12th International Platinum Symposium

11-14 August 2014, Yekaterinburg, Urals, Russia

http://12ips.uran.ru

PROGRAM

Organizers

Russian Academy of Sciences, Ural Branch
Zavaritsky Institute of Geology and Geochemistry

Ural Federal University

Co-organizers

NORILSK NICKEL

RUSSIAN FOUNDATION FOR BASIC RESEARCH
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A Welcome from the Chairman of the Ural Branch of the Russian Academy of Sciences (RAS), Vice-President of RAS

As Chairman of the Ural Branch of the Russian Academy of Sciences (RAS), I have the pleasure and honor to invite scientists and officials of mining companies to participate in the 12th International Platinum Symposium (12 IPS), which will be held for the first time in the Urals, where the world platinum industry has started its development. The Urals is not only the boundary separating the continents of Europe and Asia, but it is also a place that connects people from different continents, uniting them in the common Eurasian space. The unique geographical location of the Urals, its well-developed transportation infrastructure, and high level of social and economic development of the region make it attractive for investments and ambitious international projects, both in industry and science. The basis for this is the unique natural resources of the Urals exploited for over 300 years and still remaining the largest donor to the Russian industry. The progress of mining, metallurgy, engineering and electronic industry in the Urals stimulated the development of science and the emergence of large scientific and research centers, universities and other higher education institutions here. Currently Yekaterinburg is one of the largest research centers in Russia, with the Ural Branch of RAS that has several dozens of research institutes in different fields of research. The Ural Branch includes six institutes which carry out research in the field of the Earth sciences. One of them, the Institute of Geology and Geochemistry, UB RAS, is the organizer of the 12th International Platinum Symposium. Suggested scientific sessions promise a stimulating scientific program of oral and poster presentations. A variety of field trips to the places, where many of us have never been before, also promise to attract many participants. I do anticipate that the time spent in the Urals and in Yekaterinburg will be for most of you the period of new scientific contacts, ideas and plans for the future. I would like to thank the organizers of the 12th IPS for their work and look forward to meeting you in Yekaterinburg.

Valery Charushin, Vice-President of RAS

A Welcome from the Rector of the Ural Federal University

As Rector of the Ural Federal University named after the first President of Russia Boris N. Yeltsin, I am pleased to welcome participants of the 12th International Platinum Symposium held on August 11th - 14th, 2014. This Symposium is a great event in the Scientific World and provides nice opportunities for discussing the most important problems concerning the platinum-group elements, their geology, mineralogy, geochemistry, exploration, mining and technical applications. The Ural Federal University and the local organizing committee hope to create a friendly working atmosphere for a wide exchange of innovative scientific ideas and new research projects for all attendees, and a learning experience for young scientists. The Urals has always been one of the most industrially developed regions of Russia. A lot of world-class ore deposits of different types are situated in the Urals. They are the base for the Ural metallurgical and engineering industry. The Ural Federal University teaches tens of thousands of students each year, and after graduation most of them become leaders in this business. For the participants of the 12th International Platinum Symposium it will be interesting to learn that at the beginning of the XIX century the Urals became the biggest world producer of platinum and kept this position for more than 100 years. The first platinum placers were discovered in 1824 in the Central Urals and some of them are still exploited. The unique placers and small but famous ore platinum deposits are related to the so-called Ural Platinum Belt, the largest chain of mafic-ultramafic massifs that are situated in the Central and Northern Urals. You will get an opportunity to visit some massifs, deposits and enterprises and to touch upon the real history of the Ural metallurgical and platinum industry development. We hope that you will enjoy your trip to the Urals and your stay in our city and the University, and traveling in the Urals.

Yours sincerely
Victor Koksharov, Rector of the Ural Federal University

12 IPS - MEETING CALENDAR

Events	Thur 31 July	Fri 1 Aug	Sat 2 Aug	Sun 3 Aug	Mon 4 Aug	Tues 5 Aug	Wed 6 Aug	Thur 7 Aug	Fri 8 Aug	Sat 9 Aug	Sun 10 Aug	Mon 11 Aug	Tues 12 Aug	Wed 13 Aug	Thur 14 Aug	Fri 15 Aug	Sat 16 Aug
Pre-Meeting Field Trips																	
	Noril'sk excursion																
		Kondyor excursion															
		Rai-Iz excursion															
Pre-Meeting Workshop										Processes in magma chambers							
12th IPS												12th IPS					
Oral Presentations											Ice Break 19:00	Session 1 and 2 8:30	Session 3 and 4 9:00	Session 5 and 6 9:00	Session 7 and 8 9:00		
Poster Presentations												Poster Presentations 18:00 – 20:00					
Post-Meeting Field Trips																Post-Meeting Field Trips	
Nizhny Tagi & Volkovsky																Nizhny Tagi & Volkovsky	
Kachkanar & Svetly Bor																Kachkanar & Svetly Bor	
Ioko-Dovyren																**Ioko-Dovyren, 15-29 August**	

SCIENTIFIC PROGRAM

PRE-SYMPOSIUM FIELD TRIP EXCURSIONS

July 31 - August 7, 2014 – Field trip № 1, "Ultramafic-mafic intrusions, volcanic rocks and PGE-Cu-Ni deposits of the Noril'sk Province, Polar Siberia"

August 1-8, 2014 – Field trip № 2, "PGM placer deposits and their sources in the ultramafic and alkaline rocks of the concentrically zoned Kondyor massif, Far East, Russia"

July 31 - August 7, 2014 – Field trip № 3, "The Rai-Iz ophiolite Complex and related chromite deposits, Polar Urals"

August 9-10, 2014

PRE-SYMPOSIUM WORKSHOP

8:00 – 18:00. Processes in magma chambers with implication to genesis of ore deposits

Leaders: Rais Latypov and Steve Barnes

Sunday, August 10, 2014

15:00 – 17:30. Registration. Ural Federal University (Lenin Avenue, 51)

18:00 – Transfer by bus to "Family House" Café. Shuttles begin travelling from the Ural Federal University (Lenin Avenue, 51)

19:00 – 22:00. Ice Break Party in "Family House" Café, (Uktus Ural-Alaskan-type massif)

Monday, August 11, 2014

7:30. Registration

8:30 – 8:45. WELCOMING ADDRESSES:

Valery Charushin, Vice-President of Russian Academy of Sciences (RAS) & Chairman of the Ural Branch of RAS
Victor Koksharov, Rector of the Ural Federal University
Sergey Votyakov, Chairman of the 12th International Platinum Symposium & Director of Institute of Geology and Geochemistry, Ural Branch of RAS

8:45 – 9:30. Introduction lecture: **Anthony J Naldrett.** A KEY QUESTION WITH REGARD TO OUR UNDERSTANDING OF PLATINUM-GROUP ELEMENT DEPOSITS

Session 1. Magma dynamics, cumulates and ore genesis
Conveners: Rais Latypov & Steve Barnes

Session focus. Magmatic ore deposits produced by mafic-ultramafic magmatism (e.g. massive sulphide bodies, chromitite and Fe-Ti oxide layers, platinum-group element-rich horizons) are igneous cumulate rocks that are generated by processes of magma differentiation, crystallization and solidification in crustal chambers. Therefore a key to understanding the origin of these deposits and consequently to developing a better strategy for their exploration is the deep knowledge of physico-chemical processes that govern magma evolution in crustal chambers and conduits. This session will emphasize the physical and fluid dynamic aspects of igneous petrology that bear on three major ore-related questions: where are ore deposits located? how did they get there? and how were they produced? The following fundamental aspects of magmatic processes will be addressed by this session: the relative importance of in situ crystallization versus crystal settling in evolving magma chambers and the origin of layering; the role of thermal and compositional convection in magma differentiation; the effects of compaction and post-cumulus melt migration within the cumulate pile on compositional profiles of magmatic bodies; the interactions between resident melt in the chamber and inflowing magma during chamber replenishment events; and the fluid dynamics and emplacement mechanisms of magmas, crystal slurries and emulsions. This session welcomes field, textural, mineralogical, geochemical, isotopic, experimental and numerical examination of igneous intrusions that provide us with new ideas on how magma chambers and conduits work to produce magmatic ore deposits.

