

## Publications

March 20, 2000

### Papers in press, in review, or in preparation for submission to refereed journals

“Evidence for carbonate minerals in the Martian aerosol”

P.W. Morris, Th. de Graauw, E. Lellouch, B.G. Henderson, Th. Encrenaz, S. Erard, H. Feuchtgruber, M. Burgdorf, M. Griffin, & G. Davis, submitted to *Icarus*

“An inventory of solid state bands in the thermal infrared spectra of 1 Ceres, 2 Pallas, and 10 Hygiea”

P.W. Morris, C. Dijkstra, L.B.F.M. Waters, & Th. Müller, in preparation for *Icarus*

“The surface mineralogy of asteroid 4 Vesta”

A.M. Heras, P.W. Morris, & Th. Müller, in preparation for *Icarus*

“The unique dust chemistry of  $\eta$  Carinae”

P.W. Morris, L.B.F.M. Waters, M.J. Barlow, R.H.M. Voors, T. Lim, H. Feuchtgruber, P. Cox, & H.J.G.L.M. Lamers, in preparation for *Astrophysical Journal*

“A non-LTE infrared emission line analysis of the  $\eta$  Carinae stellar wind”

P.W. Morris, A. de Koter, J. Hillier, & L.B.F.M. Waters, S. Hony, & H.J.G.L.M. Lamers, in preparation for *Astrophysical Journal*

“The photometric performance of the ISO Short Wavelength Spectrometer”

P.W. Morris, et al., in preparation for *Experimental Astronomy*

“Infrared imaging and spectroscopy of the Luminous Blue Variables Wra 751 and AG Car”

R.H.M. Voors, L.B.F.M. Waters, A. de Koter, J. Bouwman, P.W. Morris, N.R. Trams, & H.J.G.L.M. Lamers 2000, *Astronomy and Astrophysics*, in press

“The 2.4-45  $\mu\text{m}$  spectrum of Mars observed with the Infrared Space Observatory”

E. Lellouch, T. Encrenaz, T. de Graauw, S. Erard, P. Morris, H. Feuchtgruber, J. Crovisier, T. Girard, & M. Burgdorf 2000, *Planetary and Space Science Reviews*, in press

“Quantitative analysis of WC stars: Constraints on neon abundances from ISO-SWS spectroscopy”

L. Dessart, P.A. Crowther, D.J. Hillier, A.J. Willis, P.W. Morris, & K.A. van der Hucht 2000, *Monthly Notices of the Royal Astronomical Society*, in press

### Refereed Papers

“The infrared spectrum of the Be star  $\gamma$  Cassiopeiae” S. Hony, L.B.F.M. Waters, P.A. Zaal, A. de Koter, J.M. Marlborough, C.E. Miller, N.R. Trams, P.W. Morris, Th. de Graauw 2000, *Astronomy and Astrophysics*, 355, 187

“A 0.4-20  $\mu\text{m}$  spectroscopic study of the clumped wind of WR 147”

P.W. Morris, K.A. van der Hucht, P.A. Crowther, D.J. Hillier, L. Dessart, P.M. Williams, A.J. Willis 2000, *Astronomy and Astrophysics*, 353, 624

“Discovery of a massive equatorial torus in the  $\eta$  Carinae stellar system”

P.W. Morris, L.B.F.M. Waters, M.J. Barlow, T. Lim, A. de Koter, R.H.M. Voors, P. Cox, Th. de Graauw, Th. Henning, S. Hony, H.J.G.L.M. Lamers, H. Mutschke, & N.R. Trams 1999, *Nature*, 402, 502

Related press: “Eta Carinae Untangled”, *Sky & Telescope NewsNotes*, April 2000, p. 16-17.

