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Late Jurassic Sedimentation in the Boreal-Tethyan Seaway: climate modelling, geochemistry, and petrography of the Kimmeridge Clay Formation

ELIZABETH FILIZ LINDSAY ATAR

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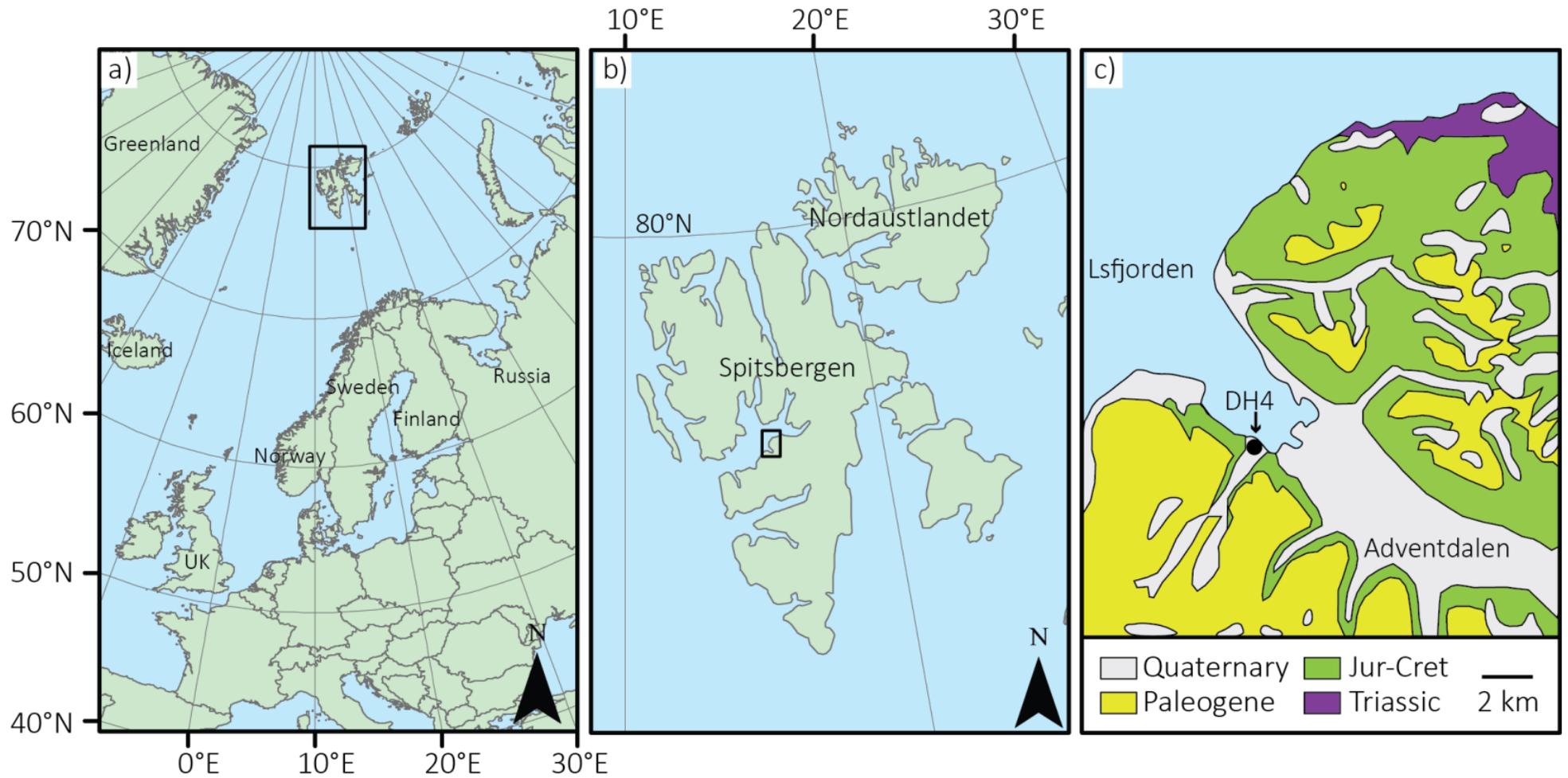
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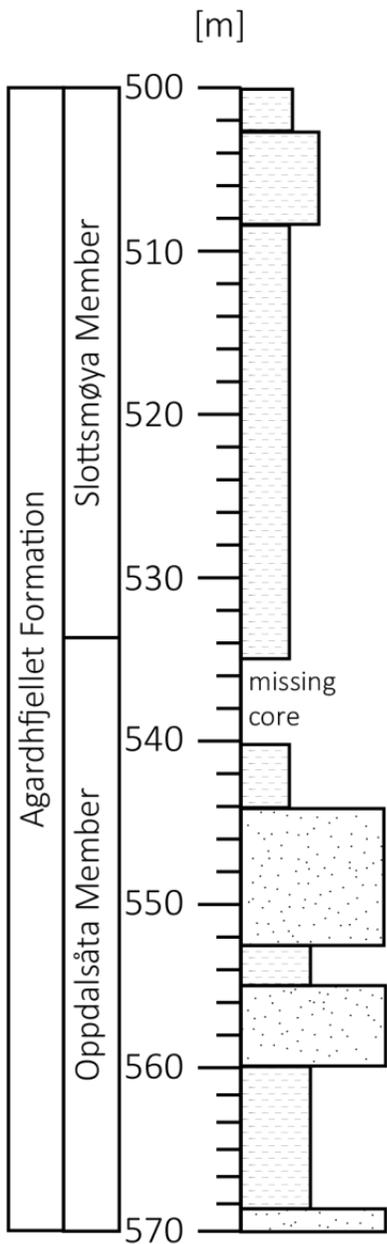
DH4 petrography