9:30 – 10:00. Keynote talk: **Robertson, J. C.,** Barnes, S. J & Metcalfe, G. CHAOTIC ENTRAINMENT CAN DRIVE SULFIDE REMOBILIZATION AT LOW MAGMA FLOW RATES

Oral presentations:

10:00 – 10:15. Cruden, A., Saumur, B., Robertson, J. & Barnes, S. DYNAMICS OF INTRUSIVE Ni–Cu–PGE DEPOSITS: ENTRAINMENT, ASCENT AND BACKFLOW OF SULFIDE LIQUIDS

10:15 – 10:30. Barnes, Stephen J., Fisher, L.M., Godel, B., Maier, W.D., Ryan. C.G., Paterson, D. & Spiers, K. MICROTEXTURAL ASSOCIATIONS OF PRIMARY MAGMATIC PT PHASES IN Pt-RICH, S-POOR ULTRAMAFIC CUMULATES, AND IMPLICATIONS FOR THE MAGMATIC FRACTIONATION OF Pt FROM Pd

10:30 – 10:45. Lilley, M., Ripley, E., Li, C. THE RELATIONSHIP BETWEEN LITHOLOGY AND PGE-RICH SULFIDE MINERALIZATION OF THE JM-REEF, STILLWATER COMPLEX, MONTANA

10:45 – 11:00. Ayre, A., Ripley, E.M., Li, C. & Underwood, B. MULTIPLE SULFUR ISOPTOPE INVESTIGATION OF THE STILLWATER COMPLEX: PRELIMINARY RESULTS AND IMPLICATIONS FOR PGE MINERALIZATION

11:00 – 11:20. Coffee break

11:20 – 11:35. Ferreira Filho, C.F., Cunha, E.M., Barsotti, T.M., Lima, A.C. & Mansur, E.T. DISTRIBUTION OF PGE THROUGHOUT THE MIRABELA COMPLEX, BRAZIL: CONSTRAINTS FOR THE ORIGIN OF THE Ni-Cu-PGE MINERALIZATION

11:35 – 11:50. **Ariskin, A.A.** & Danyushevsky, L.V. THE SULFIDE COMAGMAT: MODELING R-FACTOR AND Cu-Ni-PGE TENORS IN SULFIDES FOR MULTIPLE-SATURATED MAGMAS

11:50 – 12:05. **Iacono-Marziano, G.**, Gaillard, F., & Arndt, N.T. THE EFFECT OF MAGMA-SEDIMENT INTERACTIONS ON THE REDOX STATE AND VOLATILE CONTENT OF THE MAGMA AND THEIR IMPLICATIONS FOR ORE GENESIS

12:05 – 12:20. Roelofse, F., Romer, R. & Ashwal, L.D. ISOTOPICALLY HETEROGENOUS PLAGIOCLASE POPULATIONS IN THE MAIN ZONE OF THE BUSHVELD COMPLEX SUGGEST THE INTRUSION OF CRUSTALLY CONTAMINATED CRYSTAL MUSHES

12:20 – 12:35. Latypov, R., Chistyakova, S. & Page, A.S. GEOLOGICAL CONSTRAINTS ON THE ORIGIN OF THE MERENSKY REEF, BUSHVELD COMPLEX

12:35 – 12:50. Veksler, I.V., Reid, D.L. Keiding, J., Schannor, M., Hecht, L., & Trumbull, R.B. INTERCUMULUS CRYSTALLIZATION AND CHEMICAL DIFFUSION IN THE UPPER CRITICAL ZONE OF THE BUSHVELD IGNEOUS COMPLEX, SOUTH AFRICA

13:00 – 14:00. Lunch, Ural Federal University

14:00 – 14:15. Forien, M., Tremblay, J., Barnes, S.-J. & Pagé, P. SLUMPING SLURRIES AND KINETIC SIEVING: AN EXPERIMENTAL STUDY ON THE CHROMITE CUMULATE FORMATION

14:15 – 14:30. Lesher, C.M., Carson, H.J.E., Metsaranta, R.T. & Houlé, M.G. GENESIS OF CHROMITE DEPOSITS BY PARTIAL MELTING, PHYSICAL TRANSPORT, AND DYNAMIC UPGRADING OF SILICATE-MAGNETITE FACIES IRON FORMATION

Session 2. PGE mineralization in mafic-ultramafic intrusions of Russia: geology and petrogenesis

Conveners: Alexey Ariskin & Wolfgang Maier

The session will focus on PGE mineralized mafic to ultramafic intrusive complexes of Russia. We invite presentations that provide information on their geology, petrology, mineralogy, and geochemistry and that help to constrain the petrogenesis of the intrusions and their different styles of PGE mineralization. Contributions dealing with sulfide and chromite transport in the parental magmas, and percolation of sulfides and volatiles through the cumulate pile are particularly welcome, as are talks and posters that have implications for exploration targeting, using a variety of techniques and vectors.

14:30 – 15:00. Keynote talk: **Izokh, A.** PGE MINERALIZATION HOSTED BY MAFIC-ULTRAMAFIC INTRUSIONS OF RUSSIA: GEOLOGY AND PETROGENESIS

Oral presentations:

15:00 – 15:15. Kazanov, O. MAGMATIC STRATIGRAPHY CONTROL ON PGM MINERALIZATION OF THE EAST PANA LAYERED MASSIF

15:15 – 15:30. **Pripachkin, P.**, Rundkvist, T., Miroshnikova, Ya. & Chernyavsky, A. GEOLOGICAL STRUCTURE AND PGE MINERALIZATION OF THE SOUTH SOPCHINSKY MASSIF (MONCHEGORSK AREA, KOLA PENINSULA, RUSSIA).

15:30 – 15:45. Kislov, E.V. IOKO-DOVYREN INTRUSION, NORTHERN TRANSBAIKALIA, RUSSIA: SULPHIDE Ni-Cu-PGE AND LOW SULPHIDE PGE MINERALIZATION.

15:45 – 16:05. Coffee break

16:05 – 16:20. Ariskin, A.A., Danyushevsky, L.V. Nikolaev, G.S. & Kislov, E.V. GEOCHEMICAL EVOLUTION AND MODELING OF Cu-Ni-PGE TENORS IN DISSEMINATED SULFIDES FROM THE YOKO-DOVYREN MASSIF, RUSSIA

16:20 – 16:50. Keynote talk: **Barnes, S-J.,** Pagé, P., Prichard, H.M., Zientek, M. & Fischer, P.C. Processes leading to concentration of platinum-group elements in chromite rich rocks

Oral presentations:

16:50 – 17:05. Mekhonoshin, A. S., Pavlova, L. A., & Kolotilina, T. B. PLATINUM GROUP ELEMENTS IN CHROMITITES OF THE KONDYOR MASSIF: GEOCHEMISTRY AND MINERALOGY.

17:05 – 17:20. Kozlov, A.P., Timofeev, A.C. & Korneychik, O.E. STUDY OF THE PGM MINERALIZATION IN ZONED MAFIC-ULTRAMAFIC MASSIFS IN RUSSIA BY AUTOMATED MINERALOGY

17:20 – 17:35. Yang, S.H., Hanski, E. , Li, C., **Maier, W.D.**, Huhma, H., Mokrushin, A.V., & Qu, W.J. MANTLE SOURCE OF 2.4-2.5 GA PLUME MAGMATISM IN THE FENNOSCANDIAN SHIELD: EVIDENCE FROM OS ISOTOPE COMPOSITION OF CHROMITE

17:35 – 17:50. Orsoev, D.A., Mekhonoshin, A.S. & Kanakin, S.V. PGE-Cu-Ni SULPHIDE MINERALIZATION IN THE ULTRABASITE OF THE ZHELOS AND TOKTY-OY MASSIFS (THE EAST SAYAN).

17:50 – 18:05. Vishnevskiy, A.V., Izokh, A.E. & Polyakov, G.V. MINOR ULTRAMAFIC-MAFIC INTRUSIONS OF WESTERN TUVA: POSSIBILITY TO DISCOVERY PGE-Ni-Cu ORES.

18:10 – 20:00. POSTER PRESENTATIONS & BUFFET

Tuesday, August 12, 2014

9:00 – JOINT PHOTO OF THE SYMPOSIUM DELEGATES. SQUARE IS IN FRONT OF THE CENTRAL BUILDING OF THE URAL FEDERAL UNIVERSITY (Lenin Avenue, 51).

Session 3. PGE-Cu-Ni sulphide-bearing ultramafic-mafic intrusions of the Noril'sk Province: insights into ore genesis and exploration

Conveners: Kreshimir Malitch & Chusi Li

Despite the long-term study of the 'Noril'sk-type' intrusions (e.g., Noril`sk-1, Talnakh and Kharaelakh), they remain a subject of ongoing debate related to their origin. A broad range of different or contradictory ideas for the formation of ore-bearing ultramafic-mafic intrusions in the Noril'sk region has been proposed. These include (a) differentiation of a single magma, (b) emplacement of multiple magmas with distinct compositions, (c) volcanic feeder systems, (d) a crust-mantle interaction model, (e) assimilation and (f) metasomatic models. A common assumption in these models is that the intrusions are coeval with the 250 Ma Siberian flood basalts, which erupted over a period of ~1 Ma or less, despite the fact that the age range of the intrusions is considerably larger. We invite contributions that use mineralogy, petrology, geochemistry, geochronology and structural controls to improve our understanding on the origin of ultramaficmafic intrusions with different degrees of PGE-Cu-Ni sulphide mineralisation (i.e., economic, subeconomic and non-economic) in the Polar Siberia. New isotope-geochemical data that can be used for the exploration of PGE-Cu-Ni sulphide deposits are particularly welcome.

9:30 – 9:45. Latypov, R. IN MEMORIAM OF FELIX MITROFANOV

9:45 – 10:15. Keynote talk: **Krivolutskaya, N.** Pt-Cu-Ni NORIL'SK DEPOSITS: GEOLOGY AND ORIGIN

Oral presentations:

10:15 – 10:30. Malitch, K.N., Badanina, I.Yu., Belousova, E.A., Griffin, W.L., Latypov, R.M., Romanov, A.P. & Sluzhenikin, S.F. Nd-Sr-Hf-S-Cu ISOTOPE SYSTEMATICS OF ORE-BEARING ULTRAMAFIC-MAFIC INTRUSIONS FROM POLAR SIBERIA (RUSSIA): GENETIC CONSTRAINTS AND IMPLICATIONS FOR EXPLORATION

10:30 – 10:45. Jugo, P.J. REFINEMENT OF THE MODEL FOR SULFUR CONTENT AT SULFIDE SATURATION (SCSS) IN BASALTS AS FUNCTION OF OXYGEN FUGACITY (fO_2)

10:45 – 11:20. Information. Coffee break

Session 4. Models and exploration methods for magmatic Ni-Cu-PGE sulphide and PGE-oxide deposits from around the World

Conveners: Sarah-Jane Barnes, Marina Yudovskaya & Judith Kinnaird

The session is intended to cover how magmatic platinum-group element (PGE) deposits form and how to use this information to explore for them. The concentrations of PGE in ore are generally only at the g/tonne level and thus the fact that the rocks are enriched in PGE is not evident in hand specimen. Furthermore most PGE are not readily soluble and thus there is no halo around ore bodies. Therefore exploration for PGE deposits depends heavily on a combination of lithogeochemical sampling and searching for minerals such as Ni-Cu sulphides and oxides (in particular chromite) that are present in many PGE deposits. Consequently how Ni-Cu sulphide and oxide deposits form and why some contain platinum-group elements and some do not is also of interest in studying how PGE deposits. Papers describing models for the formation of and exploration techniques for the deposits are welcome.