“Eta Carinae – ISO tells the true story”, ESA Science News, 03 December 1999, <http://sci.esa.int/index.cfm>

“Properties of hot stars in the Wolf-Rayet galaxy NGC5253 from ISO-SWS spectroscopy”

P.A. Crowther, S.C. Beck, A.J. Willis, P.S. Conti, P.W. Morris, & R.S. Sutherland 1999, *Monthly Notices of the Royal Astronomical Society*, 304, 654

“The ISO-SWS detectors: performance trends and space radiation effects”

A.M. Heras, E. Weiprecht, H. Feuchtgruber, F. Lahuis, K. Leech, R. Lorente, P. Morris, A. Salama, & B. Vandenbussche 1999, *Experimental Astronomy*, in press

“Dust in R71: first detection of crystalline silicates in the LMC”

R.H.M. Voors, L.B.F.M. Waters, P.W. Morris, N.R. Trams, A. de Koter, & J. Bouwman 1999, *Astronomy and Astrophysics*, 341, 67

“ISO-SWS observations of infrared absorption bands of the diffuse interstellar medium: The  $6.2\mu\text{m}$  feature of aromatic compounds”

W.A. Schutte, K.A. van der Hucht, D.C.B. Whittet, A.C.A. Boogert, A.G.G.M. Tielens, P.W. Morris, J.M. Greenberg, E.F. van Dishoek, J.E. Chair, & Th. de Graauw 1998, *Astronomy and Astrophysics*, 337, 261

“An oxygen-rich dust disk surrounding an evolved star in the Red Rectangle”

L.B.F.M. Waters, C. Waelkens, H. van Winckel, F.J. Molster, A.G.G.M. Tielens, J.T. van Loon, P.W. Morris, J. Cami, J. Bouwman, A. de Koter, T. de Jong, & T. de Graauw 1998, *Nature*, 391 868

“ISO’s view on massive star evolution: neon abundances in Wolf-Rayet stars”

P.W. Morris, K.A. van der Hucht, P.M. Williams, & A.J. Willis 1998, *Astrophysics and Space Science*, 255, 157

“Dust in LBV nebulae”

L.B.F.M. Waters, P.W. Morris, R.H.M. Voors, H.J.G.L.M. Lamers, & N.R. Trams 1998, *Astrophysics and Space Science*, 255, 179

“ISO observations of Wolf-Rayet dust shells”

P.M. Williams, K.A. van der Hucht, & P.W. Morris 1998, *Astrophysics and Space Science*, 255, 169

“ISO SWS spectroscopy of WR 146 (WC6+O)”

A.J. Willis, L. Dessart, P.A. Crowther, P.W. Morris, & K.A. van der Hucht 1998, *Astrophysics and Space Science*, 255, 167

“Ionized outflows of hot stars”

F. Najarro, R.-P. Kudritzki, D.J. Hillier, H.J.G.L.M. Lamers, R.H.M. Voors, P.W. Morris, & L.B.F.M. Waters 1998, *Astrophysics and Space Science*, 255, 137

“New wavelength determinations of mid-infrared fine-structure lines by the Infrared Space Observatory Short-Wavelength Spectrometer”

H. Feuchtgruber, D. Lutz, D.A. Beintema, E.A. Valentijn, O.H. Bauer, D.R. Boxhoorn, Th. de Graauw, L.N. Hauser, G. Haerendel, A.M. Heras, R.O. Katterloher, D. Kester, F. Lahuis, K.J. Leech, P.W. Morris, P.R. Roelfsema, A. Salama, S.G. Schaeidt, H.W.W. Spoon, B. Vandenbussche, & E. Wieprecht 1998, *Astrophysical Journal*, 487, 962

