Tuesday, April 7, 2015
POSTER SESSION: ATMOSPHERE
10:30 a.m.   Room 101

Wilzewski J. S.   Gordon I. E.   Rothman L. S.
CO₂, H₂ and He Line Broadening Coefficients and Pressure Shifts for the HITRAN Database **[#4001]**
In order to aid studies of the Venusian atmosphere the spectral lines of selected molecules in the HITRAN database were supplemented with broadening coefficients (and their temperature exponents) and line shifts due to the pressure of CO_2.

Trainer M. G.   Mahaffy P. R.   Brinckerhoff W. B.   Johnson N. M.   Glaze L. S.
Investigating the Origin and Evolution of Venus with In Situ Mass Spectrometry **[#4003]**
Measurement of noble gas abundances on Venus remain a high priority for planetary science. This can be accomplished as part of an atmospheric investigation using flight-proven mass spectrometer technology and demonstrated enrichment techniques.

Majid W.   Duncan C.   Kuiper T.   Russell C.   Lightsey E.
A Cubesat Mission to Venus: A Low-Cost Approach to the Investigation of Venus Lightning **[#4004]**
We will describe a CubeSat mission concept to study lightning at Venus.

Lee G.   Polidan R.   Sokol D.   Bolisay L.   Barnes N.
Venus Atmospheric Maneuverable Platform (VAMP) Science Vehicle Concept **[#4007]**
We will update the VAMP design and discuss plans for future trade studies, analyses, and prototyping to advance the concept and we will discuss how VAMP will enable opportunities for novel long duration scientific studies of the Venus atmosphere.

Izenberg N. R.   Papadakis S. J.   Monica A. H.   Deglau D. M.
FirefOx — An Oxygen Fugacity Sensor for Venus **[#4008]**
FirefOx is a small, simple primary sensor for the quantitative assessment of partial pressure of oxygen in the lower atmosphere of Venus, to help quantify the surface's oxidation state and stable mineralogy.

Webster C. R.   Blacksberg J.   Christensen L. E.   Flesch G. J.   Forouhar S.   Briggs R.
Keymeulen D.   Mahaffy P. R.
Digital Tunable Laser Spectrometer for Venus Atmospheric Isotope Ratios **[#4012]**
A Venus Tunable Laser Spectrometer (VTLS) can provide high science return for Venus atmospheric and planetary evolution through high-precision measurements of a variety of isotope ratios in C, H, O and S-containing gases, including triple isotopes.

Mimoun D.   Cutts J.   Stevenson D.   Garcia R. F.
Exploring Venus Interior Structure by Detection of Infrasonic Waves **[#4013]**
Knowledge of the interior structure of Venus is currently impeded by the limited time that a seismometer can survive in the atmosphere of Venus. We propose to remotely detect quakes by infrasonic measurements at the top of the cloud layer.

Vento D. M.   Kremic T.   Nakley L. M.
Using the Glenn Extreme Environments Rig (GEER) for Venus Research **[#4014]**
The Glenn Extreme Environments Rig (GEER) has the capability to simulate the Venus atmosphere chemistry, temperature and pressure anywhere from the surface to about 70 km. GEER can provide a CO_2/N_2 with six trace gasses plus water.

Dutt A.   Limaye S. S.
Adiabatic Lapse Rate and Static Stability in the Venus Atmosphere **[#4023]**
We calculate the adiabatic lapse rate and static stability by considering the real gas effects of the binary mixture of carbon dioxide and nitrogen that largely make up the Venus atmosphere through a thermodynamic model explicit in Helmholtz energy.

Steffes P. G.
Laboratory Measurements of the 2–4 mm Opacity of Sulfuric Acid Vapor Under Simulated Venus Conditions **[#4026]**
For over 30 years sulfuric acid vapor has been recognized as a major source of the microwave and millimeter-wave absorption in the atmosphere of Venus. This paper describes a new laboratory measurement campaign to characterize the 2–4 mm opacity.

Makel D. B.   Carranza S.
Development of a Harsh Environment Gas Sensor Array for Venus Atmospheric Measurements **[#4033]**
Progress on the development of a compact chemical microsensor array for profiling the chemical composition of the Venus atmosphere and providing gas composition measurements as part of the long lived lander is described.

Ashish Mr.   Alam Mr.   Limaye Mr.
Blimplane a Conceptual Hybrid UAV for Venus Exploration **[#4034]**
A Semi-Buoyant Aerial Platform is proposed. High fidelity CFD simulation are done to get the vehicle aerodynamic performance.The vehicle can perform surveillance and station keeping missions for altitude range 60–80km. It can take a payload of 100 kg.

Alam Mr.   Saroha Mr.   Priyadarshi Mr.   Limaye Mr.
Hybrid Entry Ship: A Conceptual Entry-Descent and Surveillance Platform for Venus Atmosphere **[#4035]**
A hybrid entry ship concept which will enter from low Venus orbit. It will undergo series of changes in its configuration to meet an optimal entry-descent and surveillance sequence. It houses payloads upto 300 kg. Available power to payload is 250W.