Wednesday, June 27, 2012
POSTER SESSION: TERRESTRIAL PLANET ATMOSPHERES AND CLIMATES: THEORY AND MODELS
5:30 p.m. Rembrandt Yard

Londhe V. D.
Comparative Terrestrial Planet Simulation Model **[#8002]**
The model gives the different comparative details of the various terrestrial planets. Our own solar system is the best model of the habitat system. The habitability depends on the factors such as precise distance from the host star, etc.

Kochemasov G. G.
Atmospheres of Venus, Earth, and Mars: Their Masses and Granulations in Relation to Orbits and Rotations of the Planets **[#8008]**
Masses and granulations (climate cells) of terrestrial planets atmospheres are related to their orbital frequencies as well as to rotation speeds. Tectonic lithospheric granules have a direct connection with atmospheric structures.

Zalucha A. M.
Demonstration of a GCM for Mars, GJ 1214b, Pluto, and Triton **[#8016]**
The MIT GCM dynamical core, in conjunction with the appropriate RT schemes, has been adapted to simulate many planetary bodies: Mars, super-Earth GJ 1214b, Pluto, and Triton. Current applications of the GCM will be demonstrated here.

Parish H. F. Lebonnois S. Schubert G. Covey C. Walterscheid R. L. Grossman A.
Importance of the Angular Momentum Budget in Venus Atmosphere Circulation Models **[#8017]**
We examine the angular momentum budget for different Venus general circulation models. We find that if there is weak angular momentum forcing, numerical diffusion and residual numerical torques can dominate and give unphysical results.

Mandt K. E. Waite J. H. Jr. Nixon C. A. Mousis O.
The Evolution of Titan's Atmosphere and Implications for Climate Change **[#8027]**
The origin of Titan's atmosphere and the history of its methane is a subject of great interest. We use isotopic fractionation to learn about the origin and early history of nitrogen and to set an upper limit for methane timescale.

Azriel M. S. Hill H. G. M.
Planetary Engineering of Venus for Earth **[#8031]**
Venus has potential to serve as a test bed for planetary engineering technologies also applicable to Earth, while modulating Venus' environment. This may enable additional missions to Venus and provide insights for atmospheric modification of Earth.

Kuroda T. Terada N. Kasai Y. Kasaba Y.
Modeling of the Atmospheric Water Cycle Including the Isotopic Ratio on Mars **[#8033]**
We are starting the GCM simulations of water cycle including HDO on Mars. Here we show our preliminary results and future plans connecting from the underground water to the escape processes to the space.

Mendonca J. M. Read P. L. Lewis S. R. Lee C.
The New Oxford Planetary Unified Model System for Venus (OPUS-V) **[#8047]**
We present a new version of the Oxford Venus GCM, which using our new parameterisations produce a realistic Venus mesosphere atmospheric circulation. We present results that give hints to the formation of global super-rotation.

Lewis S. R. Dawson J. Read P. L. Mendonca J. Ruan T. Montabone L.
Super-Rotating Jets in the Atmospheres of Terrestrial Planets **[#8051]**
Super-rotation is a ubiquitous phenomenon in the four substantial atmospheres possessed by solid bodies in the solar system. This paper reviews recent global model results and reanalyses by data assimilation, in particular for Mars and Venus.

Mooring T. A. Wilson R. J. Vallis G. K.
Regularity of Baroclinic Waves in the Terrestrial and Martian Atmospheres **[#8061]**
The winter northern hemisphere of Mars exhibits highly regular baroclinic waves, but understanding of the cause of their regularity remains incomplete. We present preliminary results of an investigation of this phenomenon using a GCM.

Kahre M. A. Hollingsworth J. L. Haberle R. M.
Simulating Mars' Dust Cycle with a Mars General Circulation Model: Effects of Water Ice Cloud Formation on Dust Lifting Strength and Seasonality **[#8062]**
The effects of coupling Mars' dust and water cycles on dust lifting strength and seasonality are investigated with a Mars general circulation model.

Wilson R. J.
Martian Dust Storms, Thermal Tides, and the Hadley Circulation **[#8069]**
The Hadley circulation and the thermal tides are prominent circulation elements in the martian atmosphere. They are sensitive to changes in thermal forcing and lead to a strong coupling between dust lifting by the circulation and radiative heating.