

MINERAL RESOURCES, METALLOGENESIS, AND TECTONICS OF NORTHEAST ASIA

Project Summary, Publication List, and Web Sites

INTRODUCTION

A six-year project is being conducted by the U.S. Geological Survey and collaborating resource agencies to provide a critical data base and companion geologic information on the Mineral Resources, Metallogensis, and Tectonics of Northeast Asia. Data from the project is benefiting participants and customers by: (1) providing a comprehensive international data base on the mineral resources of the region that will be the first, extensive knowledge available in English; (2) providing major new interpretations of the origin and crustal evolution of mineralizing systems and their host rocks, thereby enabling enhanced, broad-scale metallogenic and tectonic reconstructions; and (3) promoting trade and scientific and technical exchanges between North America and Eastern Asia.

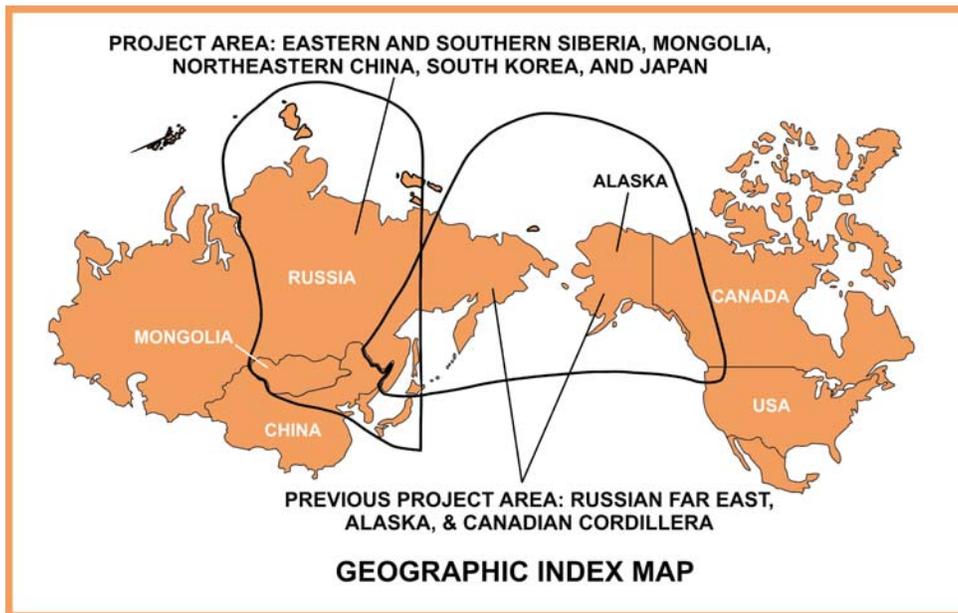
COLLABORATING AGENCIES

The collaborating agencies for the project are the Russian Academy of Sciences, Academy of Sciences of the Sakha Republic (Yakutia), VNIIOkeangeologia and Ministry of Natural Resources of the Russian Federation, Yakutian Academy of Sciences, Mongolian Academy of Sciences, Mongolian University of Science and Technology,

Mongolian National University, Jilin University, Changchun, China, the China Geological Survey, the Korea Institute of Geosciences and Mineral Resources, the Geological Survey of Japan/AIST, University of Texas Arlington, and the U.S. Geological Survey. Western supporters are the Colorado School of Mines, Stanford University, University of Alaska Fairbanks, University of Pittsburgh, the Alaska Miners Association, the Northwest Mining Association, and the Society of Economic Geologists.

CUSTOMERS

This project is providing vital data for a wide variety of customers for making sound economic planning and investment decisions and for increasing their geologic knowledge of this region. These customers include: (1) major mining, petroleum, environmental, construction, investment, and information companies; (2) federal and state government agencies in all countries; (3) professional organizations; (4) earth science departments at major universities; and (5) news media. A major international customer is the Commerce Working Group of the Russian-U.S.A. Commission.





STUDY AREA

The project study area consists of Eastern and Southern Siberia, Mongolia, Northeastern China, South Korea, Japan, and adjacent offshore areas (below figure). This area is approximately bounded by 30 to 82 N. latitude and 75 to 144 E. longitude.

PREVIOUS PROJECT

The project extends and build on data and interpretations from a previous project on the Major Mineral Deposits, Metallogenesis, and Tectonics of the Russian Far East, Alaska, and the Canadian Cordillera (below figure) that is being completed by the U.S.G.S., the Russian Academy of Sciences, the Alaska Division of Geological and Geophysical Surveys, and the Geological Survey of Canada.

PRODUCTS

Products for the project include: (a) detailed mineral resource tables and location maps with data on about 1,600 lode deposits and 75 placer districts for the project area, based on original, cited references; (b) regional geodynamics maps and detailed explanations that will provide the geologic setting for mineral deposits and metallogenic belts; (c) mineral deposit location and metallogenic belt maps; and (d) metallogenic and tectonic interpretations, including a four-dimensional time-space model depicting the crustal origin and evolution of mineral deposits and host rocks. Preliminary versions of geodynamics maps and mineral resource data are being published for benefit of customers. Publications are being released in both paper format (USGS publications and scientific journals), and digital format (floppy disk, CD-ROM, and Internet/Web). Geodynamics maps, and mineral resource data and maps are being compiled and published as GIS spatial data. The various resource tables, maps, and interpretative materials will be authored by the international collaborators with the USGS project members serving mainly as co-editors.

PRELIMINARY PUBLICATIONS BOOK 1 - 1999

Preliminary Publications Book 1 From Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia, Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., 1999: U.S.G.S. Open-File Report 99-165 (CD-ROM). Available for free from Internet/Web at:

<http://geopubs.wr.usgs.gov/open-file/of99-165/>

Introduction to preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia, by Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast

Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 6 p.