11:20 – 11:50. Keynote talk: **Sobolev, A.** ACCESSING TEMPERATURE AND MANTLE SOURCE LITHOLOGY OF THE ORE FORMING MAGMAS

Oral presentations:

11:50 – 12:05. Kamenetsky, V.S., Maas, R., Zhitova, L.M., Fonseca, R.O.C., Charlier, B., Sharygin, V.V. & Ballhaus, C. LIQUID IMMISCIBILITY IN MAFIC MELTS DERIVED FROM THE CONTINENTAL LITHOSPHERE: A CLUE TO THE ORIGIN OF ORE DEPOSITS

12:05 – 12:20. Song, X.-Y., Chen, L.-M., Yu, S.-Y., She, Y.-W. & Luan, Y. IS CRUSTAL CONTAMINATION CRUCIAL FOR SULFIDE IMMISCIBILITY? IMPLICATIONS FROM PGE-DEPLETION OF THE LAYERED INTRUSIONS IN THE EMEISHAN LARGE IGNEOUS PROVINCE, SW CHINA

12:20 – 12:35. Page, P. & Barnes, S-J. CONTRASTING OSMIUM, IRIDIUM, RUTHENIUM AND RHODIUM BEHHAVIOR IN CHROMITE FROM VOLCANIC AND PLUTONIC ROCKS AND THE ORIGIN OF LAURITE IN CHROMITE

12:35 – 12:50. Prichard, H.M., Barnes, S-J., Fisher, P.C., Pagé, P. & Zientek, M. PGM IN THE STILLWATER CHROMITITES AND IMPLICATIONS FOR THE MAGMATIC PROCESSES THAT FORMED THE ULTRAMAFIC PART OF THE STILLWATER COMPLEX

13:00 – 14:00. Lunch. Ural Federal University

14:00 – 14:15. Yudovskaya, M.A., Naldrett, A.J., Woolfe, J.A.S. & Kinnaird J.A. FORMATION OF NKOMATI MASSIVE CHROMITITE BODY VIA CRYSTALLIZATION WITHIN A MAGMATIC CONDUIT

14:15 – 14:30. Kinnaird, J.A., Yudovskaya, M. & Botha, M.J. THE WATERBERG EXTENSION TO THE BUSHVELD COMPLEX

14:30 – 15:00. Keynote talk: **Ripley, E.** MAGMATIC NI-CU-PGE DEPOSITS IN SMALL INTRUSIONS: PROCESSES AND FUTURE RESEARCH DIRECTIONS

Oral presentations:

15:00 – 15:15. Sproule, R., Giovenazzo, D. & Simmonds, J. Ni-Cu-PGE TARGETING USING LITHOGEOCHEMISTRY

15:15 – 15:30. Taranovic, V., Ripley, E.M., Li, C. & Rossell, D. PGE GEOCHEMISTRY AND METALLOGENESIS OF THE NEWLY-DISCOVERED TAMARACK MAGMATIC Ni-Cu(PGE) DEPOSIT, MINNESOTA, USA

15:30 – 15:50. Coffee break

15:50 – 16:05. Maier, W.D., Smithies, R.H., Howard, H.M., Yang, S. & Barnes, S-J. MAFICULTRAMAFIC INTRUSIONS OF THE GILES EVENT, WESTERN AUSTRALIA: PETROGENESIS AND PROSPECTIVITY FOR MAGMATIC ORE DEPOSITS

16:05 – 16:20. Zeng, N., Luo, X., Wang, J., & Wen, M. STRUCTURE SEQUENCE AND THE RELATIONSHIP WITH Cu-Ni SULFIDE ORE DEPOSIT IN THE JINCHUAN AREA, GANSU, CHINA

16:20 – 17:00. DISCUSSION, FUTURE PLANS AND SUGGESTIONS

17:00 – 20:00. POSTER PRESENTATIONS & BUFFET

Wednesday, August 13, 2014

Session 5. Ophiolites and Ural-Alaskan-type intrusions: traditional and innovative looks on the PGM formation

Conveners: Evgeny Pushkarev & Edward Ripley

The session will focus on the PGE enrichment and platinum-group minerals formation in chromitites and ultramafites of ophiolite complexes and Ural-Alaskan-type intrusions. Potential topics include: 1) Chromite and PGM formation in ophiolite and Ural-Alaskan intrusions – why do the huge chromite deposits in ophiolites contain relatively low concentrations of PGEs relative to the Pt-rich chromitites from Ural-Alaskan intrusions. 2) Geological, mineralogical, geochemical and experimental studies on the association between chromite and PGMs. 3) The role of high- and low-temperature fluids in the formation and distribution of PGEs in chromitites and ultramafic rocks. 4) The genesis of unusual sulfide-rich PGE mineralization in Ural-Alaskan intrusions. 5) PGMs are from source to placer - only accumulation or transformation? The unique PGMs placers of the World.

9:00 – 09:30. Keynote talk: **Pushkarev, E.**, Anikina, E. & Kamenetsky, V. NON-MAGMATIC ORIGIN OF PGM-RICH CHROMITITES IN THE URAL-ALASKAN-TYPE INTRUSIONS: MINERALOGICAL AND STRUCTURAL EVIDENCES

Oral presentations:

9:30 – 9:45. Puchkov, V., Petrov, G. & Ronkin, Yu. GEODYNAMIC CONDITIONS OF ORIGIN OF THE PLATINUM−BEARING BELT OF THE URALS

9:45 – 10:00. Keays, R.R. & Prichard, H.M. PRIMARY PLATINUM MINERALIZATION IN THE OWENDALE INTRUSION: NEW INSIGHTS INTO TO THE GENESIS OF PLATINUM MINERALIZATION IN URAL-ALASKAN INTRUSIONS

10:00 – 10:15. Griffin, W.L., McGowan, N.M., Gonzalez-Jimenez, J.M., Belousova, E.A., Howell, D., Afonso, J.C., Yang, J.-S., Shi, R., O'Reilly, S.Y. & Pearson, N.J. TRANSITION-ZONE MINERAL ASSEMBLAGES IN "OPHIOLITIC" CHROMITITES: IMPLICATIONS FOR COLLISION-ZONE DYNAMICS AND OROGENIC PERIDOTITES

10:15 – 10:30. Thakurta, J. ORIGIN OF URAL-ALASKAN TYPE COMPLEXES BY PERIODIC ASCENTS OF MAGMATIC PULSES FROM THE MANTLE SOURCE

10:30 – 10:45. Pushkarev, E., Kamenetsky, V., Gottman, I. & Yaxley, G. THE PGM-BEARING VOLCANIC ANKARAMITE (URALS, RUSSIA): BRIDGING ANKARAMITE PARENTAL MAGMAS AND THE URAL-ALASKAN-TYPE INTRUSIONS

10:45 – 11:00. **Belousova, E.**, Gonzáles-Jiménez, J.M., Graham, I., Griffin, W.L., O'Reilly, S. & Pearson, N. CRUST-MANTLE INTERACTION IN THE TUMUT REGION OF THE LACHLAN FOLD BELT, SOUTHEASTERN AUSTRALIA: A SYNTHESIS OF NEW ISOTOPIC INFORMATION (Re-Os, U-Pb, Lu-Hf and O).

11:00 – 11:20. Coffee break

11:20 – 11:35. Stifter, E.C., **Ripley, E.M.** & Li, C. Re-Os ISOTOPE STUDIES OF THE DUKE ISLAND ULTRAMAFIC COMPLEX, SOUTHEASTERN ALASKA

11:35 – 11:50. Shukolyukov, Yu.A., **Yakubovich, O.V.** & Mochalov, A.G. DATING PLATINUM MINERALIZATION BY THE NOVEL ^{190}Pt-^{4}He METHOD OF ISOTOPE GEOCHRONOLOGY

11:50 – 12:05. Tessalina, S. & Augé, T. PLATINUM ENRICHMENT IN ALASKAN TYPE INTRUSIONS AS A RESULT OF METALS RECYCLING IN SUBDUCTION ZONES AND Pt AFFINITY FOR Pt-Fe ALLOYS

12:05 – 12:20. Prichard, H.M., Suárez, S., Fisher, P.C., Knight, R. & Watson, J.S. PLACER PGM IN THE SHETLAND OPHIOLITE COMPLEX DERIVED FROM THE ANOMALOUSLY ENRICHED CLIFF PODIFORM CHROMITITE

12:20 – 12:35. Lay, A., Graham, I., Cohen, D., Gonzáles-Jiménez, J.M., Privat, K., Belousova, E. & Barnes, S-J. PLATINUM GROUP MINERALS IN OPHIOLITIC CHROMITITES OF TIMOR LESTE

12:35 – 12:50. Martin, R.F. & Lupulescu, M.V. THE FINAL SILICATE MAGMA APPROACHES AN "AMPHIBOLIC" COMPOSITION IN THE AMPHIBOLE-RICH PERIDOTITES OF THE BUTYRIN VEIN, KYTLYM MASSIF (URALS) AND THE HUDSON HIGHLANDS (NEW YORK)

12:50 – 13:05. Nazimova, Yu. & Ryan, G. CURRENT PLATINUM POTENTIAL OF URAL-ALASKAN INTRUSIONS AND THEIR RESULTANT PLACERS

13:05 – 14:20. Lunch. Ural Federal University

Session 6. PGE and Au through experiments
Conveners: Alexander Borisov & Anna Vymazalova

The session will focus on experimental studies of PGE and Au solubility in sulphides and silicate melts, PGE and Au partitioning between phases as well as PGE minerals stability and composition at T-P range from magmatic to hydrothermal conditions. Also contributions focused of phase equilibria in PGE-Au systems, and thermodynamic properties of PGE minerals and phases are welcomed.