- “The neon abundance in WC stars - I. ISO SWS spectroscopy of WR146 (WC6+O)”  
 A.J. Willis, L. Dessart, P.A. Crowther, **P.W. Morris**, A. Maeder, P.S. Conti, & K.A. van der Hucht 1997, *Monthly Notices of the Royal Astronomical Society*, 290, 371
- “First results of ISO-SWS observations of Saturn: detection of CO<sub>2</sub>, CH<sub>3</sub>C<sub>2</sub>H, C<sub>4</sub>H<sub>2</sub>, and tropospheric H<sub>2</sub>O”  
 T. de Graauw, H. Feuchtgruber, B. Bezard, P. Drossart, T. Encrenaz, D.A. Beintema, M. Griffin, A. Heras, M. Kessler, K. Leech, E. Lellouch, **P. Morris**, P.R. Roelfsema, M. Roos-Serote, A. Salama, B. Vandenbussche, E.A. Valentijn, G.R. Davis, & N.A. Naylor 1997, *Astronomy and Astrophysics*, 321, 13
- “First results of ISO-SWS observations of Jupiter”  
 T. Encrenaz, T. de Graauw, S. Schaeidt, E. Lellouch, H. Feuchtgruber, D.A. Beintema, B. Bezard, P. Drossart, M. Griffin, A. Heras, M. Kessler, K. Leech, **P. Morris**, P.R. Roelfsema, M. Roos-Serote, A. Salama, B. Vandenbussche, E.A. Valentijn, G.R. Davis, & N.A. Naylor 1997, *Astronomy and Astrophysics*, 315, 397
- “Mineralogy of oxygen-rich dust shells”  
 L.B.F.M. Waters and 36 co-authors incl. **P.W. Morris** 1996, *Astronomy and Astrophysics*, 315, 361
- “SWS observations of solid CO<sub>2</sub> in molecular clouds”  
 T. de Graauw, D.C.B. Whittet, P.A. Gerakines, and 29 co-authors incl. **P.W. Morris** 1996, *Astronomy and Astrophysics*, 315, 345
- “The central stars of the planetary nebulae NGC 7027 and NGC 6543”  
 D.A. Beintema, P.A.M. van Hoof, F. Lahuis, S.R. Pottasch, L.B.F.M. Waters, T. de Graauw, D.R. Boxhoorn, H. Feuchtgruber, **P.W. Morris** 1996, *Astronomy and Astrophysics*, 315, 253
- “SWS observations of young main-sequence stars with dusty circumstellar disks”  
 C. Waelkens, L.B.F.M. Waters, M.S. de Graauw, and 19 co-authors incl. **P.W. Morris** 1996, *Astronomy and Astrophysics*, 315, 245
- “The ISO-SWS spectrum of P Cygni”  
 H.J.G.L.M. Lamers, F. Najarro, R.P. Kudritzki, **P.W. Morris**, R.H.M. Voors, J.I. van Gent, L.B.F.M. Waters, T. de Graauw, D.A. Beintema, E.A. Valentijn, & D.J. Hillier 1996, *Astronomy and Astrophysics*, 315, 229
- “The ISO-SWS spectra of Luminous Blue Variables”  
 H.J.G.L.M. Lamers, **P.W. Morris**, R.H.M. Voors, J.I. van Gent, L.B.F.M. Waters, T. de Graauw, R.P. Kudritzki, F. Najarro, A. Salama, & A.M. Heras 1996, *Astronomy and Astrophysics*, 315, 225
- “ISO-SWS spectrophotometry of galactic Wolf-Rayet stars: preliminary results”  
 K.A. van der Hucht, **P.W. Morris**, P.M. Williams, D.Y.A. Setia Gunawan, D.A. Beintema, D.R. Boxhoorn, T. de Graauw, A. Heras, D.J.M. Kester, F. Lahuis, K.J. Leech, P.R. Roelfsema, A. Salama, E.A. Valentijn, & B. Vandenbussche 1996, *Astronomy and Astrophysics*, 315, 193
- “Detection of hot, abundant water toward AFGL 2591”  
 F.P. Helmich, E.F. van Dishoek, J.H. Black, T. de Graauw, D.A. Beintema, A.M. Heras, F. Lahuis, **P.W. Morris**, & E.A. Valentijn 1996, *Astronomy and Astrophysics*, 315, 173
- “The wavelength calibration and resolution of the SWS”  
 E.A. Valentijn, H. Feuchtgruber, D.J.M. Kester and 21 co-authors incl. **P.W. Morris** 1996, *Astronomy and Astrophysics*, 315, 60

“The photometric calibration of the ISO Short Wavelength Spectrometer”