Geographic base map of Northeast Asia, by Miller, R.J., Koch, R.D., Nokleberg, W.J., Hwang, Duk-Hwan, Ogasawara, Masatsugu, Orolmaa, Demberel, Prokopiev, A.V., Sudo, Sadahisa, Vernikovskiy, V.A., and Ye, Mao, 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 1 sheet, scale 1: 5,000,000, 3 p.

Preliminary Description of Mineral Deposit Models, by Gunchin, D., Dangindorjiin, D., Gerel, O., Gotovsuren, A., and Sodov, A., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 30 p.

Preliminary geodynamic map of Yakutia region, eastern Siberia, by Parfenov, L.M., Prokopiev, A.V., Deikunenko, A.V., Oxman, V.S., Smelov, A.P., Timofeev, V.F., Tret'yakov, F.F., Zadgenizov, A.P., and Vernikovskiy, V.A., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 2 sheets, scale 1:5,000,000.

Preliminary table of Lode and Occurrences of Altay-Sayan Region and Adjacent Areas, Eastern Siberia, Russia, by Obolenskiy, A.A., Distanov, E.G., and Sotnikov, V.I., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 13 p.

Preliminary table of lode and placer deposits and occurrences of Mongolia, by Gunchin, D., Badarch, G., Chimed, N., Dorjgotov, D., and Gotovsuren, A., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 62 p.

Preliminary table of placer gold deposits and occurrences of Mongolia, by Dejidmaa, G., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 9 p.

Preliminary terrane and overlap assemblage map of Altay-Sayan region, southern Siberia, by Berzin, N.A., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary

publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 1 sheet, scale 1:5,000,000.

Preliminary terrane and overlap assemblage map of Russian Southeast region, by Khanchuk, A.I., and Popeko, L.I., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 1 sheet, scale 1:5,000,000.

Preliminary terrane and overlap assemblage map of Trans-Baikal and Eastern Sayan region, by Gordienko, I.V., and Bulgatov, A.N., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 1 sheet, scale 1:5,000,000.

Summary of pre-accretionary and accretionary metallogenic belts of Mongolia, by Dejidmaa, G., and Badarch, G., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 10 p.

Terrane map of Northeast Asia: Principles of compilation and major subdivisions of the legend, by Parfenov, L.M., Khanchuk, A.I., and Nokleberg, W.J., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 11 p.

Terranes, synaccretionary, and postaccretionary complexes of the Transbaikalia and southeastern part of Eastern Sayn Regions, Siberia, by Gordienko, I.V., and Bulgatov, A.N., 1999, in Nokleberg, W.J., Naumova, V.V., Kuzmin, M.I., and Bounaeva, T.V., eds., Preliminary publications book 1 from project on mineral resources, metallogenesis, and tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 99-165 (CD-ROM), 9 p.

PRELIMINARY PUBLICATIONS BOOK 2 – 2003

This publication provides preliminary versions of major compilations in Adobe Acrobat PDF format for maps, and Word and PDF format for articles and tables.

Preliminary Publications Book 2 From Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia, edited by Nokleberg, W.J., Miller, R.J., Naumova, V.V., Khanchuk, A.I., Parfenov, L.M., Kuzmin, M.I., Bounaeva, T.M., Obolenskiy, A.A., Rodionov, S.M., Seminskiy, Z.V., and Diggles, M.F., 2003: U.S.G.S. Open-File Report 03-203 (CD-

ROM). Web version available for free at: <http://geopubs.wr.usgs.gov/open-file/of03-103/>

Preliminary Northeast Asia geodynamics map (Adobe Acrobat PDF version), by Parfenov, L.M., Khanchuk, A.I., Badarch, Gombosuren, Miller, R.J., Naumova, V.V., Nokleberg, W.J., Ogasawara, Masatsugu, Prokopiev, A.V., and Yan, Hongquan, with contributions on specific regions by Belichenko, Valentina, Berzin, N.A., Bulgatov, A.N., Byamba, Jamba, Deikunenko, A.V., Dong, Yongsheng, Dril, S.I., Gordienko, I.V., Hwang, Duk Hwan, Kim, B.I., Korago, E.A., Kos'ko, M.K., Kuzmin, M.I., Orolmaa, Demberel, Oxman, V.S., Popeko, L.I., Rudnev, S.N., Sklyarov, E.V., Smelov, A.P., Sudo, Sadahisa, Suprunenko, O.I., Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Timofeev, V.F., Tret'yakov, F.F., Tomurtogoo, Onongin, Vernikovskiy, V.A., Vladimiro, A.G., Wakita, Koji, Ye, Mao, and Zedgenizov, A.N., 2003, in Nokleberg, W.J., and 10 others, eds.: Preliminary Publications Book 2 from Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 03-203 (CD-ROM), 2 sheets, scale 1:5,000,000.

Preliminary metallogenic belt and mineral deposit location maps for Northeast Asia (Adobe Acrobat PDF versions), by Obolenskiy, A.A., Rodionov, S.M., Dejidmaa, Gunchin, Gerel, Ochir, Hwang, Duk Hwan, Miller, R.J., Nokleberg, W.J., Ogasawara, Masatsugu, Smelov, A.P., Yan, Hongquan, and Seminskiy, Z.V., with compilations on specific regions by Ariunbileg, Sodov, Biryul'kin, G.B., Byamba, Jamba, Davydov, Y.V., Distanov, E.G., Dorjgotov, Dangindorjiin, Gamyamin, G.N., Fridovskiy, V.Yu., Goryachev, N.A., Gotovsuren, Ayurzana, Khanchuk, A.I., Kochnev, A.P., Kostin, A.V., Kuzmin, M.I., Letunov, S.A., Li, Jiliang, Li, Xujun, Malceva, G.D., Melnikov, V.D., Nikitin, V.M., Parfenov, L.M., Popov, N.V., Prokopiev, A.V., Ratkin, V.V., Shpikerman, V.I., Sotnikov, V.I., Spiridonov, A.V., Stogniy, V.V., Sudo, Sadahisa, Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Supletsov, V.M., Timofeev, V.F., Tyan, O.A., Vetluzhskikh, V.G., Wakt, Koji, Xi, Aihua, Yakovlev, Y.V., Zhizhin, V.I., Zinchuk, N.N., and Zorina, L.M., 2003, in Nokleberg, W.J., and 10 others, eds.: Preliminary Publications Book 2 from Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 03-203 (CD-ROM), 1 sheet, scale 1:7,500,000, 3 sheets, scale 1:15,000,000, explanatory text, 93 p.

