

Tuesday, March 20, 2018

[T326]

**POSTER SESSION I: CERES AND VESTA:  
FEATURES, COMPOSITION, AND EVOLUTION  
6:00 p.m. Town Center Exhibit Area**

Mest S. C. Crown D. A. Yingst R. A. Berman D. C.

Williams D. A. et al.

**POSTER LOCATION #349**[The HAMO-Based Global Geologic Map and Chronostratigraphy of Ceres](#) [#2730]

We present the final HAMO-based global geologic map of Ceres, and a preliminary chronostratigraphy derived from stratigraphic relations and crater counts.

Villarreal M. N. Luhmann J. G. Mays M. L. Prettyman T. H.

Yamashita N. et al.

**POSTER LOCATION #350**[Understanding Solar Energetic Particle Propagation to Ceres' Distance to Predict Exospheric Production](#) [#1702]

We practice predicting energetic particle events at Ceres using solar data and GRaND ground truth to determine when telescopes should react to a solar event.

Williams D. A. Buczkowski D. L. Crown D. A. Frigeri A.

Hughson K. et al.

**POSTER LOCATION #351**[Unified Dawn LAMO-Based Global Geologic Map of Ceres](#) [#1614]

This presentation will discuss the global geologic map of Ceres from NASA Dawn mission, unified from 15 LAMO quadrangle maps.

Sori M. M. Sizemore H. G. Byrne S. Bramson A. M. Bland M. T. et al.

**POSTER LOCATION #352**[Ceres' Cryovolcanic History](#) [#1628]

We reconstruct the average cryovolcanic eruption rate on Ceres to be  $\sim 10000 \text{ m}^3/\text{yr}$  over the last  $\sim 1$  Gyr by identifying and modeling old cryovolcanoes.

Bu C. Rodriguez Lopez G. Dukes C. A. McFadden L. A. Li J.-Y. et al.

**POSTER LOCATION #353**[Hydrous Salts on Planetary Surfaces: Laboratory Measurements Under Conditions Relevant to Ceres](#) [#3011]

Laboratory study of spectral and physical effects resulting from low pressure exposure for hydrous salts on cold planetary surfaces.

Carrozzo F. G. De Sanctis M. C. Raponi A. Ammannito E.

Castillo-Rogez J. et al.

**POSTER LOCATION #354**[Distribution of Carbonates on Ceres](#) [#2336]

Mg-Ca and Na carbonates are detected in over Ceres' surface. Localized areas with hydrated Na carbonates suggest that Ceres is a still evolving body.

Thangjam G. Nathues A. Schmedemann N. Mengel K.

Sizemore H. G. et al.

**POSTER LOCATION #355**[Understanding Cryovolcanism on Dwarf Planet Ceres](#) [#2012]

In order to understand cryovolcanism on Ceres, we study potential cryovolcanic and cryogenic features on a global scale using both Dawn FC and VIR data.

Krohn K. Jaumann R. Otto K. A. Stephan K. Wagner R. J. et al.

**POSTER LOCATION #356**[Observations of Ring-Mold Craters on Ceres](#) [#2037]

We found different shapes of ring-mold craters within Occator Crater on Ceres. The craters contain either a central pit, bowl, or a central peak.

Castillo J. A. C. Dombard A. J. D. Schurmeier L. R. S.

**POSTER LOCATION #357**[Ceres' Largest Craters: Age Analysis of Kerwan and Yalode](#) [#2476]

Ceres' big craters: / Old but not overly so / Constraints for models.

Nathues A. Thangjam G. Platz T. Hoffmann M. Schmedemann N. et al. **POSTER LOCATION #358**  
[\*Peculiarities of Occator Crater on \(1\) Ceres\*](#) [#1049]

Dawn FC data is consistent with the ascent of brine at Occator Crater on Ceres from reservoir(s) at depth and recent geologic activity less than 2 Ma ago.

Raponi A. De Sanctis M. C. Carrozzo F. G. Ciarniello M.

Castillo-Rogez J. C. et al.

**POSTER LOCATION #359**

[\*Insight on the Evolution of Occator Crater on Ceres from the Properties of Carbonates, Phyllosilicates, and Chlorides\*](#) [#2008]

Occator Crater on Ceres hosts the so-called Faculae. A possible evolution of the crater and the Faculae is discussed from the results obtained in this work.

Zeilinhofer M. F. Barlow N. G.

**POSTER LOCATION #360**

[\*Preliminary Investigation of the Crustal Characteristics of Ceres Through Analysis of Impact Craters\*](#) [#1464]

The preliminary investigation of the crustal characteristics of Ceres through the analysis of impact craters >1.0 km in diameter.

Scully J. E. C. Buczkowski D. L. Raymond C. A. Bowling T.

Williams D. A. et al.

**POSTER LOCATION #361**

[\*Geologic Mapping of Ceres' Occator Crater and Its Faculae\*](#) [#1637]

We present a geologic map of Occator Crater and its bright interior regions, called faculae, from which we derive a geologic history for the intriguing crater.

Hibbard S. M. Osinski G. R. Tornabene L. L.

**POSTER LOCATION #362**

[\*Crater-Related Surface Morphologies of the Ikapati Crater, Ceres\*](#) [#2761]

Pitted impact melt / Volatiles on Ceres / Dissected terrain.

King S. D. Bland M. T. Castillo-Rogez J. C. Raymond C. A. Russell C. T.

**POSTER LOCATION #363**

[\*Ceres: Jawbreaker or Creamy Nougat Center?\*](#) [#2273]

Deep within Ceres / Mysteries still confound us / Is it mud or ice?

