Friday, March 14, 2008
COMPARATIVE PLANETOLOGY
8:30 a.m. Marina Plaza Ballroom

Chairs: **C. J. O'Neill**
J. C. Castillo-Rogez

8:30 a.m. Neukum G. *
The Lunar and Martian Cratering Records and Chronologies **[#2509]**
The Hartmann and Neukum (2001) Cratering Chronology based on a transfer of the lunar cratering chronology to Mars is reconfirmed and found to be accurate within a systematic uncertainty of ≤ 30%. Small craters are mainly primaries and not secondaries.

8:45 a.m. Garvin J. B. * Frawley J. J.
Geometric Properties of the Merewether Structure, Newfoundland, Canada **[#1811]**
Geometric properties of the Merewether craterform in Labrador (Canada) are compared with measurements of fresh, simple craters on Mars, Earth, and the Moon, with the conclusion that Merewether is an impact crater.

9:00 a.m. Kreslavsky M. A. * Head J. W. III Harmon J. K.
Large-Scale Topographic Roughness of Terrestrial Planets: A Comparison **[#1472]**
We compare topographic roughness of typical terrains on Mercury, Venus, the Earth, the Moon, and Mars at the spatial scales from 30 to 200 km. We specifically discuss differences in heavily cratered terrains on the Moon, Mercury and Mars.

9:15 a.m. Bibring J.-P. * Langevin Y. Poulet F. Gondet B. OMEGA Team
Mars Global History Derived from OMEGA/Mars Express Observations **[#2009]**
The mineralogical and climatic history derived from the OMEGA/Mars Express data comes to a consistent scenario, enlightening the critical processes that led Mars and the Earth to follow diverging evolutionary pathways.

9:30 a.m. O'Neill C. J. * Lenardic A. Jellinek A. M.
Plate Tectonics or Not: Lithospheric Stress on Terrestrial Planets and Super-Earths **[#1124]**
We investigate the role of driving mantle stresses and lithospheric strength in determining whether or not a planet is capable of lithospheric failure and thus potentially plate tectonics.

9:45 a.m. Burke K. C. * Torsvik T. H. Smethurst M. A. Steinberger B. Werner S. C.
Possible Analogous Long-Term History of the Terrestrial Geoid and the Martian Areoid **[#1130]**
Earth's Large Igneous Provinces erupted at the edges of residual geoid highs; martian volcanism and aeroid may be similarly related.

10:00 a.m. Hughes S. S. * Sakimoto S. E. H. Gregg T. K. P.
A Petrogenetic Model of Plains-style Low Shield Volcanoes on Mars — Implications for Magma Production in the Tharsis Region **[#1619]**
A general petrogenetic model illustrates processes in most, if not all, vent fields in plains-style volcanic settings. Low shields in the Tharsis region could be targets to evaluate possible serial magmatism and source mixing.

10:15 a.m. Garry W. B. * Zimbelman J. R. Bleacher J. E.
Morphology and Emplacement Processes at the Distal End of the Carrizozo Lava Flow, New Mexico: Implications for Martian Sheet Flows **[#1734]**
The morphology at the distal end of the Carrizozo lava flow in New Mexico provides insight for the emplacement of sheet flows on Mars. Observations suggest that significant inflation has occurred to form flat platform surfaces and terraced margins.

10:30 a.m. Morgan G. A. * Head J. W. III Marchant D. R. Dickson J. Levy J. S.
Interaction Between Gullies and Lobate Debris Tongues on Mars and in the Antarctic Dry Valleys **[#2303]**
We report on our analysis of HiRISE images of a 4 km long, lobate debris tongue, a class of feature currently unreported in the literature and compare it to a similar feature investigated in the Antarctic Dry Valleys.

10:45 a.m. Koutnik M. R. * Waddington E. D. Winebrenner D. P. Neumann T. A.
Was Martian Ice Warmer in the Past? **[#2293]**
We find that the conditions on present-day Mars are inconsistent with the present-day shape of Gemina Lingula, NPLD. We also find that Gemina Lingula ice had to be warmer in the past to develop its present-day surface shape in a physically reasonable interval of time.

11:00 a.m. Mitchell K. L. * Lopes R. M. C. Radebaugh J. Lorenz R. D. Stofan E. R. Wall S. D. Kargel J. S. Kirk R. L. Lunine J. I. Ostro S. J. Farr T. Cassini RADAR Team
The Formation of High Latitude Karst Lakes on Titan and Implications for the Existence of Polar Caps **[#2170]**
Caldera-like depressions containing lakes near Titan's poles are interpreted to be the result of karstic dissolution. We present a simple model for dissolution of lake depressions on Titan, and find a wide range of candidate solutes.

11:15 a.m. Castillo-Rogez J. C. * Matson D. L. Kargel J. S. Vance S. D. Johnson T. V.
Role of Hydrothermal Geochemistry in the Geophysical Evolution of Icy Bodies **[#2461]**
We address some of the consequences of the geochemical changes resulting from hydrothermal activity in icy objects (meteorite parent bodies, icy satellites, KBOs) and discuss the factors determining the extent of hydrothermal activity in these objects.

11:30 a.m. Rodriguez J. A. P. * Zimbelman J. R. Kargel J. S. Tanaka K. L. Yamamoto A. Sasaki S.
The Pali Aike Windstreak Field, Southern Patagonia, Argentina **[#1518]**
Windstreaks are amongst the most common aeolian landforms on Mars, yet they are extremely rare on Earth. We have identified and carried out field based observations of an outstanding zone of windstreaks in southern Patagonia Argentina.