Summary of significant metalliferous and selected non-metalliferous lode deposits, and selected placer districts of Northeast Asia (Adobe Acrobat PDF and Word versions), by Ariunbileg, Sodov, Biryul'kin, G.V., Byamba, Jamba, Davydov, Y.V., Dejidmaa, Gunchin, Distanov, E.G., Dorjgotov, Gamyamin,

G.N., Gerel, Ochir, Fridovskiy, V.Yu., Gotovsuren, Ayurzana, Hwang, Duk Hwan, Kochnev, A.P., Kostin, A.V., Kuzmin, M.I., Letunov, S.A., Li, Jiliang, Li, Xujun, Malceva, G.D., Melnikov, V.D., Nikitin, V.M., Obolenskiy, A.A., Ogasawara, Masatsugu, Orolmaa, Demberel, Parfenov, L.M., Popov, N.V., Prokopiev, A.V., Ratkin, V.V., Rodionov, S.M., Seminskiy, Z.V., Shpikerman, V.I., Smelov, A.P., Sotnikov, V.I., Spiridonov, A.V., Stogniy, V.V., Sudo, Sadahisa, Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Supletsov, V.M., Timofeev, V.F., Tyan, O.A., Vetluzhskikh, V.G., Xi, Aihua, Yakovlev, Y.V., Yan, Hongquan, Zhizhin, V.I., Zinchuk, N.N., and Zorina, L.M., 2003, in Nokleberg, W.J., and 10 others, eds.: Preliminary Publications Book 2 from Project on Mineral Resources, Metallogensis, and Tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 03-203 (CD-ROM), digital files and explanatory text, 47 p.

Geographic base map of Northeast Asia (Adobe Acrobat PDF, Corel Draw, and Adobe Illustrator versions), by Miller, R.J., Koch, R.D., Nokleberg, W.J., Hwang, Duk-Hwan, Ogasawara, Masatsugu, Orolmaa, Demberel, Prokopiev, A.V., Sudo, Sadahisa, Vernikovskiy, V.A., and Ye, Mao, 2003, in Nokleberg, W.J., and 10 others, eds.: Preliminary Publications Book 2 from Project on Mineral Resources, Metallogensis, and Tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 03-203 (CD-ROM), digital files and explanatory text, 3 p.

Preliminary mineral deposit models for Northeast Asia (Adobe Acrobat PDF and Word versions), by Obolenskiy, A.A., Rodionov, S.M., Ariunbileg, Sodov, Dejidmaa, Gunchin, Distanov, E.G., Dorjgotov, Dangindorjiin, Gerel, Ochir, Hwang, Duk Hwan, Sun, Fengyue, Gotovsuren, Ayurzana, Letunov, S.N., Li, Xujun, Nokleberg, W.J., Ogasawara, Masatsugu, Seminsky, Z.V., Smelov, A.P., Sotnikov, V.I., Spiridonov, A.A., Zorina, L.V., and Yan, Hongquan, 2003, in Nokleberg, W.J., and 10 others, eds.: Preliminary Publications Book 2 from Project on Mineral Resources, Metallogensis, and Tectonics of Northeast Asia: U.S. Geological Survey Open-File Report 03-203 (CD-ROM), 47 p.

OTHER RECENT MAJOR PUBLICATIONS

Preliminary Northeast Asia geodynamics map (Paper Print-On-Demand and Web versions), by Parfenov, L.M., Khanchuk, A.I., Badarch, Gombosuren, Miller, R.J., Naumova, V.V., Nokleberg, W.J., Ogasawara, Masatsugu, Prokopiev, A.V., and Yan, Hongquan, with contributions on specific regions by Belichenko, Valentina, Berzin, N.A., Bulgatov, A.N., Byamba, Jamba, Deikunenko, A.V., Dong, Yongsheng, Dril, S.I., Gordienko, I.V., Hwang, Duk Hwan, Kim, B.I., Korago, E.A., Kos'ko, M.K., Kuzmin, M.I., Orolmaa, Demberel, Oxman, V.S., Popeko, L.I., Rudnev, S.N.,

Sklyarov, E.V., Smelov, A.P., Sudo, Sadahisa, Suprunenko, O.I., Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Timofeev, V.F., Tret'yakov, F.F., Tomurtogoo, Onongin, Vernikovskiy, V.A., Vladimiro, A.G., Wakita, Koji, Ye, Mao, and Zedgenizov, A.N., 2003: U.S. Geological Survey Open-File Report 03-205, 2 sheets, scale 1:5,000,000. Paper version available from USGS Maps on Demand Web site: <http://rockyweb.cr.usgs.gov/mod/ak.html> (\$15.00 per sheet). Web version available for free at: <http://geopubs.wr.usgs.gov/open-file/of03-205/>

