

The 46th Vernadsky-Brown Microsymposium on Comparative Planetology

V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry
Russian Academy of Sciences, Moscow, Russia, October 2-3, 2007

Organizers: Vernadsky Institute and Brown University

Sponsor: Russian Foundation of Basic Sciences

2 October

9:00-9:30 – Introductory notes: J.W. Head and E.M. Galimov, Technical notes: A.T. Basilevsky

9:30-13:00 - Session “Mars”,

Co-Chairs: J. Raitala and R.O. Kuzmin

9:30 – 10:00 **J.W. Head.** Evidence for non-polar ice deposits in the past history of Mars.

10:00–10:30 **G.A. Morgan, J.W. Head.** Characterization of intermediate units and layered deposits within the LVF/LDA deposits of the dichotomy boundary of Mars.

10:30–11:00 **R.O. Kuzmin, E.V. Zabalueva, P.R. Christensen, I.G. Mitrofanov, M.L. Litvak.** Mars: Observation of the water amount increasing in the surface layer during winter season within latitude belt $\pm 50^\circ$ based on the TES and HEND data analysis.

11:00-11:30 **M.A. Kreslavsky, J.W. Head.** Assessment of "wet" mechanism of slope streaks formation on Mars.

11:30–12:00 **A.T. Basilevsky, G. Neukum, S. Werner, S. van Gasselt, A. Dumke, T. Kneissl, D. Rommel, L. Wendt, U. Wolf, W. Zuschneid, J.W. Head.** Geologic history of Mangala Valles, Mars, from geologic analysis and crater counts.

12:00-12:30 **V.-P. Kostama, M.A. Ivanov, J. Korteniemi, J. Raitala, T. Tormanen, G. Neukum.** Western Promethei Terra smooth plains region, Mars: A volcanic province?

12:30-13:00 **J. Raitala, P. Esestime, J. Korteniemi, V.-P. Kostama, G. Neukum.** Geologic aspects of Claritas Fossae on Mars: Tectonic and paleo-environmental constraints.

13:00–14:00 *Lunch break*

14:00-16:00 - Session “Venus and super Earth planets”,

Co-Chairs: N. Bondarenko and A.A. Ariskin

14:00-14:30 **N.V. Bondarenko.** Warm lava flows on Venus?

14:30-15:00 **J. Helbert, N. Mueller, P. Kostama, G. Hashimoto, L. Marinangeli, G. Piccioni, P. Drossart and VIRTIS on Venus Express team.** Exploring the surface of Venus with VIRTIS on Venus Express.

15:00-15:30 **M.A. Ivanov, J.W. Head, A.T. Basilevsky.** The history of topography on Venus.

15:30-15:50 **T. Tormanen, V.-P. Kostama, M. Hyvarinen, M. Aittola, J. Raitala.** Coranae and arachnoids of Venus revisited: Sizes and topographic characteristics.

15:50-16:10 **S. Franck, C. Bounama, W. von Bloh, M. Cunt.** Habitability of super-Earth planets.

16:10-16:30 *Coffee break*

16:30-18:00 Poster session “Mars and Venus”.

Conveners: J. Korteniemi, and A.A. Berezhnoi

Mars **N.A. Evdokimova, R.O. Kuzmin, A.V. Rodin, A.A. Fedorova, O.I. Korablev, J.-P. Bibring,** and the OMEGA Team. Seasonal dynamics of the water-ice on the surface of the northern polar cap of Mars based on the Omega data.

C.I. Fassett, B.L. Ehlmann, J.W. Head, J.F. Mustard, S.C. Schon, S.L. Murchie.

Sedimentary Fan Deposits in Jezero Crater Lake, in the Nili Fossae Region, Mars: Meter-scale layering and phyllosilicate-bearing sediments.

J. Korteniemi, M. Hyvarinen, V.-P. Kostama, M. Aittola, J. Raitala. Possible dike-related features in the Hadriaca Patera region, Mars.

J. Korteniemi, V.-P. Kostama, M.A. Ivanov, J. Raitala, T. Tormanen, G. Neukum. Morphological surface features in the West Promethei Terra region, Mars.

D. Mimoun, P. Lognonne, P. Schibler, W.T. Pike, D Giardini., U. Christensen, A. Berg. The SEIS-EXOMARS experiment: A planetary seismometer for Mars.

Venus M. Aittola, T. Ohman, J.J. Leitner, V.-P. Kostama, J. Raitala, T. Tormanen.

Polygonal impact craters on Venus and their associations with surrounding tectonic features.

