

Thursday, March 21, 2013
POSTER SESSION: PLANETARY ATMOSPHERES
6:00 p.m. Town Center Exhibit Area

[R730]

- Simon-Miller A. A. Morales-Juberias R. Sayanagi K. M.
Read P. L. Choi D. S. *POSTER LOCATION #577*
[A New Feature on Jupiter: Comparison with Saturn's Ribbon](#) [#1110]
Jupiter images from 2007 to present show a wavy feature at 30°N latitude, similar to Saturn's "ribbon." Its nature is studied and compared to the Saturn feature.
- Takahashi Y. Kuramoto K. Hashimoto G. L. Onishi M. *POSTER LOCATION #578*
[What Controls the Tropopause Level of the Jovian Atmosphere?](#) [#2571]
The tropopause of the jovian atmosphere likely exists at 0.5-bar level or deeper. The visible cloud of Jupiter is implied to be mostly stratospheric cloud of NH₃.
- Tejfel V. G. Vdovichenko V. D. Kirienko G. A. Kharitonova G. A. *POSTER LOCATION #579*
[Spectrophotometric Study of the Changes on Jupiter in 2009–2011](#) [#1205]
The behavior of molecular absorption bands during SEB disappearance in 2010 has been studied.
- Richardson M. R. Moses J. I. Line M. R. Barman T. S. Visscher C. et al. *POSTER LOCATION #580*
[The Effect of Metallicity on the Atmospheric Composition of GJ 436b](#) [#2678]
We explore how metallicity affects the composition of the "hot Neptune" exoplanet GJ 436b. Results are compared with Spitzer eclipse observations.
- Zheng X. C. Tian F. *POSTER LOCATION #581*
[The Upper Atmosphere of 55 Cnc e](#) [#1475]
In this work we study the atmosphere stability of 55 Cnc e and the detectability of a possible carbon ion cloud surrounding the planet.
- Simoncini E. Grassi T. *POSTER LOCATION #582*
[Exploring Planetary Biomarkers: A New Physical Method Coupled with New Computational Tool](#) [#1952]
We introduce a new methodology (physical and computational) to calculate the extent of chemical disequilibrium of planetary atmospheres.
- McMahon S. James J. O. Parnell J. *POSTER LOCATION #583*
[Circumstellar Habitable Zones for Deep Biospheres](#) [#2931]
We extend the traditional habitable zone concept for planets with deep subsurface biospheres.
- Tian F. *POSTER LOCATION #584*
[Photochemistry in the Atmospheres of Habitable Planets Surrounding M Dwarfs](#) [#1953]
We model habitable planet's atmospheres under UV spectra of M dwarfs, focusing on whether oxygen can build up to detectable levels by future TPF-like mission.
- Williamson H. N. Grebowsky J. M. *POSTER LOCATION #585*
[Coordinate Transformations of Low Beta Regions in the Nightside Venus Ionosphere](#) [#1237]
We created a new coordinate system dependent on the direction of the interplanetary magnetic field to examine low-β regions in the venusian ionosphere.
- Fukuhara T. Taguchi M. Futaguchi M. Imamura T. *POSTER LOCATION #586*
[Characteristic Features in Venus' Cloud-Top Temperature Obtained by Akatsuki/LIR](#) [#1965]
This shows Venus nightside hemisphere obtained by the Longwave Infrared Camera (LIR) onboard Akatsuki, which is Japanese Venus climate orbiter.

Limaye S. S. Kremic T. Crisp D. Glaze L. S. Rodin A. **POSTER LOCATION #587**
[Needed Observations near the Cloudtop Region of Venus and Potential Means to Obtain them](#) [#2728]

Needed observations near the cloudtops of Venus and the potential means to obtain them based on what we have learned about Venus to date from previous observations.

Scanlon K. E. Head J. W. **POSTER LOCATION #588**
[Downslope Winds and Melting Events in the Antarctic Dry Valleys and on Mars](#) [#2775]

We investigate the effects of foehn episodes on meltwater production in the Antarctic Dry Valleys and whether downslope winds could have melted ice on Mars.

Nuno R. G. Paige D. A. Zurek R. W. **POSTER LOCATION #589**
[Searching for Localized Water Vapor Sources on Mars Utilizing Viking MAWD Data](#) [#2794]

We searched the raster averaged MAWD dataset for localized spikes of column water vapor content at mid-latitude regions, and found 87 points of interest.

Bapst J. Wood S. E. **POSTER LOCATION #590**
[Seasonal Release of Water Vapor by Ground Ice on Mars: Implications for Surface Frosts and Atmospheric Water Abundance](#) [#2819]

Seasonal subsurface water frost sublimates in late winter/early summer; possible diffusion of tens of precipitable micrometers of vapor to the surface/atmosphere.

Brown A. J. Wolff M. J. **POSTER LOCATION #591**
[Climatology of the Martian Polar Regions: Three Mars Years of CRISM/MARCI Observations of Atmospheric Clouds and Dust](#) [#1874]

We present the synthesis of CRISM EPF and MARCI data to examine the evolution of atmospheric water ice and dust opacity at both poles for MY 28–30.

Kerber L. Forget F. Wordsworth R. **POSTER LOCATION #592**
[Sulfur in the Early Martian Atmosphere Revisited: Experiments with a 3-D Global Climate Model](#) [#2296]

The effect of SO₂, H₂S, and H₂SO₄ on the early martian atmosphere is explored using a 3-D global climate model.

Pandya S. H. Joshipura K. N. Vaishnav B. G. **POSTER LOCATION #593**
[Electron Interaction with the Dry Ice \(CO₂ Ice\) in the Polar Cap Regions of Planet Mars](#) [#2183]

The present paper depicts our novel approach to consider for the electron inelastic interactions with dry ice in the polar cap regions of Mars.

Pandya S. H. Joshipura K. N. **POSTER LOCATION #594**
[Electron Density and Ion Production Rate Calculations over the Martian Atmosphere](#) [#2147]

As India and US are expecting Mars mission this year, we have planned to study the martian upper atmosphere-ionosphere by our quantum mechanical approach.

Takahashi Y. O. Hayashi Y.-Y. **POSTER LOCATION #595**
[Meridional Circulation of Martian Middle Atmosphere Simulated by a Mars General Circulation Model](#) [#1464]

Meridional circulation of martian middle atmosphere is investigated by use of Mars atmosphere general circulation model.

Leung C. W.S. **POSTER LOCATION #596**
[Mesoscale Meteorological Modeling at Gale Crater](#) [#2477]

We investigate the atmosphere-surface interactions and wind regimes in the planetary boundary layer forced by heating and cooling over the regional topography.

Livengood T. A. Kostiuk T. Hewagama T. Smith R. L. Sonnabend G. et al. *POSTER LOCATION #597*

[Evidence for Significantly Enriched Heavy Oxygen in Mars Atmosphere](#) [#3040]

We present evidence for diurnal exchange of heavy isotope-enriched carbon dioxide between the Mars atmosphere and regolith.

Manga M. Patel A. Delbridge B. Knappe E. Birch S. et al. *POSTER LOCATION #598*

[Constraints on Surface Conditions and Atmospheric Density Inferred from the Bomb Sag at](#)

[Home Plate, Mars](#) [#1109]

Experiments are used to interpret the bomb sag imaged by Spirit. We infer a wet surface. The penetration depth implies a much more dense atmosphere than today.