14:20 – 14:50. Keynote talk: **Ballhaus C.,** Helmy, H.M., Fonseca, R.O.C, Laurenz, V. & Tredoux, M. METALLIGAND ASSOCIATIONS OF THE PGE IN MAGMATIC LIQUIDS

14:50 – 15:20. Keynote talk: **Tagirov, B. R.** EXPERIMENTAL MODELING OF Ag, Au, Pd, AND Pt BEHAVIOR IN HYDROTHERMAL SYSTEMS

Oral presentations:

15:20 – 15:35. Borisov, A.A. NOBLE METALS IN EXPERIMENTAL COSMOCHEMISTRY

15:35 – 16:00. Coffee break

16:00 – 16:15. Cafagna, F. & Jugo, P. J. EXPERIMENTAL STUDY ON THE SOLUBILITY OF Te, Bi AND As IN SULFIDES AND THE EXSOLUTION OF DISTINCT METALLOID PHASES

16:15 – 16:30. Distler, V.V., Kosyakov, V.I. & Sinyakova, E.F. BEHAVIOR OF PLATINUM METALS AT CRYSTALLIZATION OF Cu-RICH SULFIDE MELT: NATURE AND EXPERIMENTS

16:30 – 16:45. Vymazalová, A., Laufek, F., Chareev, D.A., Kristavchuk, A.V. & Drábek, M. EXPERIMETAL STUDY OF SILVER-PALLADIUM SULPHIDES

19:00 – 23:00. BANQUET DINNER IN "WINTER GARDEN" RESTOURANT (Dzerzhinskogo, 2)

Thursday, August 14, 2014.

Session 7. New advances in the understanding of PGE mineralogy from magmatic to supergene environments

Conveners: Tanya Evstigneeva & Federica Zaccarini

The platinum group elements (PGE) form specific phases, the so called platinum group minerals (PGM) or they occur in solid solution, as trace and ultra-trace elements, mainly in sulfide and oxides. With few exceptions, the PGM form minute inclusions, generally less than 50 microns in size. Thus, their identification and characterization is a difficult target. It is also not easy to determine the amount of PGE occurring in solid solution because of their low concentration. Recently, the development of advanced methodology and scientific methods allow us to better characterize the PGM as well as to detect the PGE at very low concentration at the scale of ppm or ppb using in-situ techniques. Contributions that describe the latest in analytical methods and applications to PGE mineralogical study, including LA-ICPMS, PIXE, XRD, EPMA, SEM are welcome. Abstracts discussing other techniques are also strongly encouraged.

9:00 – 9:30. Keynote talk: **Oberthuer, T.** Melcher, F., Locmelis, M., Weiser, T.W. & Junge, M. PLATINUM MINERALIZATION OF THE GREAT DYKE, ZIMBABWE, AND THE BUSHVELD COMPLEX, SOUTH AFRICA – THE FATE OF PGM FROM SULFIDE ORES VIA THE WEATHERING CYCLE (OXIDIZED ORES) INTO PLACERS.

Oral presentations:

9:30 – 9:45. Piña, R., Barnes, S-J., Gervilla, F., Ortega, L. & Lunar, R. THE ROLE OF PYRITE AS CARRIER OF PLATINUM-GROUP ELEMENTS IN MAGMATIC SULFIDE DEPOSITS

9:45 – 10:00. Korges, M.; Oberthür, T. & Borg, G. Re-DISTRIBUTION OF PLATINUM-GROUP ELEMENTS DURING OXIDATION OF THE MERENSKY REEF, EASTERN BUSHVELD COMPLEX, SOUTH AFRICA

10:00 – 10:15. Junge, M., Oberthür, T., Melcher, F. & Mohwinkel, D. PLATINUM-GROUP ELEMENT DISTRIBUTION FROM PRISTINE TO NEAR-SURFACE OXIDIZED ORE IN THE PLATREEF, BUSHVELD COMPLEX

10:15 – 10:30. Duran, C.J., **Barnes, S-J.** & Corkery, J.T. SULFIDE-RICH PODS FROM THE LAC-DESILES Pd-ORE DEPOSITS, WESTERN ONTARIO, CANADA: PART 2. THE ORIGIN OF PLATINUM-GROUP ELEMENTS-BEARING PYRITES

10:30 – 10:45. Kojonen, K., Tarkian, M., Heidrich, S. & Johanson, B. PLACER PGM FROM SOTAJOKI RIVER, IVALO, NORTHERN FINLAND

10:45 – 11:00. Adibpour, M., **Jugo, P.J.** & Ames, D.E. TRACE ELEMENT DISTRIBUTION IN PYRITE FROM THE LEVACK MINE (SUDBURY, CANADA): INSIGHT INTO THE PROCESSES AFFECTING PGE

11:00 – 11:20. Coffee break

11:20 – 11:35. Nesterenko, G., **Zhmodik, S.**, Belyanin, D., Podlipsky, M., Kolpakov V. & Zhmodik, A. PLATINUM-GROUP MINERALS (PGM) FROM PLACERS – INDICATORS OF BEDROCK MINERALIZATION: MORPHOLOGY, TEXTURE (STRUCTURE), TYPES OF INCLUSIONS, COMPOSITION (A CASE STUDY IN SOUTH SIBERIA)

11:35 – 11:50. Talovina, I., Lazarenkov, V. & Vorontsova, N. PGE, Au AND Ag IN SUPERGENE NICKEL DEPOSITS ON OPHIOLITIC COMPLEXES IN URALS

Session 8. Open Session

Conveners: Elena Anikina & Frank Melcher

This session intends to highlight various aspects of PGE research in geological environments that are not covered by topics of the other sessions. The session also welcomes contributions with focus on PGE and PGM related to osmium isotopes, analytical methods, mineral processing, including quality and process control, hydrometallurgical processing, refining and product developments.

11:50 – 12:20. Keynote talk: **Malitch, K.N.** & Merkle, R.K.W. WITWATERSRAND PLATINUM-GROUP MINERALS AS A KEY TO UNRAVELLING MANTLE PROCESSES OF THE YOUNG EARTH

12:20 – 12:35. Badanina, I.Yu., **Malitch, K.N.**, Lord, R.A., Belousova, E.A., Griffin W.L., Meisel, T.C., Murzin, V.V., Pearson, N.J. & O'Reilly, S.Y. MINERAL CHEMISTRY AND ISOTOPIC COMPOSITION OF OPHIOLITIC Os-RICH ALLOYS AND Ru-Os SULFIDES: SYNTHESIS OF NEW DATA

12:35 – 12:50. Tessalina, S. HSE DISTRIBUTION AND Os ISOTOPE SYSTEMATICS IN HYDROTHERMAL DEPOSITS

13:00 – 14:00. Lunch. Ural Federal University

Oral presentations:

14:00 – 14:15. Campbell, I.H., Park, J.-W., Cocker, H. & Lowczak, J. PLATINUM GROUP ELEMENT GEOCHEMISTRY IN GRANITOIDS AS A FERTILITY INDICATOR FOR GOLD AND COPPER MINERALIZATION

14:15 – 14:30. Park, J.-W., Campbell, I., Kim, J. & Arculus, R. EARLY PLATINUM ALLOY CRYSTALLISATION AND LATE SULFIDE SATURATION IN ARC-RELATED SUBMARINE LAVAS ASSOCIATED WITH MODERN VMS DEPOSIT

14:30 – 14:45. Ruan, B. & Lu, X. MANTLE PARTIAL MELTING, SULFIDE SEGREGATION AND METALLOGENIC POTENTIAL IN THE HONGSHISHAN MAFIC-ULTRAMAFIC COMPLEX, XINJIANG, NORTHWEST CHINA – IMPLICATION FROM PGE GEOCHEMISTRY

14:45 – 15:00. Najafzadeh, A.R. & Ahmadipour, H. PLATINUM-GROUP ELEMENTS (PGE) AND CHROMIAN SPINEL GEOCHEMISTRY IN THE CHROMITITES FROM THE ABDASHT ULTRAMAFIC COMPLEX, KERMAN, SOUTHEASTERN IRAN

15:00 – 15:15. Vikentyev, I.V., Abramova, V.D., Moloshag, V.P. & Su Shangguo. PGE IN MINERALS OF VOLCANOGENIC MASSIVE SULFIDE DEPOSITS OF THE URALS: ORE GEOCHEMISTRY AND FIRST LA-ICP-MS DATA

