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## Review of the Dissertation Thesis “Silurian and Devonian volcanism in the Prague Basin” submitted by Mgr. Zuzana Tasáryová

I was asked by the Faculty of Science of the Charles University in Prague to evaluate critically the Dissertation thesis submitted by Mgr. Zuzana Tasáryová. It is a great honour and pleasure to fulfil this request.

Mgr. Zuzana Tasáryová submitted a cumulative PhD thesis dealing with a particularly broad spectrum of geoscientific problems related to the Silurian and Devonian volcanism in the Prague Basin. The thesis consists of four published and reviewed articles, and one article in a matured stage of preparation, which I assume will need only „minor revision“ to be published. Mgr. Tasáryová is the first author of three articles.

To avoid a ‘re-review’ of peer-reviewed articles I will organize my report in the following points:

- Petrology and geochemistry
- Mineralogy
- (Palaeo)magnetic studies.

### Petrology and geochemistry

The approach is clearly described and broad enough to avoid any discussion too much focused on scientific prejudices to be *en vogue*. The nature of the samples studied sets clear limits regarding the portfolio of elements and processes to be discussed. Especially the influence of different alteration processes was discussed in a very scrupulous way.

However a discussion of other possibilities to deal with these challenges is desirable. Could a mass balance computed for „fresh“ and altered rocks allow the interpretation even of the excluded samples? What are the arguments for and against such an approach?

The interpretation of the used trace element data and ratios as well as of the Nd isotope data are well above the usual approach of „putting the data into all available diagrams“, leave nearly nothing to be discussed.

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The close integration of stratigraphic and palaeontological as well as mineralogical and petrographical data was successful.

#### Mineralogy

The intense discussion of mineralogical features of low temperature alteration processes in volcanic rocks closely connected to a thoroughly geochemical and petrological interpretation is still too seldom exercised. The example of the Ba- and Sr-rich feldspars is comprehensively described. It could become a target for more intense studies of the metasomatic processes using more sophisticated microanalytical methods like TEM or Micro-Raman spectroscopy. However one curious question remains open to the reviewer – How was this remarkable sample found and defined?

#### (Palaeo)magnetic studies

The interdisciplinary approach is reflected in the palaeomagnetic studies too. I was only able to evaluate the mineralogical part of these papers and found it profound and sufficient for the discussed problems.

I hope that Mgr. Zuzana Tasáryová and her co-workers will be able to publish a review paper which includes all facets of the topics mentioned in this Dissertation thesis.

**I consider the PhD thesis submitted by Mgr. Zuzana Tasáryová as suitable for the defence and state without reservation that it fulfils the criteria necessary for obtaining a PhD degree.**

Dresden the 22<sup>nd</sup> of August 2016

Dr. Axel Renno