S.G. Schaeidt, P.W. Morris, A. Salama, and 29 co-authors 1996, *Astronomy and Astrophysics*, 315, 55

“Observing with the ISO Short-Wavelength Spectrometer”

T. de Graauw, L.N. Haser, D.A. Beintema, and 59 co-authors incl. P.W. Morris 1996, *Astronomy and Astrophysics*, 315, 49

“Infrared spectra of massive stars in transition: WNL, Of, Of/WN, Be, B[e], and Luminous Blue Variable stars”

P.W. Morris, P.R.J. Eenens, M.M. Hanson, P.S. Conti, & R.D. Blum 1996, *Astrophysical Journal*, 470, 597

“Of-type stars HD 16691 and HD 190429 show WN-like spectra in infrared K band”

P.S. Conti, M.M. Hanson, P.W. Morris, A.J. Willis, & S.J. Fossey 1995, *Astrophysical Journal Letters*, 445, 35

“The ‘Baldwin Effect’ in Wolf-Rayet stars”

P.W. Morris, P.S. Conti, H.J.G.L.M. Lamers, & G. Koenigsberger 1993, *Astrophysical Journal Letters*, 414, 25

“Spectrophotometry of Wolf-Rayet stars I. Continuum energy distributions”

P.W. Morris, K.R. Brownsberger, P.S. Conti, P. Massey, & W.D. Vacca 1993, *Astrophysical Journal*, 412, 324

“A new method to determine the interstellar reddening towards WN stars”

P.S. Conti & P.W. Morris 1990, *Astronomical Journal*, 99, 898

### Some Conference Papers

#### Invited reviews

“Wolf-Rayet and Luminous Blue Variable Stars: the ISO impact on wind structure and evolution”

P.W. Morris 2000, M.F. Kessler & A. Salama (eds.), *ISO Beyond the Peaks: The Second ISO Workshop on Analytical Spectroscopy*, ESA SP, in press

“ISO studies of luminous, early-type stars”

P.W. Morris and 14 co-authors, 1999, in: P. Cox & M.F. Kessler (eds.), *The Universe As Seen By ISO*, ESA SP-427, 247

“ISO’s view on massive star evolution: neon abundances in Wolf-Rayet stars”

P.W. Morris, K.A. van der Hucht, P.M. Williams, & A.J. Willis 1998, in: L.B.F.M. Waters, C. Waelkens, K.A. van der Hucht, & P.A. Zaal (eds.), *ISO’s View on Stellar Evolution*, published as refereed paper in *Astrophysics and Space Science*, 255, 157

“Near-infrared spectra of LBVs, Be, and B[e] stars: does axisymmetry provide a morphological link?”

P.W. Morris, R.H.M. Voors, H.J.G.L.M. Lamers, & P.R.J. Eenens 1997, in: A. Nota & H. Lamers (eds.), *Luminous Blue Variables: Massive Stars in Transition*, ASP Conference Series vol. 120 (San Francisco), 20

“Evolutionary implications for ‘transition’ stars from ground-based and ISO-SWS spectra”

P.W. Morris, K.A. van der Hucht, P.R.J. Eenens, & P.M. Williams 1996, in: J.M. Vreux et al. (eds.), *Wolf-Rayet Stars in the Framework of Stellar Evolution*, Proc. of 33rd Liège Int. Astrophysical Coll.

(Université de Liège), 405

“Continuum and emission line observations of Wolf-Rayet stars: single and ‘WR+abs’ objects”

P.W. Morris 1995, in: K.A. van der Hucht and P.M. Williams (eds.), *Wolf-Rayet stars: binaries; colliding winds; evolution*, Proc. IAU Symp. No. 163 (Dordrecht: Kluwer), 96

#### Recent contributed papers

“A review of ISO results in the Solar System”

P.W. Morris 2000, given at *The Solar System and Circumstellar Dust Disks: Prospects for SIRTFF* workshop at Dana Point, California, Aug. 18-20 1999 (no published proceedings).