A.T. Basilevsky, E.V. Shalygin, D.V. Titov, W.J. Markiewicz, F. Scholten, M.A. Kreslavsky. Geologic interpretation of the surface thermal emission images taken by the Venus Monitoring Camera, Venus Express: The approach and initial results.

Yu.N. Bratkov. Concentric family of coronae around Great Russian Plane: Comparing with Mars and with Artemis Corona (Venus).

E.N. Guseva. Topography and extension estimates for rift zones of Beta and Alpha regions.

M.A. Ivanov. Global geological map of Venus: Preliminary results.

V.P. Kryuchkov, J. Raitala, T. Tormanen. Distribution of coronae on surface of Venus in compliance with morphological parameters of inside depression of these structures.

18:00-20:00 *American buffet and slide session*

3 October

9:00-13:00 Session “The Moon, Titan, Mercury and Radiation Issues”

Co-Chairs: M.A. Kreslavsky and A. Chicarro

9:00-9:30 **C.M. Pieters, J.W. Head, P. Isaacson, N. Petro, C. Runyon, M. Ohtake, B. Foing, M. Grande.** Lunar international science coordination/calibration targets.

9:30-10:00 **L.V. Starukhina.** Ice on the Moon: Reanalysis of the origin and survival conditions.

10:00-10:30 **V. Kaydash, M. Kreslavsky, Yu. Shkuratov, S. Gerasimenko, P. Pinet, S. Chevrel, J.-L. Josset, S. Beauvivre, M. Almeida, B. Foing.** Surface variations of phase function steepness for two lunar sites from SMART-1 AMIE data.

10:30 -11:00 *Coffee break*

11:00-11:30 **V. Kaydash, M. Kreslavsky, Yu. Shkuratov, S. Gerasimenko, P. Pinet, S. Chevrel, J.-L. Josset., S. Beauvivre, B. Foing.** Topography of selected lunar areas from SMART-1 AMIE data.

11:30-12:00 **A.V. Rodin, Yu.V. Skorov, H.U. Keller.** Microphysics of atmospheric aerosol of Titan.

12:00-12:30 **A.A. Berezhnoy.** Impact-produced exosphere of Mercury.

12:30-13:00 **G. DeAngelis, F.F. Badavi, S.R. Blattnig, M.S. Cloudsley, R.C. Singleterry, J.W. Wilson.** Time-dependent models for the radiation environment of planet Mars.

13:00-14:00 *Lunch break*

14:00-16:00 Session “Extraterrestrial materials”

Co-Chairs: G.J. Flynn and V.A. Alexeev

14:00 -15:00 **G.J. Flynn** The Stardust collection of comet 81p/Wild 2 particles: A comparison with Vega and Giotto results for 1p/Halley.

15:00-15:30 **V.A. Alexeev, V.D. Gorin, L.L. Kashkarov, G.K. Ustinova.** The Main Belt asteroid 3628 Boznemcova as possible source of the LL6-chondrites.

15:30-16:00 **L. Friedman** – The Planetary Society: What we are doing.

16:00 -16:30 *Coffee break*

16:30-18:00 Poster session “Impact craters, Atmosphere, Mercury, Meteorites, the Moon, Small bodies, Radiolocation”.

