



International Lithosphere Program

• Activity Report 2020 -

Task Force Name : Lithosphere structure and mineral resources
(Task Force No.) :
Task Force Leader(s) : Irina Artemieva, Shuwen Dong, Richard Ernst

1. Highlights of recent ILP Task Force work/results

The activities of 2020 were hampered by COVID-19, since for 2020 the planned activities were centered at launching the TF's active phase at meetings during the year 2020:

- TF meeting workshop at the International Geological Congress (India, March 2020) – IGC has been moved to 2021;
- A dedicated session “Lithosphere structure and mineral resources” at the international conference DEEP-2020 (Beijing, China, November 2020) – DEEP-2020 has been moved to November 2021;
- TF participation in the TARGET-2020 conference (“Targeting for a New Era of Discovery”) associated with 6th International Archean Symposium (Perth, Australia, July 2020) – TARGET-2020 and 6IAS has been moved to July 2022.

TF leader R. Ernst published a 500 page long volume with American Geophysical Union in Geophysical Monograph Series on Large Igneous Provinces (2020), which make one the key target geodynamic settings for a large group of mineral resources in intraplate settings.

TF leader I. Artemieva was announced as the awardee of the EGU-21 (European Geosciences Union) Augustus Love medal for research results closely associated with the TF goals.

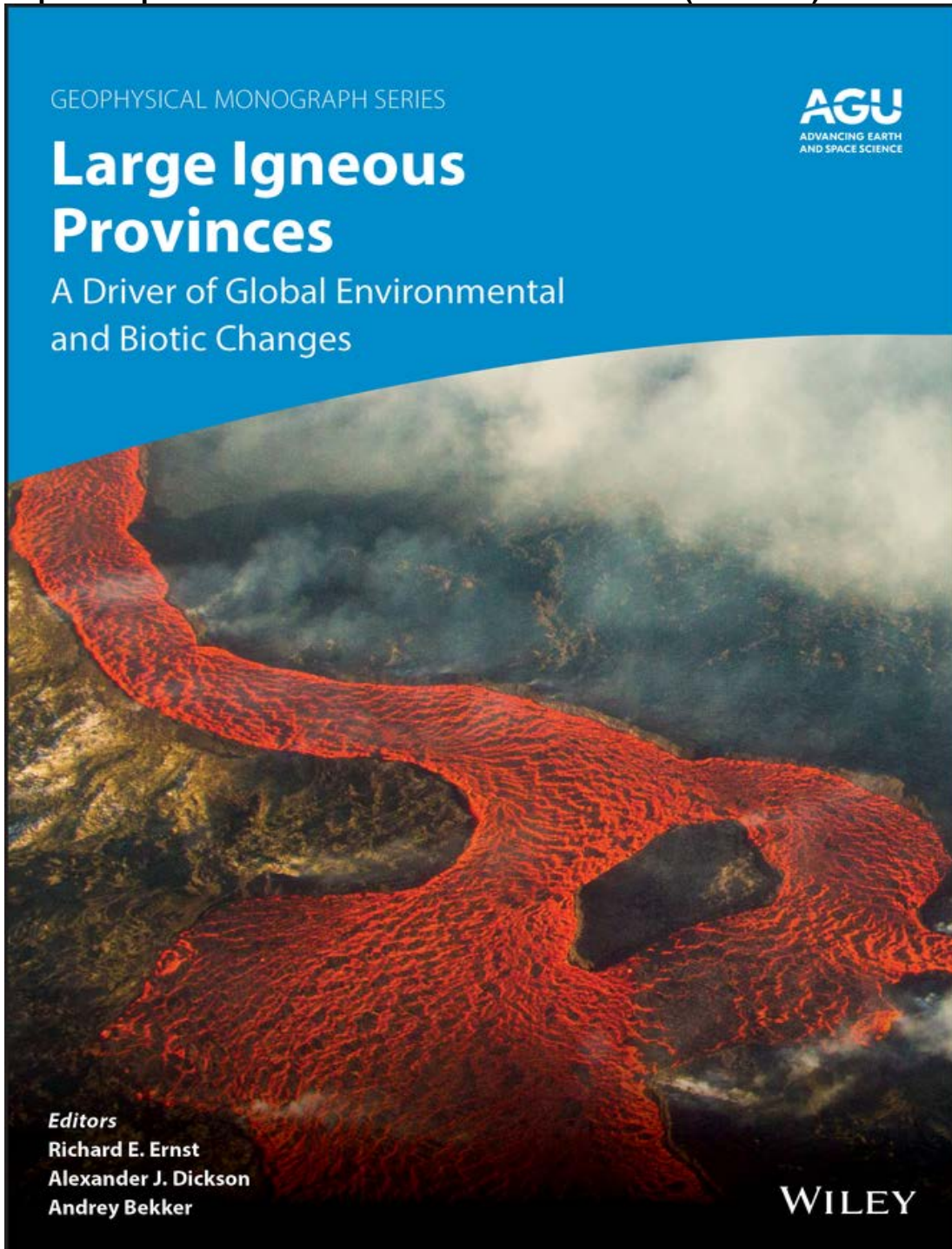
TF leader S. Dong received funding for the 2nd phase of the Chinese national program SinoProbe (2020) which includes a significant component within the TF's framework and goals.