“Infrared Spectroscopy of Mars with the ISO Short Wavelength Spectrometer”

P.W. Morris, Th. de Graauw, E. Lellouch, B.G. Henderson, T. Encrenaz, S. Erard, H. Feuchtgruber, M. Burgdorf, G.R. Davis, & M.J. Griffin 2000, in M. Sitko & A. Sprague (eds.), *Thermal Emission Spectroscopy and Analysis of Dust, Disks, and Regoliths*, ASP Conf. Series 196, in press.

#### Selected poster papers

“Composition of Martian Surface Materials and Dust from ISO Observations”

S. Erard, E. Lellouch, T. Encrenaz, P. Morris, Th. de Graauw, & M. Burgdorf 2000, in abstracts of *31st Annual Lunar and Planetary Science Conference*, #1325.

“Asteroid 4 Vesta as Seen with the ISO Short Wavelength Spectrometer”

A.M. Heras, P.W. Morris, B. Vandenbussche, & R. Dijkstra 1999, in M. Sitko & A. Sprague (eds.), *Thermal Emission Spectroscopy and Analysis of Dust, Disks, and Regoliths*, ASP Conf. Series 196, in press.

“Neon abundances in three Wolf-Rayet stars observed with the ISO-SWS”

P.W. Morris, K.A. van der Hucht, A.J. Willis, L. Dessart, P.A. Crowther, & P.A. Williams 1999, in K.A. van der Hucht et al. (eds.), *Wolf-Rayet Phenomena in Massive Stars and Starburst Galaxies*, IAU Symp. 193 (San Francisco: ASP), 77.

“ISO-SWS spectra of Planetary Nebulae with low-mass [WC] central stars: a mixed C- and O-rich dust chemistry”

P.W. Morris, L.B.F.M. Waters, & D.A. Beintema 1999, in K.A. van der Hucht et al. (eds.), *Wolf-Rayet Phenomena in Massive Stars and Starburst Galaxies*, IAU Symp. 193 (San Francisco: ASP), 376.

“Mineralogical features detected in the 5 - 12  $\mu$  m range with ISO-SWS: hints of carbonate minerals”

P. Morris, E. Lellouch, Th. de Graauw, S. Erard, B. Henderson, T. Encrenaz, & H. Feuchtgruber 1999, *American Astronomical Society, Division of Planetary Sciences Meeting 31*, #59.06

“Mineralogic features at 7 and 11  $\mu$  m in the spectrum of Mars: have we missed something?”

E. Lellouch, T. Encrenaz, P. Morris, Th. de Graauw, S. Erard, & J.C. Pearl 1999, *American Astronomical Society, Division of Planetary Sciences Meeting 31*, #60.07

“ISO SWS observations of asteroids”

M.A. Barucci, J. Crovisier, A. Doressoundiram, E. Dotto, M. Fulchignoni, P. Morris, & T. Owen 1999, in: P. Cox & M.F. Kessler (eds.), *The Universe As Seen By ISO*, ESA SP-427, 165

“The ISO-SWS post-He programme: extending the MK spectral classification to the near-infrared”

B. Vandenbussche, L. Waters, A. Heras, P. Morris, P. Sprengers, & C. Waelkens 1999, in: P. Cox & M.F. Kessler (eds.), *The Universe As Seen By ISO*, ESA SP-427, 413