15:15 – 15:30. Chaplygin, I.V., Meisel, T. & Bychkova, Y.V. NOBLE METALS IN HIGHTEMPERATURE VOLCANIC GASES (KAMCHATKA AND KURILES, RUSSIA)

15:30 – 15:50. Coffee break

15:50 – 16:05. Spiridonov, E.M., Mashkina, A.A. & Zhukov, N.N. NORIL'SK ORE FIELD: EPIGENETIC METAMORPHOGENIC-HYDROTHERMAL Sn-Pt-Pd-Ag MINERALIZATION

16:05 – 16:20. Yang, J.S., Zhang, X.X., Xu, X.Z., Zhang, Z.M., Huang Z., Robinson, P.T., Dilek, Y. & Griffin, W.L. DIAMONDS AND HIGHLY REDUCED MINERALS IN OPHIOLITIC MANTLE ROCKS AND CHROMITITES

18:10 – 20:00. August 11, 2014. Poster presentations & Buffet
17:00 – 20:00. August 12, 2014. Poster presentations & Buffet

Conference Hall of the Ural Federal University (Following numbers of poster presentations correspond to the poster board numbers)

Poster format. Posters should not exceed the dimensions of the poster board: 170 cm x 120 cm (double vertical A0). The poster boards will be available in 'landscape' format (longest dimension is horizontal)

Posters of the 1st Session "Magma dynamics, cumulates and ore genesis"

1. **Chistyakova, S.**, Latypov, R. & Zaccarini, F. CHEMICAL ZONATION IN CHROMITITE VEINS OF THE SOPCHEOZERO DEPOSIT, MONCHEGORSK LAYERED INTRUSION, KOLA PENINSULA, RUSSIA
2. **Hanemann, R.**, Abratis, M. & Viereck, L. COMPOSITION OF FE-TI-OXIDES FROM THE JURASSIC DUFEK LAYERED MAFIC INTRUSION, ANTARCTICA: FIRST RESULTS OF MICROPROBE ANALYSIS
3. **Harlou, R.**, Bernstein, S., Pedersen, A.K. & Larsen, L.M. THE ORIGIN OF IMMISCIBLE SULPHIDE INCLUSIONS IN THE CONTAMINATED AND Ni-Cu DEPLETED LAVAS FROM DISKO AND NUUSSUAQ (WEST GREENLAND)
4. **Mota-e-Silva, J.**, Prichard, H.M., Ferreira Filho, C.F., Suárez, S.4, McDonald, I. & Fisher, P.C. THE HISTORY OF A MERENSKYITE AFFECTED BY HIGH GRADE METAMORPHISM, HYDROTHERMALISM AND WEATHERING
5. **Magson, J.**, Tredoux, M., & Roelofse, F. PLATINUM-GROUP ELEMENTS WITHIN THE MERENSKY REEF, WESTERN LIMB, BUSHVELD COMPLEX: RESULTS OF A HIGH RESOLUTION MINERALOGICAL AND GEOCHEMICAL STUDY
6. **Nikolaev, G.S.**, Ariskin, A.A. & Barmina, G.S. MODELING SPINEL – MELT EQUILIBRIA UP TO 15 KBAR: SPINMELT-2 PROGRAM AND ITS PETROLOGICAL APPLICATIONS
7. **Okrugin, A.V.** A CYCLIC DIFFUSION-ACCUMULATION MODEL OF RHYTHMIC LAYERING IN BASIC MAGMA
8. **Yuan, Q.**, Lu, X., Cao, X., Wang, X., Yang, E., Wang, Y. &, Liu, W. EXSOLUTION GENESIS AND IMPLICATION RESEARCH OF TI-FE-AL METALLIC OXIDE IN GIANT MAGNETITE OF QIEGANBULAKE COMPLEX, XINJIANG PROVINCE

Posters of the 2d Session "PGE mineralization in mafic-ultramafic intrusions of Russia: geology and petrogenesis"

9. Bekker, A. , **Grokhovskaya, T.L.**, Hiebert, R.S., Sharkov, E.V., Stadnek, K.R. & Wing, B. A. INSIGHT INTO THE GENESIS OF PGE-Ni-Cu MAGMATIC SULFIDE DEPOSITS OF THE

MONCHEGORSK IGNEOUS COMPLEX: EVIDENCE FROM MASSINDEPENDENT SULFUR ISOTOPE FRACTIONATION

10. **Borozdin, A. P.**, Petrov, S. V., Polekhovsky, Yu. S., Tarasova, I. P., Bulavin, A. V., Oleynik, I. L. & Bederova, L. L. THE MINERAL ASSEMBLAGE OF Au-PGE-Cu-V-Ti-Fe ORES IN VIKSHOZERO ORE OCCURENCE (KOYKAR SILL, SOUTH KARELIA, RUSSIA)
11. **Gongalskiy, B.** PGE-Cu-Ni DEPOSITS IN THE NORTHERN TRANSBAIKALIA (SIBERIA, RUSSIA)
12. **Groshev, N.Yu.**, Rundkvist, T.V., Korchagin, A.U. & Ivanov, A.N. CONCENTRATIONS OF TRACE ELEMENTS IN ROCKS OF THE LOWER LAYERED HORIZON OF THE WEST-PANA INTRUSION
13. **Iblaminov, R.**, Kazymov, K. & Sedunova, A. INVESTIGATION OF PLATINUM GROUP ELEMENTS OF THE SARANOVSKY CHROMITE DEPOSIT
14. **Kolotilina, T.B.**, Mekhonoshin, A.S. & Men'shikov, V.I. DISTRIBUTION OF THE PLATINUM GROUP ELEMENTS OF SULFIDE ORES FROM ULTRAMAFIC MASSIFS OF THE ALKHADYR TERRAIN (SOUTHERN SIBERIA, RUSSIA)
15. Parkhachev, A.A., **Golubeva, I.** & Shevchuk, S. S. COPPER-NOBLE METAL MINERALIZATION OF SHCHEKURINSKY ULTRAMAFIC MASSIF (NORTHERN URALS)
16. **Sushkin, L.B.** ON THE HISTORY OF THE 20-th CENTURY DISCOVERY OF THE LARGEST PLATINUM NUGGETS IN THE WORLD
17. Zil'bershtein, Kh., Semenov, V.S., **Semenov, S.V.**, Goncharov, A.G., Glebovitsky, V.A. & Dech, V.N. THE EFFECT OF THE INTRUSION OF A NEW BATCH OF MELT IN THE REDISTRIBUTION OF CHEMICAL COMPONENTS

Posters of the 3^{d} Session "PGE-Cu-Ni sulphide-bearing ultramafic-mafic intrusions of the Noril'sk Province: insights into ore genesis and exploration"

18. **Mashkina, A.A.** & Spiridonov, E.M. THREE TYPES OF APATITE FROM THE NORIL'SK SULFIDE ORES
19. Mitrofanov, F.P., Bayanova, T.B., **Zhirov, D.V**., Serov P.A. & Golubev, A. GEOLOGICAL AND ISOTOPE-GEOCHEMICAL CHARACTERISTICS OF PREDICTION AND SEARCH METHOD FOR THE PGE-BEARING MAFIC-ULTRAMAFIC LAYERED INTRUSIONS OF THE EAST-SCANDINAVIAN LIP
20. **Sluzhenikin, S.F.** & Grigor'eva, A.V. PGE DISTRIBUTION AND MODES OF OCCURRENCE IN VEINLET-DISSEMINATED AND BRECCIA-LIKE ORES IN CONTACT-METAMORPHIC AND METASOMATIC ROCKS IN THE NORIL'SK REGION
21. **Spiridonov, E.M.**, Kulagov, E.A., Belyakov, S.N., Sereda, E.V. & Tushentsova, I.N. NORIL'SK ORE FIELD: EUTECTIC PbSss–Iss SULFIDE VEINS WITH UNUSUAL PGE ABUNDANCES AND PGM ASSEMBLAGES

Posters of the 4th Session "Models and exploration methods for magmatic Ni-Cu-PGE sulphide and PGE-oxide deposits from around the World"

22. **Chen, L.-M.**, Song, X.-Y., Danyushevsky, L.-V. & Yu, S.-Y. PLATINUM-GROUP AND CHALCOPHILE ELEMENTS GEOCHEMISTRY IN SULFIDES OF THE JINCHUAN NI-CU SULFIDE DEPOSIT, NW CHINA
23. **Duran, C.J.**, Barnes, S-J. & Corkery, J.T. SULFIDE-RICH PODS FROM THE LAC-DESILES PD-ORE DEPOSITS, WESTERN ONTARIO, CANADA: PART 1. A GENETIC MODEL
24. **Le Vaillant, M.**, Saleem, A., Barnes, S.J., Fiorentini, M.L. & Miller, J. HYDROTHERMAL REMOBILIZATION AROUND A DEFORMED AND REMOBILIZED KOMATIITE HOSTED Ni-Cu-(PGE) DEPOSIT, SARAH'S FIND, AGNEW WILUNA GREENSTONE BELT, WESTERN AUSTRALIA
25. **Luo, X.**, Zeng, N. & Wen, M. HYDROTHERMAL ALTERATION AND CHARACTERISTICS OF MINERALIZATION AT THE JINBAOSHAN Pt-Pd DEPOSIT, YUNAN, CHINA
26. Mao, Y-J., Qin, K-Z., Ripley, E.M. & Tang, D-M. OLIVINE GEOCHEMISTRY, PGE GEOCHEMISTRY AND S ISOTOPES OF THE PERMIAN HUANGSHANNAN Ni-RICH SULFIDE DEPOSIT: IMPLICATIONS FOR ORE GENESIS IN THE HUANGSHAN Ni-Cu ORE FIELD