Buczkowski D. L. Sizemore H. G. Bland M. T. Scully J. E. C.

Quick L. C. et al.

**POSTER LOCATION #364**

[\*Floor-Fractured Craters on Ceres: A Geomorphic Study and Analysis of Potential Formation Mechanisms\*](#) [#2148]

We present a geomorphic and topographic analysis of the cerean floor fractured craters and propose hypotheses for their formation.

Hirabayashi M. Fassett C. I. Minton D. A. Collins G. S.

Davison T. M. et al.

**POSTER LOCATION #365**

[\*Topographic Diffusion as a Cause of Variations in Crater Density on Ceres\*](#) [#2091]

Heterogeneous crater populations on Ceres are attributed to variations in topographic diffusion to reach crater equilibrium (saturation).

Wren P. F. Fevig R. A.

**POSTER LOCATION #366**

[\*Using Doublet Craters on Ceres to Constrain the Main Belt Binary Asteroid Population\*](#) [#2328]

Surveyed large region on Ceres for doublet craters. Secondary craters may be resulting in more possible doublets than are expected from a random distribution.

Galiano A. Palomba E. Longobardo A. De Sanctis M. C.

Carrozzo F. G. et al.

**POSTER LOCATION #367**

[\*Ceres Subsurface Mineral Composition Detected by Spectral Analysis of Crater Central Peak Material \(CCP\)\*](#) [#1523]

Spectral analysis of VIR/DAWN data concerning crater central peak material (ccp) located on Ceres can provide a preliminary knowledge of subsurface mineralogy.

Kurokawa H. Ehlmann B. L. Ammannito E. De Sanctis M. C. Lapotre M. et al. **POSTER LOCATION #368**  
[A Bayesian Approach to Deriving Ceres Surface Composition from Dawn VIR Data: Initial Quantification of Bright Spot and Typical Dark Material Phases with this Method](#) [#1908]

We determined Ceres surface composition and statistically rigorous error bars from Dawn VIR data using a Bayesian approach.

Ciarniello M. De Sanctis M. C. Ammannito E. Raponi A. Carrozzo F. G. et al. **POSTER LOCATION #369**  
[VIR-Dawn Observations of Ceres at Low Phase Angles](#) [#1451]

We characterize Ceres' opposition effect as observed with VIR-Dawn by means of Hapke's spectrophotometric modeling and Monte Carlo ray-tracing simulations.

Thangjam G. Nathues A. Mengel K. Cloutis E. A. Tosi F. et al. **POSTER LOCATION #370**  
[Is Dwarf Planet Ceres an Organic Rich Planetary Body?](#) [#2025]

The potential organic-rich areas on a global scale of Ceres are investigated to understand their geologic nature and composition using Dawn FC and VIR data.

Kaplan H. H. Milliken R. E. Alexander C. M. O'D. **POSTER LOCATION #371**  
[New Constraints on Abundance and Composition of Organic Matter on Ceres from Laboratory Reflectance Spectra](#) [#1155]

Reflectance spectra of carbonaceous chondrites and extracted insoluble organic matter are used to analyze the organic spectral signature observed on Ceres.

Yamashita N. Prettyman T. H. Villarreal M. N. **POSTER LOCATION #372**  
[Catalog of Transient Radiation Events Detected by GRaND at Vesta and Ceres](#) [#1152]

We've catalogued and characterized nearly all transient radiation events detected by Gamma Ray and Neutron Detector during Dawn's mission to Vesta and Ceres.

Liu Z. Yue Z. Michael G. G. Gou S. Di K. et al. **POSTER LOCATION #373**  
[A Global Database and Analyses of \(4\) Vesta Craters](#) [#1136]

A database for craters larger than 0.7 km in diameter is created for (4) Vesta, and the parameters of ellipticity, azimuth, depth, etc., are derived.

Michalik T. Otto K. Jaumann R. Maturilli A. Helbert J. et al. **POSTER LOCATION #374**  
[Experimental Assessment of the High Reflectance Pitted Terrains on Vesta](#) [#2265]

Pitted terrains on Vesta show higher reflectances and stronger pyroxene absorptions. Here, we present results of laboratory experiments with analogue materials.

Schmedemann N. Neesemann A. Schulzeck F. Krohn K. van der Gathen I. et al. **POSTER LOCATION #375**  
[The Distribution of Diogenitic Material on Vesta in Comparison with Rheasilvia Ejecta](#) [#1452]

We modelled the ejecta distribution of the Rheasilvia impact on Vesta and compare with the spatial distribution of lower crust/upper mantle material.

Palomba E. D'Aversa E. Sato T. Longobardo A. Dirri F. et al. **POSTER LOCATION #376**  
[MID-IR Spectral Observation of Vesta](#) [#2458]

In this work we present new telescopic observations of the Vesta asteroid made at the Subaru Telescope by using the COMICS IR spectrometer.

Ishihara Y. Hareyama M. Ohtake M.

**POSTER LOCATION #377**

[\*Preliminary Unsupervised Classification of 4 Vesta's Surface Using Multiband Reflectance Data Obtained by Dawn Framing Camera\*](#) [#1216]

We have classified Vesta's surface in terms of reflectance characteristics using unsupervised method. Result captured regional difference in mineralogy.

O'Brien P. Byrne S. Hayne P. O.

**POSTER LOCATION #378**

[\*Ceres' Global Surface Roughness: Implications for Sub-Resolution Cold Traps\*](#) [#2672]

We present analysis of global surface roughness properties for Ceres. Retrieved parameters calibrate a model that produces realistic landscapes at all scales.