Preliminary metallogenic belt and mineral deposit location maps for Northeast Asia (Paper Print-On-Demand and Web versions), by Obolenskiy, A.A., Rodionov, S.M., Dejidmaa, Gunchin, Gerel, Ochir, Hwang, Duk Hwan, Miller, R.J., Nokleberg, W.J., Ogasawara, Masatsugu, Smelov, A.P., Yan, Hongquan, and Seminskiy, Z.V., with compilations on specific regions by Ariunbileg, Sodov, Biryul'kin, G.B., Byamba, Jamba, Davydov, Y.V., Distanov, E.G., Dorjgotov, Dangindorjiin, Gamyamin, G.N., Fridovskiy, V.Yu., Goryachev, N.A., Gotovsuren, Ayurzana, Khanchuk, A.I., Kochnev, A.P., Kostin, A.V., Kuzmin, M.I., Letunov, S.A., Li, Jiliang, Li, Xujun, Malceva, G.D., Melnikov, V.D., Nikitin, V.M., Parfenov, L.M., Popov, N.V., Prokopiev, A.V., Ratkin, V.V., Shpikerman, V.I., Sotnikov, V.I., Spiridonov, A.V., Stogniy, V.V., Sudo, Sadahisa, Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Supletsov, V.M., Timofeev, V.F., Tyan, O.A., Vetluzhskikh, V.G., Wakita, Koji, Xi, Aihua, Yakovlev, Y.V., Zhizhin, V.I., Zinchuk, N.N., and Zorina, L.M., 2003: U.S. Geological Survey Open-File Report 03-204, 1 sheet, scale 1:7,500,000, 3 sheets, scale 1:15,000,000, explanatory text, 143 p. Paper version available from USGS Maps on Demand Web site: <http://rockyweb.cr.usgs.gov/mod/ak.html> (\$15.00 per sheet). Web version available for free at: <http://geopubs.wr.usgs.gov/open-file/of03-204/>

Significant metalliferous and selected non-metalliferous lode deposits, and selected placer districts of Northeast Asia (CD and Web versions), by Ariunbileg, Sodov, Biryul'kin, G.V., Byamba, Jamba, Davydov, Y.V., Dejidmaa, Gunchin, Distanov, E.G., Dorjgotov, Gamyamin, G.N., Gerel, Ochir, Fridovskiy, V.Yu., Gotovsuren, Ayurzana, Hwang, Duk Hwan, Kochnev, A.P., Kostin, A.V., Kuzmin, M.I., Letunov, S.A., Li, Jiliang, Li, Xujun, Malceva, G.D., Melnikov, V.D., Nikitin, V.M., Obolenskiy, A.A., Ogasawara, Masatsugu, Orolmaa, Demberel, Parfenov, L.M., Popov, N.V., Prokopiev, A.V., Ratkin, V.V., Rodionov, S.M., Seminskiy, Z.V., Shpikerman, V.I., Smelov, A.P., Sotnikov, V.I., Spiridonov, A.V., Stogniy, V.V., Sudo, Sadahisa, Sun, Fengyue, Sun, Jiapeng, Sun, Weizhi, Supletsov, V.M., Timofeev, V.F., Tyan, O.A., Vetluzhskikh, V.G., Xi, Aihua, Yakovlev, Y.V., Yan, Hongquan, Zhizhin, V.I., Zinchuk, N.N., and Zorina, L.M., 2003: U.S. Geological Survey Open-File Report 03-220

(CD-ROM), digital files and explanatory text, 422 p.
Web version available for free from at: <http://geopubs.wr.usgs.gov/open-file/of03-220/>

SPECIAL ISSUE OF GEOLOGY AND GEOPHYSICS ON GEODYNAMICS, METALLOGENY AND PETROLEUM POTENTIAL OF THE NORTH-ASIAN CRATON AND FRAMING OROGENIC BELTS

- North-Asian craton: metallogeny and petroleum potential, by Kontorovich, A.E. and Kuz'min M.I., 1999: *Geology and Geophysics*, v. 40, p. 1521-1523 (in Russian).
- Early Proterozoic margin-continental complexes of the Angara fold belt and their metallogeny, by Nozhkin, A.D., 1999: *Geology and Geophysics*, v. 40, p. 1524-1544 (in Russian).
- Geodynamics and metallogeny of the Mongolo-Transbaikalian region, by Gordienko, I.V., and Kuz'min, M.I., 1999: *Geology and Geophysics*, v. 40, p. 1545-1562 (in Russian).
- Northern Pacific orogens: a collage of terranes and history of its formation, by Parfenov, L. M., Nokleberg, W.J., Monger, J.W.H., Norton, I.O., Stone, D.B., Fujita, K., Khanchuk, A.I., and Scholl, D.W., 1999: *Geology and Geophysics*, v. 40, p. 1563-1575 (in Russian).
- Comparative analysis of geodynamic settings of the Permo-Triassic magmatism in East and West Siberia, by Al'mukhamedov, A.I., Medvedev, A.Ya., and Kirida, N.P., 1999: *Geology and Geophysics*, v. 40, p. 1575-1587 (in Russian).
- Metallogeny of the Central-Asian orogenic belt: *Geology and Geophysics*, by Obolenskii, A.A., Berzin, N.A., Distanov, E.G., and Sotnikov, V.I., 1999: *Geology and Geophysics*, v. 40, p. 1588- 1604 (in Russian).
- Magmatic centers with Cu-Mo-porphyry mineralization of the Central-Asian mobile belt (for Siberia and Mongolia), by Berzina, A.P., and Sotnikov, V.I., 1999: *Geology and Geophysics*, v. 40, p. 1605-1618 (in Russian).
- Platinoid deposits of the North-Asian craton and its framing: metallogeny and geodynamics, by Dodin, D.A., Polyakov, G.V., Dyuzhikov, O.A., Korobeinikov, A.F., Landa, E.A., Melkomukov, V.N., and Mitrofanov, G.L., 1999: *Geology and Geophysics*, v. 40, p. 1619-1635 (in Russian).
- Mesozoic and Cenozoic geodynamic settings and gold mineralization of Russian Far East, by Khanchuk, A.I., and Ivanov, V.V., 1999: *Geology and Geophysics*, v. 40, p. 1635-1645 (in Russian).
- Phanerozoic metallogeny in Tuva and Northwestern Mongolia, by Lebedev, V.I., Cherezov, A.M., and Lebedeva, M.F., 1999: *Geology and Geophysics*, v. 40, p. 1646-1654 (in Russian).
- Evolution of ore-forming processes and distribution of polymetallic deposits in northwestern Rudny Altai, by Distanov, E.G., and Gas'kov, I.V., 1999: *Geology and Geophysics*, v. 40, p. 1655-1667 (in Russian).
- Compositional variations of gold metallization in relation to the geodynamic settings of formation, by Troshin,

