

Tuesday, March 16, 2004
POSTER SESSION I: VENUS
7:00 p.m. Fitness Center

Arp Z. A. Cremers D. A. Wiens R. C.

Preliminary Study of Laser-induced Breakdown Spectroscopy (LIBS) for a Venus Mission [#1338]

Here we evaluate LIBS detection of basalt in an environment with a gas pressure similar to that on Venus. Results show that at Venus pressures it is feasible to obtain LIBS spectra useful for elemental analysis.

Marinangeli L. L. Baines K. Garcia R. Drossart P. Piccioni G. Benkhoff J. Helbert J. Langevin Y. Ori G. G. Komatsu G. Pope I. C.

Venus Surface Investigation Using VIRTIS Onboard the ESA/Venus Express Mission [#1363]

VIRTIS is a Visible and Infrared Thermal Imaging Spectrometer that will be onboard the ESA/Venus Express Mission. VIRTIS will map the surface temperature, measure the redox state to define minerals stability and look for recent volcanic activity.

Kreslavsky M. A. Head J. W. III

Use of Magellan Images for Venus Landing Safety Assessment [#1419]

We demonstrate the use of Magellan radar stereo images to assess landing safety. For a sample area in Fortuna Tessera we show that steep (>20 deg) 100-m-scale slopes are rare and that the typical surface is not covered with boulders.

Schaefer L. Fegley B. Jr.

Volatile Element Geochemistry in the Lower Atmosphere of Venus [#1182]

Equilibrium calculations for volatile elements on Venus predict PbS, Bi₂S₃, but not Te is the radar bright metallic frost in the highlands, Pb-Pb dating of PbS could give Venus' age and HBr (~3–11 ppbv) should be detectable in the lower atmosphere.

Stofan E. R. Brian A. W. Guest J. E.

Resurfacing Styles and Rates on Venus: Assessment of 18 Venesian Quadrangles [#1179]

We find that the majority of plains resurfacing on Venus can be tied to an identifiable source, that fields of small edifices contribute significantly to resurfacing, and that styles have not changed over the last ~750 my.

Matias A. Jurdy D. M. Stoddard P. R.

Stereo Imaging of Impact Craters in the Beta-Atla-Themis (BAT) Region, Venus [#1383]

We used Magellan radar images to derived high resolution topography using stereo imaging for impact craters in the BAT region of Venus. Also, altimetry data was best-fit with dipping planes to assess the tilt.

Bondarenko N. V. Head J. W. III

Depths of Extended Crater-related Deposits on Venus [#1187]

We examine crater-related parabolic deposits on Venus with Magellan radiophysical data. We found that their maximal thickness is a few meters. Thin mantles are not seen in SAR images but are detectable in emissivity maps.

Long S. M. Grosfils E. B.

Potential Pyroclastic Deposit in the Nemesis Tessera (V14) Quadrangle of Venus [#1194]

Integrated study of geomorphological properties as well as backscatter and radiometric data reveals a potential young pyroclastic flow in the Nemesis Tessera quadrangle on Venus.

Krassilnikov A. S. Kostama V.-P. Aittola M.

Relationship Between Coronae, Regional Plains and Rift Zones on Venus, Preliminary Results [#1583]

We studied 104 coronae of type 1 and 2 (20% of the population). Most of coronae (77%) have no association with rift zones, 97% of coronae started to form before regional plains, 28% were active after plains, only 3% started to form after plains.

Martin P. Stofan E. R.

Coronae of Parga Chasma, Venus [#1576]

Parga Chasma is a 10,000km long fracture and trough system in the southern hemisphere of Venus. We examine the variations in corona size, topography, annulus characteristics, associated volcanism and relative timing of corona formation with respect to rifting along the Parga system.

Grindrod P. M. Stofan E. R. Brian A. W. Guest J. E.

The Evolution of Four Volcano/Corona 'Hybrids' on Venus [#1250]

We examine the geologic evolution of four volcano/corona 'hybrid' features on Venus to constrain formation processes and conditions.

Krassilnikov A. S. Head J. W. III

Calderas on Venus and Earth: Comparison and Models of Formation [#1531]

We have studied the topography and geology of all calderas and their surroundings on Venus by way of detailed geological mapping. Unlike calderas on Earth formation of venusian calderas appears to be related to evolution of large magmatic diapirs.

McColley S. M. Head J. W. III

Venus Festoon Deposits: Analysis of Characteristics and Modes of Emplacement [#1376]

Festoon deposits on Venus are characterized through morphological observations, fractal analysis, and rheological models to determine similarities and differences.

Swafford L. C. Kiefer W. S.

Topographic and Structural Analysis of Devana Chasma, Venus: A Propagating Rift System [#1997]

Variations in average rift flank height and horizontal extension as a function of distance along Devana Chasma supports the hypothesis that Devana formed as two distinct propagating rifts.

Buczowski D. L. McGill G. E. Cooke M. L.

Anomalous Radial Structures at Irnini Mons, Venus: A Parametric Study of Stresses on a Pressurized Hole [#1561]

Radial features around Irnini Mons include ridges as well as grabens. Analytical modeling shows that both grabens and ridges will form around the volcano in the compressive regional stress field responsible for east-west trending wrinkle ridges.

Dennedy-Frank P. J. Simons M.

Analysis of Gravity and Topography Signals in Atalanta-Vinmara and Lavinia Planitiae [#1208]

We examine gravity and topography signals in the deformation belts of Atalanta- Vinmara and Lavinia Planitiae, and suggest that these belts are underlain by low- density roots. This work may lead us to better understand the formation of these features.

Ghail R. C. Rolfe S. Watt L.

Canali are Lava, Not River, Channels [#1760]

Several canali have been studied using stereo DEMs. The results support their volcanic origin and a composition of alkali carbonatite.

Lang N. P. Hansen V. L.

Formation of Venusian Channels in a Shield Paint Substrate [#2098]

We present a new hypothesis where Venusian channels may result from the thermal erosion of shield paint by mafic lava.