Annual Report* of IGCP Project No. 592

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IGCP project short title: “Continental construction in Central Asia”

Duration: 2012-2015

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Date of submission of report: December 14, 2013

Signature of project leader(s):
1. **Website address(es) related to the project**

   - https://sites.google.com/site/igcp592/home or http://igcp592.igm.nsc.ru - official IGCP#592 site
   - http://izk.irkmail.ru/eng.html - website of Meeting #1, Irkutsk, Russia
   - http://www.igc.cas.cn/heil/jldt/201310/t20131008_3944169.html, report of Meeting #2 at the IGG CAS site
   - http://geo.stb.ru/doc/circular-2013-08-2.pdf - website of Meeting #3, Ulan-Ude, Russia
   - http://igq2013.igam.re.kr – website of Meeting #4, Daejeon, Republic of Korea
   - http://www.cvent.com/events/geosciences/2013-conference/event-summary-5cbe5b6c843848df87f293052ac744e0.aspx – website of Meeting #5, Christchurch, New Zealand
   - http://www.nhm.ac.uk/cercams - official website of CERCAMS led by co-leader Reimar Seltmann
   - http://www.igm.nsc.ru/labs/lab212/~safo/ - website of Inna Safonova
   - http://www.iagrhomepage.com/ - website of the International Association for Gondwana Research
   - http://www.conferecnet.org/conference/iccd.htm - website of 2014 meeting in Xi’an, China
   - http://www.convergentmargins.com/ - website of 2014 meeting in Trabzon, Turkey
   - http://www.gondwana15.org/ - website of the 2014 meeting in Madrid, Spain

2. **Summary of major past achievements of the project**

   During the previous year (2012), the IGCP-592 results addressed i) evaluation of juvenile to recycled crust in the CAOB; ii) assessment of accretion as part of continental construction; iii) formation of mineral deposits; iv) environmental impact. The 2012 general achievements were: a) lithostratigraphic comparison of CAOB and WP; b) combination of U-Pb zircon ages with Nd and Hf isotopes for elucidation of source characteristics; c) Early-Middle Paleozoic peak of subduction-accretion related crustal growth in the eastern CAOB; d) combination of geology and petrologic modelling in studying PGE-Ni mineral deposits; e) formation of porphyry deposits by a subduction-related input of juvenile material.

3. **Achievements of the project**

   3.1. **List of countries involved in the project** *( - active this year):*


   3.2. **General scientific achievements and social benefits**

      In 2013, the research activities in the frame of IGCP#592 were performed in four main fields/topics.
      a) Tectonics and geodynamics of the CAOB with special focuses to: i) geodynamic settings of magmatism (Biske et al., 2013; Guy et al., 2014; Kislov, 2013; Shen et al., 2013; Wan et al., 2013; Wang et al., 2013); ii) tectonic patterns formed after ocean closure and post-collapse processes (Gao et al., 2013; Guy et al., 2014; Tian et al., 2013); iii) kinematics of orogeny and accretionary tectonics (Song et al., 2013b; Xu et al., 2013; Zhang et al., 2013); iv) lithostratigraphy-based tectonic reconstructions (Gao et al., 2013; Novikov, 2013); v) intra-plate rifting (Rasskazov et al., 2013; Novikov et al., 2013).
      b) Geochronology of major magmatic and tectonic events of the CAOB with special focuses to: i) dating of granitoids and shear zones (Guy et al., 2014; Konopelko et al., 2013; Zhang et al., 2013); ii) age and juvenile vs recycled character of CAOB basement terranes (Hara et al., 2013; Huang et al., 2013; Kim et al., 2013; Kröner et al., 2013; Wang et al., 2013; Zhang et al., 2013); iii) provenance analysis of metasediments (Song et al., 2013a;
Form V

Zhu et al., 2014); iv) secular changes of crustal growth from the Archean to the Phanerozoic (Kim et al., 2013; Kröner et al., 2013; Kuski et al., 2013; Zhang et al., 2013).

3.3. List of meetings with approximate attendance and number of countries
1. 2nd symposium and training school for young scientists “Continental rifting and accompanying processes”, Irkutsk, Russia, August 20-23, 2013; about 80 participants from 6 countries.
2. International Field Trip and Workshop “Beishan Orogen in NW China: accretionary tectonics, magmatism, eclogite and granulite complexes”, Urumqi-Hami-Dunhuang, China, August 22-27, 2013; about 60 participants from 16 countries.
3. IV conference “Geodynamics and metallogeny of NE Asia”, Ulan-Ude, Russia, August 26-31, 2013; about 70 participants from 3 countries.
4. The 2013 IAGR Annual Convention and 10th International Symposium on “Gondwana to Asia”, Daejeon, Republic of Korea, about 80 participants from 14 countries.
5. Session “IGCP 592: Accretionary Belts of the SW Pacific Central Asia” at the GSNZ 2013 Annual Conference, Christchurch, New Zealand, November 24-27, 2013; 30 participants from 4 countries.