27. **Sunder Raju, P.V.,** Merkle, R.K.W. ENRICHMENT OF IPGE'S IN CHROMITITE OF THE NUGGIHALLI SCHIST BELT, WESTERN DHARWAR CRATON, INDIA

Posters of the 5th Session "Ophiolites and Ural-Alaskan-type intrusions: traditional and innovative looks on the PGM formation"

28. **Badanina, I.Yu.**, Malitch, K.N., Belousova, E.A. & Khiller, V.V. INSIGHTS INTO ORE GENESIS OF ZONED URALIAN-TYPE MASSIFS USING OSMIUM ISOTOPES: EVIDENCE FROM LAURITE AND Os-RICH ALLOYS FROM THE NIZHNY TAGIL MASSIF, MIDDLE URALS, RUSSIA
29. Chashchukhin, I.S., Votyakov, S.L. & **Pushkarev, E.V.** REDOX STATE OF DUNITE-CLINOPYROXENITE COMPLEXES OF THE URAL-ALASKAN TYPE
30. **Graham, I.**, Grieve, T., Spencer, L. & Hager, S. SOURCE OF PGM AND GOLD FROM THE CEMPAKA PALAEOPLACER DEPOSIT, SE KALIMANTAN, INDONESIA
31. Lazarenkov, V.G., Pilugin, A.G., Stepanov, S.Yu. & **Gayfutdinova, A.M.** DISTRIBUTION OF PLATINUM-GROUP ELEMENTS, GOLD AND SILVER IN THE CHROMITES OF THE NIZHNY TAGIL MASSIF, PLATINUM BELT OF THE URALS
32. **Li, Y.,** Yang, J.S., Xu, X.Z., Liu, Z. & Jia Y. STRUCTURE AND MINERALOGY OF PERIDOTITE FROM BAER OPHIOLITE, YALUNG ZANGBO SUTURE ZONE, TIBET: RECORDS OF TWO STAGE EVOLUTION FROM MID-OCEAN RIDGE TO SSZ
33. **Liu, F.,** Yang, J.S., Dilek, Y., Robinson, P.T., Zhang, X.X., Lian D.Y., Xu, X.Z., Xiong, F. & Zhou, W.D. A POSSIBLE CONTINENTAL MARGIN-TYPE OPHIOLITE IN THE WESTERN YARLUNG ZANGBO SUTURE ZONE, TIBET, CHINA
34. **Mochalov, A.A.** GENETIC MODEL OF PGM HOSTED IN CUMULATIVE GABBRO-PYROXENITE-DUNITE COMPLEXES OF THE KORYAK HIGHLAND, RUSSIA
35. **Mochalov, A.G.**, Dmitrenko, G.G. & Goncharov, A.G. GENETIC FEATURES OF PLATINUM MINERALS IN ULTRAMAFIC COMPLEXES OF KORYAK HIGHLAND OPHIOLITES
36. **Okrugin, A.** Pt-Fe ALLOYS AS INDEX MINERALS FOR THE FORMATION OF PGE ORES IN MAFIC-ULTRAMAFIC ROCKS
37. **Pašava, J.**, Malec, J., Griffin, W.L. & Gonzáles-Jiménez, J.M. SOURCE OF PLATINUM-GROUP MINERALS (PGM) FROM THE VESTŘEV PYROPE-GARNET RICH PLACER DEPOSIT, BOHEMIAN MASSIF: RESULTS FROM MINERALOGICAL AND Re-Os GEOCHRONOLOGICAL STUDIES
38. **Petrov, S.** & Nazimova, Yu. MAIN CHARACTERISTICS OF «METALLIC PLATINUM» TYPE OF ORE FROM VARIOUS RUSSIAN DEPOSITS
39. **Petrov, S.**, Nazimova, Yu., Borozdin, A., Korneev, S., Polekhovsky, Yu., Tarasova, I., Antonov, A., Polonyankin, A. & Semikolennykh, A. APPLIED PGE MINERALOGY AND ORE BENEFICIATION OF THE KONDYOR DEPOSIT (KHABAROVSK REGION, RUSSIA)
40. **Shmelev, V.** PLATINUM-BEARING BELT OF THE URALS: TECTONIC SETTINGS, ROCK COMPLEXES AND STRUCTURE
41. **Tolstykh, N.** PLATINUM ALLOYS OF URAL-ALASKAN TYPE INTRUSIONS FROM URALS AND ALDAN SHIELD
42. Törmänen, T., Konnunaho, J., **Karinen, T.**, Lehtonen, M. & Huovinen, I. NEW PGE-REEF MINERALIZATION OF THE SOTKAVAARA PYROXENITE INTRUSION, ROVANIEMI, NORTHERN FINLAND
43. **Xiong, F.,**-Yang, J.S., Zhang, X.X., Robinson, P.T., Xu, X.Z., Li, Y., Liu, Z. & Liu, F. ORIGIN OF PODIFORM CHROMITITE: A NEW MODEL
44. **Zhmodik, S.**, Kiseleva, O., Belyanin, D., Damdinov, B., Airiyants, E. & Zhmodik, A. PGE MINERALIZATION IN OPHIOLITES OF THE SOUTHEAST PART OF THE EASTERN SAYAN (RUSSIA)

Posters of the 6th Session "PGE and Au through experiments"

45. **Evstigneeva, T.L.** , Boeva, N.M. , Trubkin, N.V. & Vymazalová, A. NEW DATA ON Pd-Sn-Te PHASES

46. **Sinyakova, E.F.** & Kosyakov, V.I FRACTIONAL CRYSTALLIZATION OF THE MELT IN THE Cu-Fe-Ni-S-(Pt, Pd, Rh, Ir, Ru, Ag, Au, Te) SYSTEM IN THE REGION OF PENTLANDITE CRYSTALLIZATION

Posters of the 7th Session "New advances in the understanding of PGE mineralogy from magmatic to supergene environments"

47. **Cherdantseva, M.V.** & Vishnevsky, A.V. NEW DATA ON THE COMPOSITION OF SULFIDES AND TELLURIDES IN RUDNY INTRUSION (NW MONGOLIA)
48. **Garuti, G.**, Zaccarini, F., Fiorentini, M., Locmelis, M., Thalhammer, O.A.R. & Kollegger, P. MINERALOGICAL RESIDENCE OF PLATINUM GROUP ELEMENTS (PGE) IN THE MAGMATIC NI-Fe-Cu SULFIDE DEPOSITS OF THE IVREA VERBANO ZONE (WESTERN ALPS, ITALY)
49. **Grokhovskaya, T.L.**, Griboedova, I.G. & Karimova, O.V. DIVERSITY OF PGM ASSEMBLAGES IN PGE DEPOSITS OF THE MONCHEGORSK IGNEOUS COMPLEX, RUSSIA
50. Karimova, O.V., **Grokhovskaya, T.L.**, Zolotarev, A.A., Gurzhiy, V.V. & Borisovkiy, S.E. ISOMERTIETIE: CRYSTAL STRUCTURE REFINEMENT
51. Kazymov, K.P., Zhdanov, V.M., Purchase, M. & **Veksler, I.V.** X-RAY COMPUTER TOMOGRAPHY OF PLATINIFEROUS STRATIFORM CHROMITITES IN THE CRITICAL ZONE OF THE BUSHVELD IGNEOUS COMPLEX, SOUTH AFRICA
52. **Koneyev, R.I.**, Khalmatov, R.A., Vymazalova, A. & Vokal, V.I. NON-TRADITIONAL Pt-Pd MINERALIZATION OF THE KURAMA VOLCANIC-PLUTONIC REGION (UZBEKISTAN)
53. **McCall, M.**, Miller, J.A., Basson, I., Du Plessis, A. & Smith, D. THE APPLICATION OF XCT IN DETERMINING THE 3-D ENVIRONMENT OF IN-SITU PGM GRAINS AND ASSOCIATED MINERALS FROM THE BUSHVELD COMPLEX, SOUTH AFRICA
54. Morozova, A. & **Pushkarev, E.** CHROMIAN GLAGOLEVITE AND OTHER HIGH-Cr SILICATES IN PGM-RICH CHROMITITES IN THE URAL-ALASKAN-TYPE INTRUSIONS AS GENETIC MARKERS
55. **Shaybekov, R.I.**, Kuznetsov, S.K. & Shevchuk, S.S. NOBLE METALS IN THE CHROME ORES OF LAGORTINSKO-KERSHORSKY AREA (POLAR URALS)
56. **Vorontsova, N.**, Lazarenkov, V., Talovina, I. & Gaifutdinova A. PLATINUM-GROUP ELEMENTS AND GOLD IN SUPERGENE NICKEL DEPOSITS IN ZONAL ULTRAMAFIC MASSIFS OF THE URALS
57. **Zaccarini, F.**, Pushkarev, E., Garuti, G., Krause, J., Dvornik, G.P., Stanley, C. & Bindi, L. PLATINUM-GROUP MINERALS (PGM) NUGGETS FROM THE URAL-ALASKAN TYPE COMPLEX OF UKTUS (CENTRAL URALS, RUSSIA): GENETIC ASPECTS