Yu. P., 1999: *Geology and Geophysics*, v. 40, p. 1668-1675 (in Russian).

- Heterochronous centers of naphthide formation and accumulation in the North-Asian craton, by Kontorovich, A.E., Bakhturov, S.F., Basharin, A.K., Belyaev, S.Yu., Burshtein, L.M., Kontorovich, A.A., Krinin, V.A., Larichev, A.I., Li, Guodu, Melenevskii, V.N., Timoshina, I.D., Fradkin, G.S., and Khomenko, A.V., 1999: *Geology and Geophysics*, v. 40, p. 1676-1793 (in Russian).
- Yarakta-Chona petroliferous field of the Nepa-Botuobiya dome Topeshko, V.A., and Ryabkova, L.V., 1999: *Geology and Geophysics*, v. 40, p. 1694-1699 (in Russian).
- Biomarkers in crude oils of the eastern Siberian Platform as indicators of paleoenvironment of source-rock deposition,, by Kashirtsev, V.A., Kontorovich, A.E., Philp, R.P., Chalaya, O.N., Zueva, I.N., and Memetova, N.P., 1999: *Geology and Geophysics*, v. 40, p. 1700-1710 (in Russian).

MAJOR BOOK REPORTS

- Tectonics, geodynamics, and metallogenesis of the Saha Republic (Yakutia) Parfenov, L.M., and Kuzmin, M.I., eds., 2001: MAIK, Nauka/Interperiodica, Moscow, 571 p. (in Russian).

BASIC DATA AND INTERPRETATIVE ARTICLES ON MINERAL RESOURCES, METALLOGENESIS, AND TECTONICS

- Circum-Siberian Neo-Proterozoic ophiolite belt by Khain, V.E., Gusev, G.S., Khain, E.V., Vernikovskiy, V.A., and Volobuyev, M.I., 1997, *Ofiolitti*, v. 22, no. 2, p. 195-200.
- Correlation between $^{87}\text{Sr}/^{86}\text{Sr}$ ratio in accessory apatite from Cu-Mo-porphyry deposits and geodynamic positions of ore-magmatic systems (Siberia, Mongolia) by Sotnikov, V.I., Ponomarchuk, V.A., Berzina, A.P., Berzina, A.N., and Kiseleva, V.Yu., 1999: *Doklady Akademia Nauk*, v. 368, no. 6, p. 821-823 (in Russian).
- Deposits of useful metallic minerals textbook for a new generation by Kuzmin, M.I., Zorina, L.D., and Spiridonov, A.M., 2000: *Geology and Geophysics*, v. 41, no. 3, p. 454-455 (in Russian).
- Evolution and tectonic conditions of formation of ore-controlling structures of the Zun-Kholba deposit by Letunov, S.P., and Seminskyi, Zh.V., 1999, in *Geology and Prospecting of Useful Minerals: Irkutsk State University Publishing House, Irkutsk*, p. 36-47 (in Russian).
- Evolution of magmatism and mineralization in Mongolian Alta by Gerel, O., Dandar, S., Minjin, Ch., and Enkhbaatar, Sh., 2000: *Izvestiya Vuzov Sibiri*, v. 4-5, p. 140-142.
- Evolution of $^{87}\text{Sr}/^{86}\text{Sr}$ ratio in magmatic rocks of Cu-Mo-porphyry ore clusters by Sotnikov, V.I., Ponomarchuk, V.A., Berzina, A.N., Berzina, A.P.,