- “Fundamental thermal emission parameters of main-belt asteroids derived from ISO observations of (1) Ceres”  
 T.G. Müller, J.S.V. Lagerros, M. Burgdorf, T. Lim, P. Morris, A. Salama, B. Schulz, & B. Vandenbussche 1999, in: P. Cox & M.F. Kessler (eds.), *The Universe As Seen By ISO*, ESA SP-427, 141
- “The ISO-SWS flux standard stars: synthetic spectra and observations”  
 N.S. van der Blik, P.W. Morris, B. Vandenbussche, L.B.F.M. Waters, P. Zaal, R.A. Bell, B. Gustafsson, K. Eriksson, & Th. de Graauw 1998, in: T.R. Bedding, A.J. Booth, & J. Davis (eds.), *Fundamental Stellar Properties: The Interaction between Observation and Theory*, Proc. IAU Symp. No. 189 (Dordrecht: Kluwer), 89
- “Modelling of ISO-SWS spectra of red giants”  
 L. Decin, M. Cohen, K. Eriksson, B. Gustafsson, E. Huygen, P. Morris, B. Plez, J. Sauval, B. Vandenbussche, & C. Waelkens 1998, in: *Asymptotic Giant Branch Stars*, Proc. IAU Symp. No. 191, 120
- “ISO Observations of Asteroids”  
 E. Dotto, M.A. Barucci, J. Crovisier, A. Doressoundiram, Th. Encrenaz, M. Fulchignoni, R.F. Knacke, E. Lellouch, P. Morris, T.G. Mueller, & T. Owen 1998, *American Astronomical Society, Division of Planetary Sciences Meeting 30*, #05.01
- “The ISO Spectral Analysis Package ISAP”  
 E. Sturm, O.H. Bauer, J. Brauer, M. Buckley, A Harwood, G. Helou, I. Kahn, J. Li, S. Lord, D. Lutz, J. Mazzarella, P.W. Morris, B. Narron, S. Sidher, B. Swinyard, S.J. Unger, L. Verstraete, F. Vivares, E. Wieprecht, & E. Wiezorrek 1998, in: R. Albrecht, R.N. Hook, & H.A. Bushouse (eds.), *Astronomical Data Analysis Software and Systems VII*, ASP Conference Series vol. 145 (San Francisco), 161
- “Comparison between ISO-SWS observations and synthetic spectra of K and M giants  $\alpha$  Boo and  $\beta$  Peg”  
 L. Decin, M. Cohen, K. Eriksson, B. Gustafsson, E. Huygen, P. Morris, B. Plez, J. Sauval, B. Vandenbussche, & C. Waelkens 1997, in: A.M. Heras, K. Leech, N.R. Trams, and M. Perry (eds.), *First ISO Workshop on Analytical Spectroscopy*, ESA-SP419 (Noordwijk), 185
- “The ISO-SWS spectrum of P Cygni”  
 F. Najarro, R.-P. Kudritzki, D.J. Hillier, H.J.G.L.M. Lamers, R.H.M. Voors, P.W. Morris, & L.B.F.M. Lamers 1997, in: A. Nota & H. Lamers (eds.), *Luminous Blue Variables: Massive Stars in Transition*, ASP Conference Series vol. 120 (San Francisco), 105
- “Topics in SWS data analysis and calibrations”  
 A. Salama, H. Feuchtgruber, A. Heras, F. Lahuis, K.J. Leech, R. Lorente, P. Morris, B. Vandenbussche, & E. Wieprecht 1997, in: A.M. Heras, K. Leech, N.R. Trams, and M. Perry (eds.), *First ISO Workshop on Analytical Spectroscopy*, ESA-SP419 (Noordwijk), 17
- “LSS 4005 and NaSt 1, Galactic O[e] or B[e] Objects”  
 K. A. van der Hucht, P.M. Williams, P.W. Morris, & A.M. van Genderen 1997, in: A. Nota & H. Lamers (eds.), *Luminous Blue Variables: Massive Stars in Transition*, ASP Conference Series vol. 120 (San Francisco), 211

## Dissertations

“Spectrophotometric studies of the winds of Galactic and Magellanic Cloud Wolf-Rayet stars, 0.1-1.0  $\mu\text{m}$ ”

**P.W. Morris** 1995, Ph. D. thesis, University of Colorado, Boulder, Department of Physics, (JILA thesis publication), under direction of Dr. Peter S. Conti (JILA, Department of Astrophysical, Planetary, and Atmospheric Sciences).

“Laser Raman scattering from Be-doped Ge semiconductors”

**P.W. Morris** 1988, B.S. dissertation, University of Illinois-Chicago, Department of Physics, under direction of Dr. Larry Abels (Department of Physics).