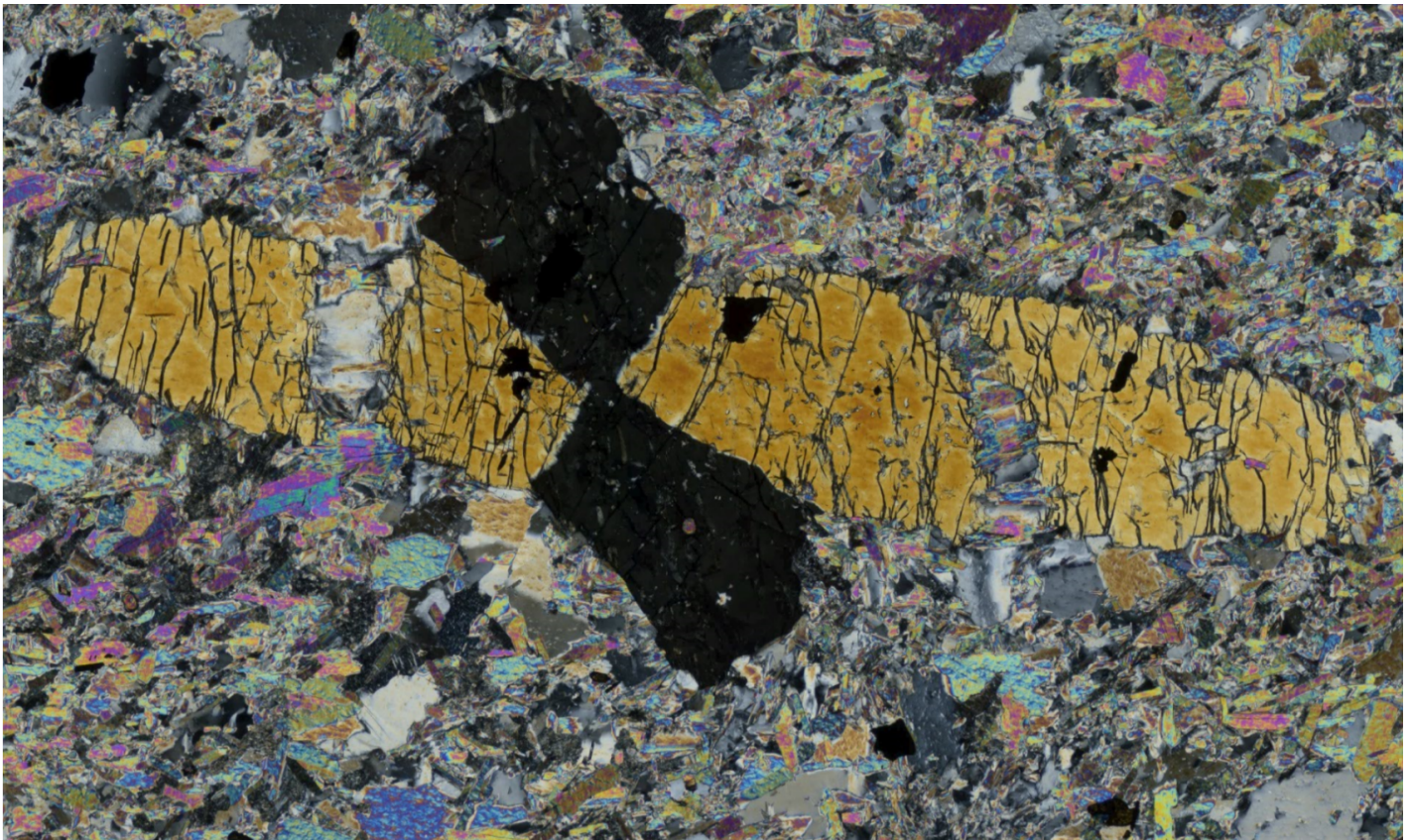


Mineralogical Society



# **Metamorphic Studies Group**

**40th anniversary  
Research in Progress meeting**



**29–31 March 2021**

**MSG 2021 CONFERENCE - SCHEDULE**

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Notes:

\*Keynote/invited/prize talk (30 minutes)

All times = British Summer Time = BST = GMT+1

All sessions hosted on Zoom except for the poster sessions, which will be on Gather.Town



## Tectonic evolution of the late Paleozoic basement in western Patagonia region (Argentina-Chile)

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Patagonia constitutes a vast area located in the southern extreme of the South American Continent, where the igneous-metamorphic basement presents a complex evolution during the Paleozoic. The oldest outcrops are in the northeastern region near the Atlantic Ocean and correspond to the Cambrian - Ordovician Orogens [1,2]. In contrast, its western region comprises basement units of Silurian – Devonian ages, showing that orogen-development processes migrated towards the southwest of Patagonia [3,4,5]. The last widespread igneous-metamorphic events record the Late Paleozoic Gondwanide Orogeny and are extensively distributed along the Patagonia's boundaries [2,6,7,8]. However, in the western boundary of the Patagonian region, only a few P-T-t path reconstructions were made for the late Paleozoic metamorphic basement [6,7,9,10]. These evolutionary P-T-t models were linked with the subduction of the Proto-Pacific Ocean plate along an active continental margin in southwestern Gondwana. The present contribution aims to review the different geodynamic conditions of the western Patagonia region and establish their relationship with the paleotectonic evolution during the late Paleozoic times.

The late Carboniferous metamorphic complexes exposed at the Andean Cordillera in western Patagonia achieve blueschists-amphibolite facies conditions developing HP-LT progressive metamorphic paths [7,9,10]. The uplift beginning of these accretionary prism-arc basements was coeval with the arc migration throw inboard the continent during early Permian times [6,7]. In this extra-Andean region, stromatic migmatites attained MP-HT conditions at the beginning of the Permian magmatic arc development [6,11]. Finally, the magmatism migration continued far inside the continent during the rest of the Permian period [2,11]. Further P-T-t estimations of these basement regions will improve the knowledge of the late Paleozoic evolution in the Patagonia region and its relationship with the paleotectonic subduction process.

### References:

- [1] González et al. (2019) *Gondwana Research* 63:186-225
- [2] Pankhurst et al. (2006) *Earth-Sci Rev* 76:235-257
- [3] Marcos et al. (2018) *Geoscience Frontiers* 9 (2), 485–504.
- [4] Renda et al. (2020) *Journal of South American Earth Sciences* 106:103045
- [5] Suarez et al. (2019) *Journal of South American Earth Sciences* 95.102256.
- [6] Marcos et al. (2020) *Lithos* 376-377:105801
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- [11] Gregori et al. (2020) *International Geology Review* 1-25.