



## **Ion build up by species and energy in the Venusian upper atmosphere**

I. Whittaker (1), M. Grande (1), G. Guymer (1), S. Barabash (2), A. Federov (3), J.J. Sauvaud (3), R. Lundin (2), C.T. Russell (4), Y. Futaana (2), T. L. Zhang (5), H. Andersson (2), K. Brinkfeldt (2), A. Grigoriev (2), M. Holmström (2), M. Yamauchi (2), K. Asamura (6), W. Baumjohann (5), H. Lammer (5), A. J. Coates (7), D. O. Kataria (7), D. R. Linder (7), C. C. Curtis (8), K. C. Hsieh (8), B. R. Sandel (8), H. Gunell (9), H. E. J. Koskinen (10,11), E. Kallio (11), P. Riihelä (11), T. Säles (11), W. Schmidt (11), J. Kozyra (12), N. Krupp (13), M. Fränz (13), J. Woch (13), J. Luhmann (14), S. McKenna-Lawlor (15), C. Mazelle (3), J.-J. Thocaven (3), S. Orsini (16), R. Cerulli-Irelli (16), M. Mura (16), M. Milillo (16), M. Maggi (16), E. Roelof (17), P. Brandt (17), K. Szego (18), J. D. Winningham (19), R. A. Frahm (19), J. Scherrer (19), J. R. Sharber (19), P. Wurz (20) & P. Bochsler (20)

(1) University of Wales Aberystwyth, Penglais, Aberystwyth, Ceredigion SY23 3BZ, UK (2) Swedish Institute of Space Physics, S-98128 Kiruna, Sweden (3) Centre d'Étude Spatiale des Rayonnements, BP-44346, F-31028 Toulouse, France (4) IGPP, University of California, Los Angeles, California 90095, USA (5) Space Research Institute, Austrian Academy of Science, A-8042 Graz, Austria (6) Institute of Space and Astronautical Science, 3-1-1 Yoshinodai, Sagami-hara 229-8510, Japan (7) Mullard Space Science Laboratory, University College London, Holmbury St Mary, Dorking, Surrey RH5 6NT, UK (8) University of Arizona, Tucson, Arizona 85721, USA (9) Department of Physics, West Virginia University, Morgantown, West Virginia 26506-6315, USA (10) Department of Physical Sciences, University of Helsinki, Box 64, 00014 Helsinki, Finland (11) Finnish Meteorological Institute, Box 503, FIN-00101 Helsinki, Finland (12) Space Physics Research Laboratory, University of Michigan, Ann Arbor, Michigan 48109-2143, USA (13) Max-Planck-Institut für Sonnensystemforschung, Max-Planck-Str. 2, D-37191 Katlenburg-Lindau, Germany (14) Space Science Laboratory, University of California, Berkeley, California 94720-7450, USA (15) Space Technology Ireland, National University of Ireland, Maynooth, Co. Kildare, Ireland (16) Istituto di Fisica dello Spazio Interplanetario, I-00133 Rome, Italy (17) Applied Physics

Laboratory, Johns Hopkins University, Laurel, Maryland 20723-6099, USA (18) KFKI  
Research Institute for Particle and Nuclear Physics, PO Box 49, H-1525 Budapest 114,  
Hungary (19) Southwest Research Institute, San Antonio, Texas 78228-0510, USA (20)  
University of Bern, Physikalisches Institut, CH-3012 Bern, Switzerland (icw06@aber.ac.uk /  
Phone: +44 1970 621902)

An investigation is launched into the global scale dynamics of individual ion species and where they cluster. The work is carried out by analysis of the IMA mass spectrometer onboard Venus-Express. By careful bin packing of the data, ion maps can be built up and compared. We examine the location of different populations relative to boundaries. Maps of average cases will be presented, and case study events compared to this baseline.