Tuesday, March 19, 2013
MOONLAKER: TITAN’S FLUVIAL PROCESSES,
SURFACE GEOLOGY AND ATMOSPHERE
1:30 p.m. Montgomery Ballroom

Chairs: Thomas McCord
        Alexander Hayes

1:30 p.m. McCord T. B. * Hayne P. O. Sotin C.
        Constraints on Titan’s Surface Composition Using VIMS Solar Occultation Measurements [#1687]
        VIMS solar occultation observations are used to estimate atmospheric effects and determine surface
        reflectance and composition.

        Morphologic Analysis of Polar Landscape Evolution on Titan [#2000]
        We will present an examination of Titan’s polar landscapes through an examination of the
        relationships between lacustrine, fluvial, and hillslope morphologies.

        Morphological Evidence for Former Seas Near Titan’s South Pole [#1764]
        Residual small lakes and extensive sea beds attest to extensive surface liquids near Titan’s south pole,
        perhaps 30–50 k.y. ago.

        Ephemeral Lakes or Long-Lived Seas on Titan: The Importance of Aquifer Properties and
        Seasonal Climate [#2997]
        The importance of aquifer properties and climate on the size distribution and seasonality of lakes on
        Titan is investigated using a groundwater flow model.

2:30 p.m. Glein C. R. * Shock E. L.
        Introducing a New Kind of Geochemistry: The Thermodynamics of Cryogenic Fluvial
        Geochemistry on Titan [#1229]
        We present a thermodynamic model that allows exploration of the geochemistry that is driven by cold
        liquid hydrocarbons on Saturn’s moon Titan.

2:45 p.m. Malaska M. * Hodyss R.
        Laboratory Investigation of Benzene Dissolving in a Titan Lake [#2744]
        Tiny little rings / Drifting in a Titan lake / Fade away slowly.

3:00 p.m. Wagner A. * Chevrier V. F. Magar S. S. Luspay-Kuti A. Roe L. A.
        Evaporation of Ethane-Methane Liquid Mixtures Under Simulated Titan Conditions [#3047]
        We present the results of an experimental study regarding the evaporation rates of liquid ethane-
        methane mixtures under simulated Titan conditions.

3:15 p.m. Davies A. G. * Sotin C. Choukroun M. Matson D. L. Johnson T. V.
        Methane Clathrate Destabilisation by Heat From Lava Flows: Implications for Supplying Titan’s
        Atmospheric Methane [#1681]
        The thermal destabilisation of methane clathrates by cryolava flows and intrusions is sufficient to
        resupply Titan’s current atmospheric methane.

3:30 p.m. Moore J. M. * Howard A. D. Schenk P. M.
        Bedrock Denudation on Titan: Estimates of Vertical Extent and Lateral Debris Dispersion [#1763]
        Analysis of Titan’s landscape that suggest that ~ 250 m of net bedrock erosion has at least locally
        taken place and ~1 km of maximum local erosion.
3:45 p.m. Singh S. * Chevrier V. F. Ulrich R.
Numerical Modeling of Titan Fluvial Features [#2913]
Minimum constraints of the fluid flows on Titan have been calculated to determine the boulder size with viscosity and temperature-dependent fluid equation.

Alluvial Fans on Titan Reveal Materials, Processes and Regional Conditions [#2641]
Alluvial fans on Titan reveal vigorous fluvial processes occur or occurred, indicate a prolonged depositional history, and may illuminate climate conditions.

The Unusual Crater Soi on Titan: Possible Formation Scenarios [#2079]
Titan’s Soi crater / Barely makes a surface dent /Filled by sediments?

4:30 p.m. Garcia A. * Rodriguez S. Le Gall A. Courrech du Pont S. Narteau C. et al.
Global Mapping and Characterization of Titan’s Dune Fields with Cassini: Correlation Between RADAR and VIMS Observations [#1978]
We analyzed dunes coverage of Titan’s surface and the correlation between the dunes imaged by the RADAR/SAR with the two “brown” and “blue” units given by VIMS.