Posters of the 8th Session "Open Session"

58. **Cocker, H.**, Park, J.-W., Campbell, I., Leys, C. & Valente, D. PLATINUM GROUP ELEMENTS IN FELSIC SUITES ASSOCIATED WITH THE EI ABRA AND GRASBERG PORPHYRY DEPOSITS
59. **Liu, Y.G.,** Lu, X.B., Wang, H.F., Yi, Q., Li, T.F., Qin, M., Meng, Y.F., & Zhang, B. METALLOGENIC PROCESS OF POYI MAGMATIC Cu-Ni DEPOSIT: REVELATION FROM THE CONTRAST OF PGE AND OLIVINE COMPOSITION WITH OTHER CU-NI- SULFIDE DEPOSITS IN THE EARLY PERMIAN, XINJIANG
60. **Masaitis, V.L.**, Goderis, S., Vanhaecke, F. & Claeys Ph. PGE IN DEVONIAN MAFIC ROCKS AND THE ORIGIN OF QUATERNARY PLATINUM PLACERS (EASTERN PART OF SIBERIAN PLATFORM
61. **Mokrushin, A.V.,** Kudryashov, N.M., Huber, M. FIRST DISCOVERY OF SPERRYLITE IN ARCHAEAN PATCHEMVAREK GABBROANORTHOSITE (KOLA REGION, RUSSIA)
62. **Osovetsky, B.M.** & Barannikov, A.G. SURFACE OF PLACER PLATINUM UNDER ELECTRON MICROSCOPE
63. **Puchkov, V.N.**, Kovalev, S.G. & Salikhov, D.N. PGE IN PYRITIC DEPOSITS OF THE URALS (NEW DATA)
64. **Shaybekov, R.I.** NOBLE METALS GEOCHEMISTRY AND MINERALOGY IN SULFIDE MINERALIZATION OF GABBRO-DOLERITE BODIES (PAY-KHOY, RUSSIA)

65. **Shevchuk, S.S.** & Shumilova, T.G. PdTe AND $PdTe_2$ IN BORNITE OF VOLKOVSKY DEPOSIT (CENTRAL URALS): STUDY BY SEM, EDS AND "IN SITU" MICRODIFFRACTION
66. **Tretiakova, I.G.**, Malkovets, V.G., Griffin, W.L., Pearson, N.J., Pokhilenko, L.N., Pokhilenko, N.P. & Kostrovitsky, S.I. MINERALOGY, GEOCHEMISTRY AND IN SITU Re-Os DATING OF SULFIDES FROM MEGACRYSTALLINE PYROPE PERIDOTITES FROM THE UDACHNAYA PIPE, SIBERIAN CRATON
67. **Yu, S.-Y.** & Song, X.-Y. PROCESSES CONTROLLING HIGHLY SIDEROPHILE ELEMENT FRACTIONATIONS IN PERIDOTITE XENOLITHS AND THEIR INFLUENCE ON Os ISOTOPES

POST-SYMPOSIUM FIELD TRIP EXCURSIONS

August 15 - 16, 2014 – Field trip 5, "The Uralian Platinum Belt: The Nizhny Tagil clinopyroxenite-dunite massif and the Volkovsky gabbro massif, and related platinum and copper deposits"

August 15 - 16, 2014 – Field trip 6, "The Ural Platinum Belt: The Kachkanar titanomagnetite deposit in clinopyroxenite. Platinum placers and lode deposits related to the Svetly Bor clinopyroxenite-dunite Uralian-Alaskan-type intrusion"

August 15 – 25, 2014 – Field trip 7, "The Ioko-Dovyren mafic-ulramafic layered intrusion in the Northern Baikal region and associated PGE-Cu-Ni deposit"

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Prof. Roland K.W. Merkle, Pretoria, South Africa
Prof. Felix P. Mitrofanov, Apatity, Russia
Prof. Alexandr G. Mochalov, St-Petersburg, Russia
Prof. Antony J. Naldrett, Toronto, Canada
Prof. Gleb V. Polyakov, Novosibirsk, Russia
Prof. Victor N. Puchkov, Ufa, Russia
Prof. Edward M. Ripley, Bloomington, USA
Prof. German B. Fershtater, Yekaterinburg, Russia
Prof. Alexandr I. Khanchuk, Vladivostok, Russia
Dr. Marco Fiorentini, Perth, Australia
Dr. Hazel Prichard, Cardiff, United Kingdom
Prof. Wolfgang Maier, Cardiff, United Kingdom
Prof. Judith Kinnaird, Johannesburg, South Africa
Prof. Song Xieyan, Guizhou, China

Local Organizing Group

Dr. Evgeny Pushkarev - Organizing Group Leader
Dr. Elena Anikina
Dr. Kreshimir Malitch
Prof. Valery Murzin
Dr. Inna Safonova
Dr. Tat'yana Osipova
Dr. Galina Shardakova
Dr. Elena Zin'kova
Dr. Dasha Kiseleva
Dr. Sergey Pribavkin
Dr. Irina Gottman

Pre-Symposium Social Program (8 – 10 August)

Dear participants of the 12th International Platinum Symposium,
We propose to organize several pre-conference excursions related to sightseeing and museums of Yekaterinburg. **All the excursions are free of charge.**

You can join any excursion group at ***the Central (Tsentralny) Hotel*** as it indicate below.

For any questions concerning the social program please contact Tat'yana Osipova from the local Organizing group (osipova_t@inbox.ru, +79043827538).

Brief overview of the excursions is given below:

August 8, Friday

Ural Geological Museum

$11^{00} – 12^{30}$

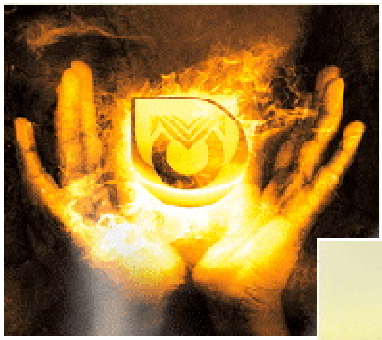
Start from the Central (Tsentralny) Hotel, by foot at 10^{10}

Dmitry Voroshuk and Galina Shardakova

will be your guides

Ural Geological museum locates at the Ural State Mining University. It was founded by Emperor Nicholas II in 1914, and at that time it was the first institution of higher education in Ekaterinburg. Since its foundation, a unique collection of rocks and minerals characterizing the Urals mineral treasures was collected and stored at the University. A new exhibition of "Platinum of the Urals" has specially been prepared for the delegates of the 12th International Platinum Symposium. The exhibition presents platinum nuggets, platinum-bearing minerals and ores, host rocks from the main platinum deposits of the Urals, as well as books of XIX-XX centuries, describing the history of discovery and mining of platinum deposits of the Urals and a collection of old location maps of platinum deposits.

"Precious Metals of Urals"



$11^{00} – 13^{00}$

Shuttle begins travelling from the Central (Tsentralny) Hotel at 10^{30}

Evgeny Pushkarev will accompany you during the excursion

We suggest to organize a short (about two hours) excursion to the enterprise "Precious Metals of Urals"(http://pm-ural.com/en/). The maximum number of participants is 10 people. Please let us know if you are interested in this excursion (e-mail: Pushkarev.1958@mail.ru). There are three free places left.

Kasli Cast-Iron Pavilion in Yekaterinburg Museum of Fine Arts

$15^{00}–16^{15}$

Start from the Central (Tsentralny) Hotel, by foot at 14^{30}

Tat'yana Osipova will accompany you to the Museum

Yekaterinburg Museum of Fine Arts (YMFA) is the largest art museum in the Urals, a unique depository of masterpieces of world significance.

YMFA is the only museum in the world where one may see the architectural construction made of cast-iron. This is the Kasli cast-iron pavilion, designed by St. Petersburg architect Eugene Baumgarten for the World Art and Industrial Exhibition in Paris (1900). The success of the Kasli factory surpassed all expectations. From morning to evening the stream of visitors circled round the pavilion examining and admiring "the Ural miracle" and its "stuffing".

The Kasli cast-iron pavilion is the unique existing example of an eclectic approach to design, intertwining Old Russian and Scandinavian motifs with decorative elements traditional in the Byzantine and Venetian art. The pavilion is on the UNESCO list of world heritage monuments.

August 9, Saturday

Bus excursion to the Ganina Yama with a visit of Temple-on-Blood

10^{00} – 14^{00}

Start from the Central (Tsentralny) Hotel at 09^{40}

Tat'yana Osipova and Elena Zin'kova will accompany you during the excursion

Ganina Yama is a relatively new monument constructed out of wood and the story of its erection is full of tragic accounts. It is visited by orthodox people from all over the country to pay respect to the late Romanovs – the emperor dynasty of Russia. The given temple complex was built were the remains of the royal family was found. It is there where their bodies were buried after they were killed. Besides that, Ganina Yama is not only a destination for Christians, but also for anyone familiar with Russian history who is interested in finding out more about the mystery of the murder of the czar's family. Throughout that tour at Ganina Yama, you will get a briefing about the partially restored events of the horrific night of July 17th, 1917.

You will also see photographs that were taken not long before their deaths. Also there you can have a look at old icons manufactured by Ural craftsmen.

Yekaterinburg city overview bus tour

August 9, Saturday

16^{00}–19^{00}

Start from the Central (Tsentralny) Hotel at 15^{40}

August 10, Sunday

11^{00} – 14^{00}

Start from the Central (Tsentralny) Hotel at 10^{40}

Tat'yana Osipova and Elena Zin'kova will accompany you during the excursion

Yekaterinburg is considered to be an informal capital of the Urals. Founded by the allies of Peter I during his mature years, it became the bulwark of his ideas: starting in the 18th century, industry and craftsmanship began to flourish there.