- Kiseleva, V.Yu., and Morozova, I.P., 2000: *Geologiya i geofizika*, v. 41, no. 8, p. 1112-1123 (in Russian).
- Experience of the large-scale geological-geochemical mapping of rare-metal regions of the Mongolia Altai by Spiridonov, A.M., Gnilusha, V.A., and Kovaleva, V.F., 1999, in *Geology and Prospecting of useful minerals*: Irkutsk State University Publishing House, Irkutsk, p. 138-146 (in Russian).
- Features of geotectonic regime of developing g structures of gold deposits, Kholba displacement zone (Eastern Sayan Mountains) by Seminskyi, Zh.V., Letunov, S.P., and Korol'kov, A.T., 2000, in *Proceedings of the All-Russian Scientific-Practical Conference on Ecologically Safe Prospecting Technologies in the Baikal region: Recent State and Potential*: Buryat Center Publishing House, Russian Academy of Sciences, Ulan-Ude, p. 24-29 (in Russian).
- Formation of large polymetallic deposits of South Siberia according to geodynamic evolution of Paleoasian Ocean by Distanov, E.G., Kovalev, K.R., Gaskov, I.V., and Baulina, M.V., 1999: *Journal of geoscientific research in Northeast Asia*, v. 2, no. 2, p. 154-159.
- Geographic base map of Northeast Asia, by Miller, R.J., Koch, R.D., Nokleberg, W.J., Hwang, Duk-Hwan, Ogasawara, Masatsugu, Orolmaa, Demberel, Prokopiev, A.V., Sudo, Sadahisa, Vernikovskiy, V.A., and Ye, Mao, 1998: U.S. Geological Survey Open-File Report 98-769, scale 1:5,000,000, 2 floppy disks.
- Geologic map of Mongolia by Tomurtogoo, O., Badarch, G., Orolmaa, D., Makhbadar, Ts., Khosbayar, P., 2000: Mineral Resources Authority of Mongolia, scale: 1: 1,000,000 (in Mongolian).
- Geological and geochemical features of the Neoproterozoic ophiolites along the folded Siberian Platform margin by Konnikov, E.G., Tsygankov, A.A., and Vernikovskiy, V.A., 1999: *Journal of geoscientific research in Northeast Asia*, v. 2, no. 2, p. 192-202.
- Geological-industrial characteristics of gold deposits of the Chita Region by Spiridonov, A.M., and Zorina, L.D., 2000, in *Proceedings of the Regional Conference of Geologists of Siberia, Far East and North-east Russia, Metallogeny and Useful Minerals*: Gala Press, Publishing House, Tomsk, v. 2, p. 145-147 (in Russian).
- Geology of the Tsel metamorphic terrane by Badarch, G., and Byamba, J., 1999, in *Problems of Geodynamics and metallogeny of Mongolia*: Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, v. 13, p. 9-13 (in Mongolian).
- Geotraverse through a terrane collage in Southern Khangay by Tomurtogoo, O. and Gerel, O., 1999, in *Excursion Guidebook*: Institute of Geology and mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar, 91 p.
- Gold Metallogeny of Mongolia, by Dejidmaa, G., 1996: *Mongolian Geoscientist*, no.1, p. 6-29.
- Great Jurassic thrust sheets in Beishan (North Mountains)-Gobi areas of China and southern Mongolia, by Zheng, Y., Zhang, Q., Wang, Y., Lin, R., Zuo, G., Wang, S.Z., Lkhasuren, B., Badarch, G., and Badamgarav, J., 1996: *Journal of Structural Geology*, v. 18, p.1111-1126.
- Interview about new project on mineral resources, metallogenesis, and tectonics of Siberia, Mongolia, Northeastern China, and Northern Japan: *Nauka (Science) in Siberia*, July, 1997, no. 25, p. 6.
- Intraplate Mesozoic magmatism in Mongolia by Gerel, O., 2000: *Izvestiya Vuzov Sibiri*, v. 4-5, p. 142-144.
- Main kinds of gold deposits in Siberia (composition, genesis, regional problems) by Kuz'min, M.I., Zorina, L.D., Spiridonov, A.M., Amuzinskii, V.A., Borisenko, A.S., Mitrofanov, G.L., and Sotnikov, V.I., 2000: *Cvetnye Metally*, no. 8, p. 4-9 (in Russian).
- Main metallogenic units of the Sakha Republic (Yakutia), Russia, by Parfenov, L.M., Vetluzhskikh, Gamyarin, G.N., Davydov, Yu., Deikunenko, A.V., Kostin, A.V., Nikitin, V.M., Prokop'yev, A.V., Smelov, A.P., Supletsov, V.M., Timofeyev, V.F., Fridovskiy, V.Yu., Kholmogorov, A.I., and Yakolev, Ya.V., 1999: *International Geology Review*, v. 41, p. 425-456.
- Metallogenetic foci for super-large mineral deposits in border zones between China, Russia, and Mongolia by Hu, Shaokang, Yan, Hongquan, and Ye Mao, 1998: *Science Press, Beijing, Series D*, v. 41, p.28-36.
- Metallogeny and petrochemical features of Devonian volcanism in Rudny Altai and Gorny Altai by Gaskov, I.V., Distanov, E.G., Kalugin, I.A., and Tikunov, Yu.V., 1999: *Geologiya i Geofizika*, v. 40, no. 5, p. 703-715 (in Russian).
- Mineralogy types and origin of the platinum-bearing placer deposits of the Siberian platform by Okrugin A.V., 1998: *International Geology Review*, v. 40, p. 677-687.
- Modes of gold occurrence in ore-forming fluid of the Darasun gold-sulfide deposit (Eastern Transbaikalia) by Matel, N.I., Zorina, L.D., and Prokof'ev, V.Yu., 2000, in *Proceedings of the Scientific Conference, 27-28 April on Recent Problems of Geochemistry*: Irkutsk State University Publishing House, Irkutsk, p. 38-41 (in Russian).
- Neoproterozoic Taimyr ophiolitic belts and opening of the Paleo-Pacific Ocean by Vernikovskiy, V.A., Vernikovskaya, A.E., and Chernykh, A.I., 1998, *International Geology Review*, v. 40, p. 528-538.
- New data on conditions of ore deposition and composition of ore-forming fluids of Sukhoi Log gold-platinum deposit by Laverov, N.P., Prokof'ev, V.Yu., Distler, V.V., Yudovskaya, M.A., Spiridonov, A.M., Grebenshikova, V.G., and Matel, N.L., 2000: *Doklady Academy of Sciences*, v. 371, no. 1, p. 88-92 (in Russian).
- A new tectonic scheme of the Paleozooids in Mongolia, by Tomurtogoo, O., 1997, *Mongolian Geoscientist*, no. 3, p. 19-22.
- North Asia superplume activity in the Phanerozoic: Magmatism and Geodynamics by Yarmoluk, V.V., Kovalenko, V.I., and Kuzmin, M.I., 2000: *Geotektonika*, no. 5, p. 3-29 (in Russian).

