

**The Cinq–Cerf gneiss: evidence for polycyclic reworking
of the westernmost Avalonian basement in the Newfoundland Appalachians**

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The Cinq–Cerf gneiss is part of the westernmost extent of the Late Precambrian–Early Ordovician basement block of the Hermitage Flexure. U–Pb ages from the previously undated Cinq–Cerf gneiss provide a strong link with the Precambrian rocks of Grey River (Hermitage Flexure) and the Connaigre peninsula (Avalon Zone *s.s.*).

The youngest unit in the Cinq–Cerf complex is a variably deformed 431.5 ± 1 Ma granite–granodiorite with amphibolite and gneissic enclaves, cross-cut by mafic dykes deformed in upper greenschist facies (420 Ma, titanite). Syn-magmatic deformation followed by variable greenschist facies mylonitization mimic a high-grade gneissic complex. The 431

Ma granite intruded into older rocks, including weakly deformed metagabbro/diorite ($557+14/-5$ Ma) and hornblende-bearing granodiorite ($584+7/-6$ Ma). The gneissic fabric in a highly strained $675+12/-11$ Ma granitic orthogneiss is cross-cut by the 431 Ma granite. This observation, coupled with the preservation of primary magmatic features in the 584 Ma granodiorite, suggests an intense 675 to 584 Ma deformational event.

Volcanism at the base of the nearby low-grade, Whittle Hill sandstone was coeval with the intrusion of the 584 Ma granodiorite, raising the possibility of a basement-cover relationship with the Cinq–Cerf gneiss. This Late Precambrian

volcanosedimentary sequence was intruded by Penobscottian (499-494 Ma) plutons, suggesting the involvement of Avalonian rocks (*s.s.*) in the Early Ordovician evolution of the peri-

Gondwanan margin of the Iapetus Ocean in the Newfoundland Appalachians.