Conveners: G.G. Kochemasov and V. Kaidash

- Atmosphere** **G.G. Kochemasov**. Atmospheric wave granulation in the solar system: The star – planets – satellite
- O.S. Shalygina, V.V. Korokhin, L.A Akimov., O.M. Starodubtseva, L.V. Starukhina, G.P. Marchenko, E.V. Shalygin, Yu.I. Velikodsky**. Studying the physical conditions in Jupiter's stratosphere and polar aerosol haze formation.
- Earth** **V.I. Sirotin**. To the problem of pre-Archean history of the Earth (on the basis of comparative planetology data)
- Impact craters** **P.S. Kumar, D.A. Kring**. Structural geology of simple impact craters: Meteor crater, USA and Lonar crater, India.
- Mercury** **E.A. Kozlova**. The low-latitudinal cold traps on Mercury.
- Meteorites** **V.A. Alexeev, G.K. Ustinova, V.D. Gorin**. Pre-atmospheric sizes and ablation of the Kilabo and Bensour LL6-chondrites.
- V.A. Alexeev**. Complex exposure histories of the chondrites from cosmogenic noble gases and radionuclides.
- V.D. Gorin, V.A. Alexeev, G.K. Ustinova**. Pre-atmospheric size and orbit of the Bukhara CV3-chondrite.
- A.I. Ivliev, N.S. Kuyunko**. Investigation of ordinary chondrites by the thermoluminescence method.
- L.L. Kashkarov, G.V. Kalinina**. Track investigation for the chondrites Kilabo LL6 and Bukhara CV3: Different radiation-thermal history.
- Z.A. Lavrentjeva**. Martian meteorites: Clues to petrography and petrogenesis of the parent body.
- E.N. Slyuta, S.M. Nikitin, A.V Korochantsev, C.A. Lorents**. Preliminary data on physical and mechanical properties of Sayh Al Uhaymir 001 meteorite.
- G.K. Ustinova, V.A. Alexeev, V.D. Gorin**. Orbits and probable parent body of the Kilabo and Bensour LL6-chondrites.
- G.K. Ustinova**. On condensation reservoirs of CAI of carbonaceous chondrites.
- Moon** **G. DeAngelis, F.F. Badavi, S.R. Blattnig, J.M. Clem, M.S. Cloudsley, R.K. Tripathi, J.W. Wilson**. Time-dependent models for the radiation environment on the Moon.
- E. Lazarev, J. Rodionova**. Morphometric analysis of the lunar surface on the base of Clementine data.
- S.G. Pugacheva, V.V. Shevchenko**. Exploration of the Moon's thermal emission from the data of the Clementine spacecraft and of the GOMS artificial Earth satellite.
- M.I. Shpekin, R.A. Sitdikova**. Topographic survey of Aitken crater on the far side of the Moon.
- E.N. Slyuta, A.M. Abdrahimov, E.M. Galimov, A.V. Egorov, A.M. Dolgin, A.V. Korovin, B.A. Sokolov, A.N. Sherbakov, I.P. Terentiev**. Enterprising project of the next Moon investigations.
- L. Yangxiayi, V.V. Shevchenko**. Correlations between iron abundances and lunar surface features: Crater Kepler area.
- Radar location** **Ya.A. Ilyushin**. Deep subsurface sounding by the synthetic aperture radar: Impact of the ionospheric irregularities and surface roughness.
- Small Bodies** **I.A. Dulova, S.I. Skuratovsky, Y.V. Kornienko, N.V. Bondarenko**. Estimation of surface albedo variations for the purposes of relief reconstruction.
- G.G. Kochemasov**. Plato' polyhedrons as shapes of small satellites in the outer Solar system.
- N.V. Pupysheva, A.T. Basilevsky**. Processes of regolith formation and transportation on small bodies.

E.N. Slyuta. Self-gravity and rheology of small Solar system bodies.

R.J. Wagner, G. Neukum, B. Giese, T Roatsch, U. Wolf. The geology of Saturn's satellite Rhea seen by the Cassini ISS camera: Cratered plains, impact basins, and tectonic structures.

18:00-22:00 – Russian hosts invite foreign guests for home dinners

**Print only
abstracts:**

J.L. Dickson, J.W. Head, D.R. Marchant Late Amazonian glaciation at the dichotomy boundary on Mars: Evidence for glacial thickness maxima and multiple glacial phases.

J. W. Head. Evolution of the terrestrial planets.

J. W. Head, L. Wilson. Volcano-ice interactions at Arsia Mons, Mars.

J. W. Head, J. L. Dickson, D. R. Marchant. New evidence for kilometer-thick ice deposits in Phlegra Montes, Mars.

D. M. Hurwitz, J. W. Head. Surface features in Snegurochka Planitia (V1) and their implications for mantle evolution on Venus.

S.J. Kadish, N.G. Barlow. Pedestal crater distribution and the role of a latitude dependent ice-rich regolith.

S.J. Kadish, J.W. Head. The Ascraeus Mons fan-shaped deposit: Evidence for subglacial volcanism.

L. Kerber, J.W. Head. Pedestal craters near Apollinaris Patera: Formation, distribution and implications.

A. Kress, J. W. Head. Oyster-shell craters in Mamers Vallis, north Arabia Terra, Mars: Definition and implications.

P.S. Kumar, J.W. Head. Large-scale crustal extension and volcanism: An example from Lada Terra.

P.S. Kumar, J.W. Head, D.A. Kring. Structural and lithologic controls of gully formation on the inner wall of Meteor crater, Arizona: Implication for the origin of Mars gullies.

J.S. Levy, J.W. Head, D.R. Marchant, G.A. Morgan, J.L. Dickson. Gully-polygon interactions and stratigraphy on Earth and Mars: Sand-wedge polygons as part of cold-desert, near-surface fluvial systems.

S.C. Schon, C.I. Fassett, J.W. Head. Jezero crater deltas: Insights from terrestrial analogs.

S.C. Schon, J.W. Head, R.E. Milliken. Layered morphology of the latitude-dependent mantle.