- Northeast China mineral resources and regional cooperation by Sun, Yunsheng, and Sun, Fengyue, 1997: *Journal of Geoscientific Research in Northeast Asia*, International Center for Geoscience Research and Education in Northeast Asia, Changchun University of Science and Technology, p.14-19.
- Noyon Uul Syncline, southern Mongolia: Lower Mesozoic sedimentary record of the tectonic amalgamation of central Asia, by Hendrix, M.S., Graham, S.A., Amory J.Y., and Badarch G., 1996: *Geological Society of America Bulletin*, v. 108, p. 1256-1274.
- Occurrences, age, and implications of the Yagan-Onch Hayrhan metamorphic core complex, southern Mongolia by Webb, L.E., Graham, S.A., Badarch, G., Johnson, C.L., and Hendrix, M.S., 1999: *Geology*, v. 27, p. 143-146.
- On the systematics of structures of endogenous ore fields and deposits by Seminskyi, Zh.V., 2000, in *Geology and Prospecting of Useful Minerals: Irkutsk State University Publishing House, Irkutsk*, p. 94-104 (in Russian).
- Onch Hayrhan metamorphic core complex by Badarch, G., 1999: *Mongolian Geoscientist*, no. 2, p. 16-25 (in Mongolian).
- Ore potential of Precambrian unconformity zones in strata-bound basins of the Aldansky Crystalline Shield by Kirillov, V.Ye., and Berdnikov, N.V., 1998, *International Geology Review*, v. 40, p. 135-143.
- Ore systems in structures of the Earth's Crusts of the Baikal-Transbaikalian region by Seminskyi, Zh.V., 2000, in *Proceedings of the Regional Conference of Geologists from Siberia, Far East and North-East Russia: Gala Press Publishing House, Tomsk*, v. 2, Metallogeny and useful minerals, Tomsk, p. 69-70 (in Russian).
- Overview of the Geology and tectonic evolution of southern Mongolia by Badarch, G. and Orolmaa, D., 1998: *Mongolian Geoscientist*, no. 10, p. 10-16.
- Paleozoic sedimentary basins and volcanic-arc systems of southern Mongolia: New stratigraphic and sedimentologic constraints, by Lamb, M.A. and Badarch, G., 1997: *International Geology Review*, v. 39, p.542-576.
- Paleozoic sedimentary basins and volcanic arc systems of southern Mongolia: New geochemical and petrographic constraints by Lamb, M.A., and Badarch, G., 1999: *Paleozoic and Mesozoic tectonic evolution of central Asia-from continental assembly to intracontinental deformation: Geological Society of America Special Paper* (in press).
- Petrological characteristics of granites from the Avdrant and Janchivlan pluton by Gerel, O., Kanizawa, S., and Ishikawa, K., 1999: *Problems of geodynamics and metallogeny of Mongolia*. v. 13, p. 30-34.
- Principles of compilation and the main subdivisions of the legend of the geodynamic map of North and Central Asia, Russian Far East South, Korea and Japan by Parfenov, L.M., Nokleberg, W.J., and Khanchuk, A.I. 1998, *Geology of the Pacific Ocean*, v. 17, no. 3, p. 3-13 (in Russian).
- Problems of tectonics of the Mongol-Okhotsk orogene, by Parfenov, L.M., Popeko, L.I., and Tomurtogoo, O., 1999: *Pacific Ocean Geology*, v. 18, p. 24-43.
- Sedimentary and structural records of late Mesozoic high-strain extension and strain partitioning, East Gobi basin, southern Mongolia by Johnson, C.L., Webb, L.E., Graham, S.A., Hendrix, M.S., and Badarch, G., 1999, in *Paleozoic and Mesozoic tectonic evolution of central Asia from continental assembly to intracontinental deformation: Geological Society of America Special Paper* (in press).
- Sr and Ta granitoid-related ore-magmatic systems: Deputatsky and Ulug-Tanzek deposits, Russia by Holl, R., Borisenko, A., Obolensky, A., Grechistchev, O., and Shcherbakov, Yu., 2000: *Ore Bearing Granites of Russia and Adjacent Countries*, A. Kremenetsky, B. Lehmann, and R. Seltmann, eds.: IGCP-373 Project, Moscow, p. 127-141.
- Structural types and conditions of formation of ore fields and deposits by Seminskyi, Zh.V., 2000: *Irkutsk State University Publishing House*, 261 p. (in Russian).
- Super-large mineral deposits in the border zones between China, Russia, and Mongolia, Yan, Hongquan, Hu Shaokang, and Ye Mao, 1998, in V.S. Chechetkin and G.A. Yurgenson, eds., *The Problems of Geological and Metallogenic Correlation in the Contiguous Regions of Russia, China, and Mongolia: Scientific works of the Second International Symposium on Geological and Metallogenic Correlation in Contiguous Regions of Russia, China, and Mongolia, Krasnokamensk, June 23-29,1997, Novosibirsk, United Institute of Geology, Geophysics, and Mineralogy, Siberian Branch, Russian Academy of Sciences*, p. 24-27.
- Summary of geological-structural and geochemical methods for applied prospecting and exploration by Zorina, L.D., Spiridonov, A.M., Kulikova, Z.I., and Sanina, N.B., 2000, in *Prospecting of Useful Mineral Deposits in Siberia: Tomsk State University Publishing House, Tomsk*, p. 48-52 (in Russian).
- Tectonics and metallogenesis of Mongolia by Badarch, G., Orolmaa, D., Ariunbileg, S., 1999: *Institute of Geology and Mineral Resources, Mongolian Academy of Sciences*, 306 p.
- Temporal periods and duration of formation of Cu-Mo porphyry deposits (Siberia and Mongolia) by Sotnivkov, V.I., Ponomarchuk, V.A., Berzina, A.N., Berzina, A.P., Kiseleva, V.Yu., and Shevchenko, D.O., 1999: *Journal of geoscientific research in Northeast Asia*, v. 2, no. 2, p. 187-191.
- Terranes and accretionary history of the Transbaikalian orogenic belts, by Parfenov, L.M., Bulgatov, A.N., and Gordienko, I.V., 1995: *International Geology Review*, v. 37, p. 736-751.
- Triassic synorogenic sedimentation in southern Mongolia: Early effects of intracontinental deformation, by Hendrix, M.S., Beck, M.A., Badarch G., and Graham, S.A., 1999, in *Paleozoic and Mesozoic tectonic evolution of central Asia from continental assembly to intracontinental deformation: Geological Society of America Special Paper* (in press).

