratz, D. Turner, C. Mertens, F. Miskolski, and F. J. Martin-Torres, “Far-Infrared Spectroscopy of the Troposphere (FIRST) line-by-line intercomparison”

**14th SABER Science Team Meeting, Hampton University, Hampton, VA, USA, August 14 -15, 2002**

M. Lopez-Puertas, F. J. Martin-Torres, and M Garcia-Comas, “New O/O<sub>2</sub> quenching rate and implications for H<sub>2</sub>O”

Martin-Torres, F. J. and Mlynczak, M. G., “Unfiltering” issues for Volume Emission Rates”

Martin-Torres, F. J. and M. G. Mlynczak, “Initial O<sub>3</sub> retrievals using O<sub>2</sub>(1D) dayglow Volume Emission Rates”

M. G. Mlynczak, J. Russell III, J. Winick, and F. J. Martin-Torres, “April solar storm studies”

**First Workshop on Sun-Earth connection: Space weather during April 14-24 storms, The Johns Hopkins University, Applied Physics Laboratory, Laurel, MD, USA, August 7-8, 2002**

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**Workshop at Headquarters of the Consejo Superior de Investigaciones Cientificas (CSIC), Madrid, Spain, July 11-12, 2002**

F. J. Martin-Torres, “Re-analysis de las medidas en el infrarrojo de los instrumentos IRIS a bordo de las sondas Voyager” (“Re-analysis of the infrared measurements taken by the IRIS instruments onboard the Voyager spacecrafts”)

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M. G. Mlynczak, F. J. Martin-Torres, C. J. Mertens, M. Lopez-Puertas, J. M. Russell III, P. Wintersteiner, J. Winick, R. Picard, and L. Gordley, “A first look at the energy budget of the mesosphere and lower thermosphere as revealed by the SABER experiment on the TIMED mission”

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*INVITED*: F. J. Martin-Torres and M. G. Mlynczak, “Modeling and Observations of the Atmospheric Thermal Structure, Chemical Composition, and Radiation Balance using WACCM and Satellite Data”

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F. J. Martin-Torres, M. Lopez-Puertas, and M. G. Mlynczak, "Non-LTE analysis of the 10-microns O<sub>3</sub> ISAMS/UARS measurements"

X. Zhu, M. Lopez-Puertas, J. M. Russell III, M. G. Mlynczak, J. Yee, E. R. Talaat, and F. J. Martin-Torres, "High Latitude Winter Ozone 9.6-micron Band Limb Emissions as measured by TIMED/SABER"

F. J. Martin-Torres and G. J. Molina-Cuberos, "The lower ionosphere of the atmosphere of Venus"

**27<sup>th</sup> EGS General Assembly, Nice, France, 21-26 April 2002**

F. J. Martin-Torres, M. Lopez-Puertas, and M. G. Mlynczak, "Non-LTE analysis of the 9.6 microns O<sub>3</sub> ISAMS/UARS measurements"

F. J. Martin-Torres, M. Kaufmann, R. Copeland, and M. G. Mlynczak, "Non-LTE calculations of the OH ro-vibrational populations and implications for detection of OH Meinel bands from spectra"

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B. Funke, F. J. Martin-Torres, M. Lopez-Puertas, M.A. Lopez-Valverde, and M. Garcia-Comas, "A generic non-LTE population model for MIPAS-ENVISAT data analysis"

**13<sup>th</sup> Scientific SABER Meeting, Hampton University, Hampton, VA, USA, March 5-6 2002**

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