The character of the city was easily seen in its architecture. The guide will show you the beautiful harbors of merchants and factory owners who took fancy to this rough region –buildings of the XVIII-XIX centuries; temples and churches – new and long-standing ones; skyscrapers and cozy tree nursery. Also in the city is a pedestrian street with famous statues, benches, and intricate street lights out of Kasli poured cast-iron.

Social Program (11 – 14 August)

Dear participants and guests of the 12th International Platinum Symposium,
We propose to organize several excursions related to sightseeing and museums of Yekaterinburg.
All the excursions are free of charge.

You can join any excursion group at the ***Ural Federal University (Lenin Avenue, 51), where is the conference hall.***

For any questions concerning the social program please contact Tat'yana Osipova from the local Organizing group (osipova_t@inbox.ru, +79043827538).
Brief overview of the excursions is given below:

Ural Geological Museum

August 11, 12, 13, 14

$11^{00} – 12^{30}$

Start from the

Ural Federal University (Lenin Avenue, 51),

by foot at 10^{10}

Dmitry Voroshuk and Galina Shardakova

will be your guides

Ural Geological museum locates at the Ural State Mining University. It was founded by Emperor Nicholas II in 1914, and at that time it was the first institution of higher education in Ekaterinburg. Since its foundation, a unique collection of rocks and minerals characterizing the Urals mineral treasures was collected and stored at the University. A new exhibition of “Platinum of the Urals” has specially been prepared for the delegates of the 12th International Platinum Symposium. The exhibition presents platinum nuggets, platinum-bearing minerals and ores, host rocks from the main platinum deposits of the Urals, as well as books of XIX-XX centuries, describing the history of discovery and mining of platinum deposits of the Urals and a collection of old location maps of platinum deposits.

Museum of stone-cutting and jewelry art history

August 11, 13

$15^{00} – 16^{30}$

Start from the

Ural Federal University (Lenin Avenue, 51),

by foot at 14^{40}

Irina Gottman will accompany you during the excursion

The museum of stone-cutting and jewelry art history was organized in 1992. It is located just in the center of the city on the place of its first construction site. It occupies the territory of the former Mining drugstore which is preserved now as an architectural ensemble of the Federal significance. The project of building was designed by a renowned Urals architect Michel Malakhov in 1821.

The incredible mineralogical riches of the Urals have attracted the attention of the local stone-cutters since the town construction began, and have become the impetus for stone-cutting and jewelry art of the Urals masters. They have managed to cut the local stones in such a manner that their jewelry astounded the contemporaries not only in the Urals but beyond its boundaries with its variety of artistic taste and perfection of finishing touches. Such outstanding mineralogical exhibits as emerald ashlars "Zvezdar", "Novogodny", "Demantoid Alexandrov", ashlar of Gumyoshki malachite of the 18-19 th. centuries are unique pieces of art of the museum exhibitions.

Open sightseeing platform on the 52th floor of the Business Center «Visotsky» (height of 186 m)

August 11, 12

$19^{00} – 20^{00}$

Start from the

Ural State University (Lenin Avenue, 51),

by foot at 18^{40}

The maximum number of participants is 15 persons.

Tat'yana Osipova will accompany you during the excursion

From this point one can see a truly magnificent view — panorama of Yekaterinburg is stretching upon 25 km. One will be able to open Yekaterinburg from a new side, see it spread before them, and estimate its beauty and grandeur. From the sightseeing platform one can see historical architectural complexes, Yekaterinburg motorways, and cupola of temples from an unusual angle. Not a single postcard has such a fascinating view, that opens form the windows of "Visotsky". From here open breath-taking straight and wide prospects and streets. Having become airborne, having risen above fussy life, enjoy the sights of the city, the third capital of Russia and number one for those, who builds, creates it and loves with all his heart!

All visitors will be provided with modern excursion equipment "Radio-guide" with the help of which visitors will get acquainted with the city, learn some interesting facts from its history, buildings, monuments, parks and architecture.

The safety of the platform is studied with particular care. In spite of the open space (the sightseeing platform is out in the open) its perimeter is enclosed with high ultra-strong glass.

Ural Mineralogical Museum Pelepenko

August 12

$15^{00} – 16^{30}$

Start from the

Ural State University (Lenin Avenue, 51),

by foot at 14^{40}

Tat'yana Osipova will accompany you during the excursion

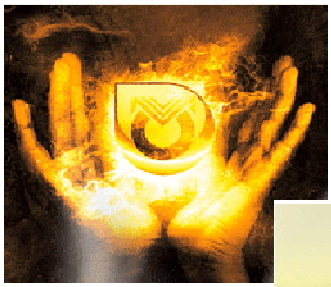
The private V.A.Pelepenko mineralogical collection is exposited in Museum. It is the unique assemblage of minerals, including rare minerals and their associations. Some stone- and bone-cut samples are also present. The collection is of great scientific and art value, one of the most spectacular in Russia.

"Precious Metals of Urals"

August 15

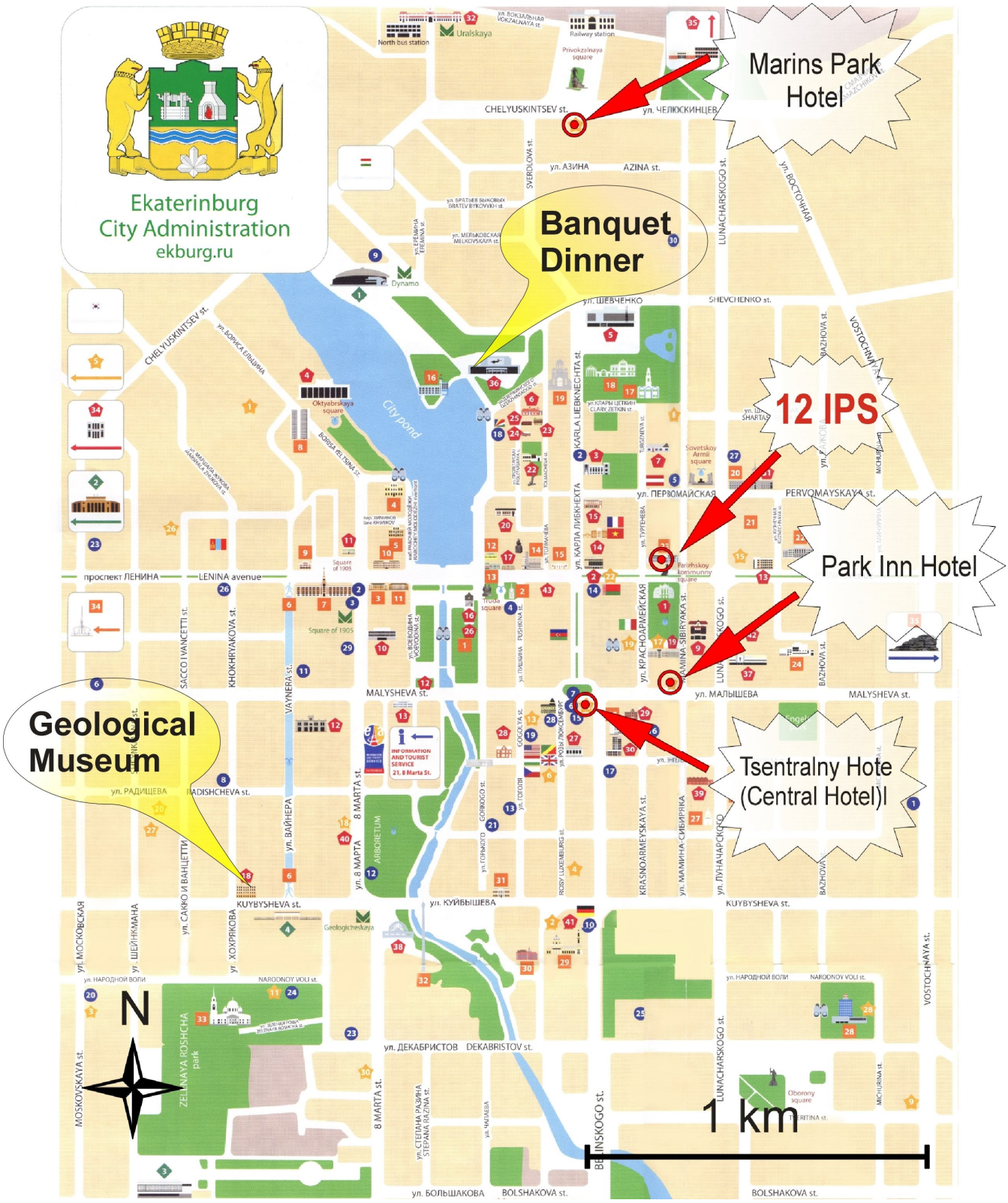
$11^{00} – 13^{00}$

Shuttle begins travelling from the Ural State University (Lenin Avenue, 51) at 10^{30}



We suggest to organize a short (about two hours) excursion to the enterprise "Precious Metals of Urals"(http://pm-ural.com/en/). The maximum number of participants is 10 persons. Please let us know if you are interested in this excursion (e-mail: Pushkarev.1958@mail.ru). There are three free places left.

Yekaterinburg downtown map



Yekaterinburg at night