The Western Slope of the Great Xingan Mountains with promising areas for super-large mineral deposits by Yan, Hongquan, Hu, Shaokang, and Ye, Mao, 2000, in Tu Guangzhi, ed., Super-large Mineral Deposits of China: Science Press, Beijing, p. 273-292 (in Chinese).

Tectonic map of Mongolia by Tomurtogoo, O., 2002, Mineral Resources Authority of Mongolia and Academy of Sciences of Mongolia, scale 1:1,000,000, 15 p. (in Mongolian and English).

Tectonics of Mongolia (Brief explanatory notes to the Tectonic Map of Mongolia) by Tomurtogoo, O., 2002, Mineral Resources Authority of Mongolia and Academy of Sciences of Mongolia, 22 p. (in Mongolian and English).

Distribution map of mineral deposits and occurrences in Mongolia by Dejidmaa, G., Bujinlicham, B., and five others, 2002, Mineral Resources Authority of Mongolia, scale 1:1,000,000 (in Mongolian and English).

ABSTRACT VOLUME FOR 1998 CONFERENCE

Metallogeny, Fuel Resources, and Geodynamics of the North Asian Craton and Framing Orogenic Belts by Kuzmin, M.I., Antipin, V.S., Zorina, L.D., Mitrofanov, G.L., and Spiridonov, A.M., eds., 1998, Conference Abstracts, Institute of Geochemistry, Siberian Branch, Russian Academy of Sciences, Irkutsk, 525 p.

ABSTRACT VOLUME FOR 2002 CONFERENCE

Central and Northeastern Asia Tectonics and Metallogeny, by Kuzmin, M.I., and Obolenskiy, A.A., eds., 2002, Conference Abstracts, Institute of Geology, and Institute of Geochemistry, Siberian Branch, Russian Academy of Sciences, Novosibirsk and Irkutsk, 167 p.

GENERAL INTEREST ARTICLES

Metallogenesis of Northeast Asia and Northwest North America, in International Geoscience, by John Reinemund: Geology, August, 1997, p. 27.

Mineral Resources, Metallogenesis, and Tectonics of eastern and southern Siberia, Mongolia, Northeastern China, South Korea, and Japan, by Jean Weaver, Geology, February, 1999, p. 24.

INTERNET/WEB SITES FOR INFORMATION ABOUT CURRENT AND PRIOR PROJECTS

The following U.S.G.S. Internet/Web sites provide summary information for the current project on Northeast Asia, and for the prior project on the Russian Far East, Alaska, and the Canadian Cordillera. Also listed are Web sites for publications for the current and prior projects.

Web Site for Description of Northeast Asia Project

<http://minerals.usgs.gov/west/projects/minres.html>

Web Site for Description of Project on Russian Far East, Alaska, and Canadian Cordillera:

<http://minerals.usgs.gov/west/projects/majdepts.html>

Web Sites for Publications from Project on Northeast Asia:

Preliminary Publications Book 1 From Project on Mineral Resources, Metallogenesis, and Tectonics of Northeast Asia (U.S.G.S. Open-File Report 99-165): <http://geopubs.wr.usgs.gov/open-file/of99-165/>

Web Sites for Publications of Project on Russian Far East, Alaska, and Canadian Cordillera:

Significant Metalliferous and Selected Non-Metalliferous Lode Deposits and Placer Districts for the Russian Far East, Alaska, and Canadian Cordillera: U.S.G.S. Open-File Report 96-513-B: <http://geopubs.wr.usgs.gov/open-file/of96-513-b/>

Summary Terrane, Mineral Deposit, and Metallogenic Belt Maps of the Russian Far East, Alaska, and the Canadian Cordillera: U.S.G.S. Open-File Report 98-136: <http://geopubs.wr.usgs.gov/open-file/of98-136/>

Geographic Information Systems (GIS) Compilation of Geophysical, Geologic, and Tectonic Maps for the Circum-North Pacific: U.S. Geological Survey Open-File Report 99-422: <http://geopubs.wr.usgs.gov/open-file/of99-422/>

PROJECT PROPOSAL WORKSHOPS

November 7-11, 1994: United Institute of Geology and Geophysics, Novosibirsk.

September 9-16, 1995: Geological Institute, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia.

December 10-13 1996: Institute of Geochemistry, Russian Academy of Sciences, Irkutsk, Russia.

December 17-19, 1996: Geological Survey of Japan, Tsukuba Center, Japan.

July 1-3, 1997: Korean Institute of Geology, Minerals, and Materials, Taejeon, Korea.

PROJECT WORKSHOPS

November 4-7, 1997: Institute of Geochemistry, Russian Academy of Sciences, Irkutsk, Russia.

December 5-10, 1998: Institute of Geology and Mineral Resources, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia.

December 9-12 1999: Geological Research Institute, Changchun University of Science and Technology, Changchun, China.

June 6-9, 2000: Geological Survey of Japan, Tsukuba, Japan.

October 16-20, 2000: Far East Geological Institute,
Russian Academy of Sciences, Vladivostok, Russia.
October 22-26, 2001: Institute of Geochemistry, Russian
Academy of Sciences, Irkutsk, Russia.

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Japan	Geological Survey of Japan/AIST
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