2. Presence at international meetings/workshops (this year)

- Because of COVID-19, it was not practically possible to have a session at international meetings of 2020. See part 1.
- The uncertainty with COVID-related limitations to major international conferences in 2020 hampered a TF session proposal submission to GSA-2020 (Geol. Soc. of America), as planned originally.
- Dedicated TF workshops were not possible for the same reason.

- An invited presentation by TF leader I. Artemieva was made at international zoom conference “Geoheritage in southern Africa” organized by the Geological Society of South Africa (September 2020).

3. Important publications of ILP Task Force members (max. five)



Ernst R.E., Dickson A.J., Bekker, A. "Large Igneous Provinces: A Driver of Global Environmental and Biotic Changes". American Geophysical Union. Geophysical Monograph Series, v. 255, 522 pp. DOI: 10.1002/9781119507444, 2020.

Artemieva I.M., Thybo H. "Continent size revisited: Geophysical evidence for West Antarctica as a back-arc system". Earth-Science Reviews, 202, 103106, DOI: 10.1016/j.earscirev.2020.103106, 2020.

Dong S., Li J., Cawood P.A., Gao R., Zhang Y., Xin Y. "Mantle influx compensates crustal thinning beneath the Cathaysia Block, South China: Evidence from SINOPROBE reflection profiling". Earth and Planetary Science Letters, 544, 116360, DOI: 10.1016/j.epsl.2020.116360, 2020.

Li J., Cawood P.A., Ratschbacher L., Zhang Y., Dong S., et al. "Building Southeast China in the late Mesozoic: Insights from alternating episodes of shortening and extension along the Lianhuashan fault zone". Earth-Science Reviews, 201, 103056, DOI: 10.1016/j.earscirev.2019.103056, 2020.

Xia B., Thybo H., Artemieva I.M. "Lithosphere mantle density of the North China Craton". Journal of Geophysical Research: Solid Earth, 125 (9), e2020JB020296. DOI: 10.1029/2020JB020296, 2020.

4. New contacts (this year)

TF's development was hampered by COVID-19; TF is establishing new contacts, also with other TFs.

Among important new contacts is Academician Prof. Zengqian Hou (China), who is Deputy Director of National Science Foundation of China and Director of Institute of Geology, Chinese Academy of Geological Sciences. Prof. Hu has joined TF as a convener of the TF's session at DEEP-2020 (Beijing, China).

TF leader I. Artemieva was elected as Council member of the International Heat Flow Commission - an international professional network with goals closely linked to TF, and therefore important for the TF's partnership and networking.

5. Usage of ILP funding (this year)

NONE.