3.4. Educational, training or capacity building activities
1. Field training on mineral deposits; Khivy-Sultan-Uvais, Uzbekistan; 9 participants from Uzbekistan, Norway and UK; supervisor: Prof. Reimar Seltmann; April 26 – May 3, 2013;
2. Field training on OPS; Mino accretionary complex, Inuyama area, Japan; 5 participants from Japan, Russia and USA; supervisor: Prof. Shigenori Maruyama; May 12-13, 2013;
3. Seminar on the CAOB and WP; University of Tokyo, Tokyo, Japan; 12 participants from Japan and Russia; supervisors: Prof. Tsuyoshi Komiya, Dr. Inna Safonova; May 29, 2013;
4. Field training on mineral deposits; Irtysh shear zone, Oskemen, Kazakhstan; 9 participants from Kazakhstan and UK; supervisor: Prof. Reimar Seltmann; June 15-30, 2013;
5. Best poster challenge at the 10th IAGR Symposium; KIGAM, Daejeon, Korea; 34 PG and PhD students from China, Japan and Republic of Korea; supervisor: Prof. Wilfred Winkler; October 2, 2013;
6. Field training for young scientists; Lake Baikal, Russia; supervisor: Prof. S. Rasskazov; August 20-23.
7. Short course “Geodynamics & Metallogeny of central Asia”; EKSTU, Oskemen, Kazakhstan; 8 PhD students; supervisor: Reimar Seltmann; October 6-19, 2013.
8. Short lecture course on environmental problems connected with geological processes in Central Asia; Kyzyl-Orda University, Kazakhstan; supervisor: Prof. S. Krivonogov, December 2-16, 2013.

3.5. Participation of scientists from developing countries, young and women scientists

The geographic position of the major areas of interest (Central and East Asia) determines the high portion of project participants from developing countries, namely, China, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Uzbekistan, plus participants from developing countries outside the CAOB but involved into its study: Bangladesh, India, Indonesia, Nepal, Thailand, Vietnam; in average 85% of totally about 400 participants of the 2013 IGCP#592-related meetings. Among those supported by IGCP#592 are about 30% female scientists and 40% young scientists. 90% of participants supported by IGCP#592 are of these 3 categories, i.e. female / young scientists and from developing countries (see below Paragraph 7 and Form III).

3.6. List of most important publications

Conference proceedings of the meetings sponsored or co-sponsored by IGCP#592


Peer-reviewed papers and extended abstracts (pr – peer-reviewed)


11. Hara, H., Kurihara, T., Tsukada, K., Kon, Y., Uchino, T., Suzuki, T., Takeuchi, M., Nakane, Y., Nurmakhnaan, M., Chuluun, M.et al., 2013. Provenance and origins of a Late Paleozoic accretionary complex within the

3.7. Activities involving other IGCP projects, UNESCO, IUGS or others

1. The IGCP#592 activities involved the programs of IAGR (Meeting #4 in Daejeon), CERCAMS (Meeting #2 in NW China), and Russian Mineralogical Society (Meeting #3 in Ulan-Ude - Baikal).
2. IGCP #592 and IGCP #628 (The Gondwana Map) co-chaired sessions at 10th Int'l Symp. “Gondwana to Asia” (October 2013, Korea). Two joint meetings in Madrid and Beijing are planned for 2014.
3. Several IGCP-592 project members participate also in activities of IGCP-599 “The Early Earth”.

4. Activities planned

4.1. General goals

1. The increase the number of meetings (seven planned for 2014)
2. Expanding contacts in the Australasian region to ensure comparison of CAOB with WP.
3. To ensure if accretionary processes operated as early as in the Archean;
4. To determine whether crustal growth has changed since the Archean by evaluating the portion of juvenile crust by Hf isotopes of zircons and the portion of tectonically eroded TTG-type crust.

4.2. Tentative list of specific meetings and field trips (please list the participating countries)

1. Int'l Conf. "Continental Dynamics" and Field Trip to the Qinling Orogen, NW Univ. Xi'an, China, April 26-28, 2014; Australia, China, Japan, India, Russia; [http://www.conferecnenet.org/conference/iccd.htm](http://www.conferecnenet.org/conference/iccd.htm)
2. Int. Workshop "Convergent Margins" (with a short course for students) and Field Trip to the eastern Pontides, Karadeniz Technical University, Trabzon, Turkey, May 21-23, 2014; Australia, Canada, China, Germany, Russia, Turkey, USA; [http://www.convergentmargins.com/](http://www.convergentmargins.com/)
4. II Int'l Conf. "Granites and Earth’s Evolution" and Altai Field Trip, IGM SB RAS, Novosibirsk, Russia, August 17-20; China, Japan, Russia; [https://sites.googlegroups.com/site/igcp592/milestone-meetings/](https://sites.googlegroups.com/site/igcp592/milestone-meetings/)
5. IAGOD - 14th Quadrennial Int'l Association on the Genesis of Ore Deposits Symposium "Mineral Resources: Discovery and Utilization", Kunming, China, August 19-22; Australia, Canada, China, Czech, Germany, Japan, India, Iran, Russia, UK, USA; [http://www.14iagod.org/en/](http://www.14iagod.org/en/)