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The AuScope Geochemistry Laboratory Network Project and the Building of the AusGeochem Data Repository

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AusGeochem [1] is an open access geochemical data repository supported by AuScope via funding from the Australian National Collaborative Infrastructure Research Infrastructure Strategy (NCRIS). The AusGeochem concept was developed in response to open community workshops held around Australia during a 2018-19 consultation process involving academia, industry and geoscience surveys. Key issues identified where the need for improvements in: (1) collaboration between geochemistry laboratories in the areas of asset procurement, maintenance and end user support; (2) cooperation between universities, geoscience surveys and industry in creating geochronology and isotopic maps at a national scale; and (3) curation and preservation of sample and data collections of national/global significance.

To address some of these issues, AuScope supported a new, grassroots community network project led by a consortium of geochemistry laboratories at Curtin University, Macquarie University and the University of Melbourne. The consortium partnered with Lithodat Pty Ltd, an Australian company specialising in spatial geoscience data management, to build a collaborative platform for collating, preserving, and disseminating geochronology and isotopic data aligned with FAIR principles. The broader geochemistry community was consulted via the establishment of Expert Advisory Groups in the areas of SHRIMP U-Pb geochronology, Ar-Ar geochronology, LA-ICP-MS and low temperature thermochronology (fission track and (U-Th)/He). The AusGeochem platform was successfully launched for community use in December 2021 [2].

During 2022-23, the AuScope Geochemistry Network (AGN) consortium will expand by including new "data partner" laboratories at several universities across Australia. Museums Victoria will also join as a "collections partner" by registering its unique collection of rock and mineral samples for the purpose of making it discoverable and accessible to the research community. The AGN+ team will also be working to: (1) achieve CoreTrustSeal certification for AusGeochem, (2) develop open REST API interfaces to enable interoperable use and reuse of repository data, and (3) contribute to the development of interoperability standards for geochemical data to enable machine-to-machine exchange and integration of geochemical data via the OneGeochemistry Initiative.

[1] Boone et al (2022). AusGeochem: An Open Platform for Geochemical Data Preservation, Dissemination and Synthesis. *Geostandards and Geoanalytical Research*, https://doi.org/10.1111/ggr.12419

[2] https://www.auscope.org.au/ausgeochem (accessed 1 March 2022).