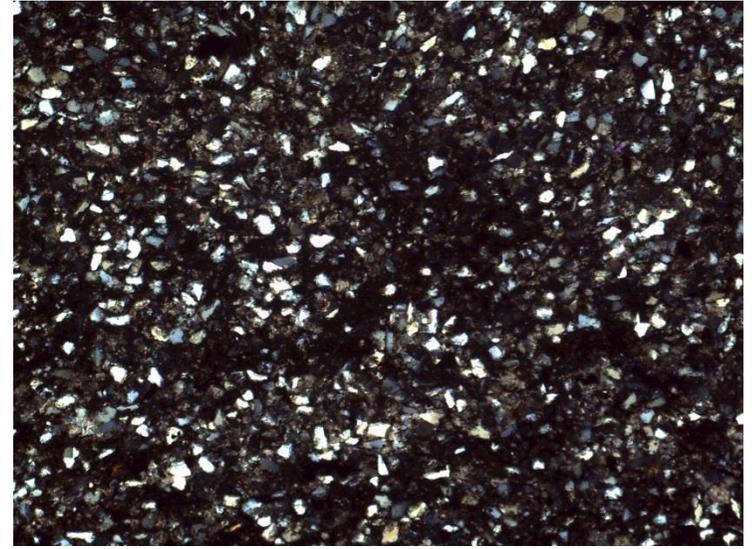
a) Map showing the position of the Svalbard Archipelago (black box) in the Arctic Circle. b) Location of the Adventdalen (black box) on Spitsbergen Island. c) Location of the DH4 well on an Adventdalen geological map. Redrawn after Koevoets et al. (2016)

Depth (mbs)	lithostratigraphic unit		Petrographic Description	
	Formation	Member	Facies	notes
504.52	Agardhfjellet	Slottsmøya	mSs	
504.75	Agardhfjellet	Slottsmøya	mSs	parallel lamination, erosional surface
507.00	Agardhfjellet	Slottsmøya	mSs	lenticular fabric (mud and sand lenses)
512.25	Agardhfjellet	Slottsmøya	sMs	peloidal lithic clasts
514.00	Agardhfjellet	Slottsmøya	sMs	
515.25	Agardhfjellet	Slottsmøya	mSs	
516.24	Agardhfjellet	Slottsmøya	sMs	
518.50	Agardhfjellet	Slottsmøya	mSs	lenticular fabric (mud and sand lenses)
519.25	Agardhfjellet	Slottsmøya	mSs	discontinuous wavy non parallel lamina
522.75	Agardhfjellet	Slottsmøya		wavy continuous parallel lamina
523.25	Agardhfjellet	Slottsmøya	mSs	
526.25	Agardhfjellet	Slottsmøya		
529.50	Agardhfjellet	Slottsmøya	mSs	lenticular fabric (mud lenses)
530.50	Agardhfjellet	Slottsmøya	mSs	parallel lamination
531.00	Agardhfjellet	Slottsmøya	mSs	discontinuous, wavy, non-parallel lamina
535.75	Agardhfjellet	Slottsmøya	mSs	
540.26	Agardhfjellet	Oppdalsåta	mSs	
540.50	Agardhfjellet	Oppdalsåta	mSs	
541.00	Agardhfjellet	Oppdalsåta	cMs	small calcite veins
542.75	Agardhfjellet	Oppdalsåta	cMs	occasional silt lenses
547.50	Agardhfjellet	Oppdalsåta	Ss	
548.25	Agardhfjellet	Oppdalsåta	mSs	discontinuous, wavy, non-parallel lamina
551.50	Agardhfjellet	Oppdalsåta	mSs	discontinuous, wavy, non-parallel lamina
552.00	Agardhfjellet	Oppdalsåta	mSs	occasional mud lenses
552.75	Agardhfjellet	Oppdalsåta	mSs	lenticular fabric (mud lenses)
553.24	Agardhfjellet	Oppdalsåta	mSs	
553.75	Agardhfjellet	Oppdalsåta	mSs	lamination
555.75	Agardhfjellet	Oppdalsåta	mSs	lenticular fabric (silt lenses)
556.75	Agardhfjellet	Oppdalsåta	Ss	discontinuous, wavy, non-parallel lamina
558.50	Agardhfjellet	Oppdalsåta	mSs	
559.75	Agardhfjellet	Oppdalsåta	Ss	mud lenses
561.05	Agardhfjellet	Oppdalsåta	mSs	mud lenses
562.00	Agardhfjellet	Oppdalsåta	mSs	discontinuous, wavy, non-parallel lamina
563.25	Agardhfjellet	Oppdalsåta	mSs	discontinuous, wavy, non-parallel lamina

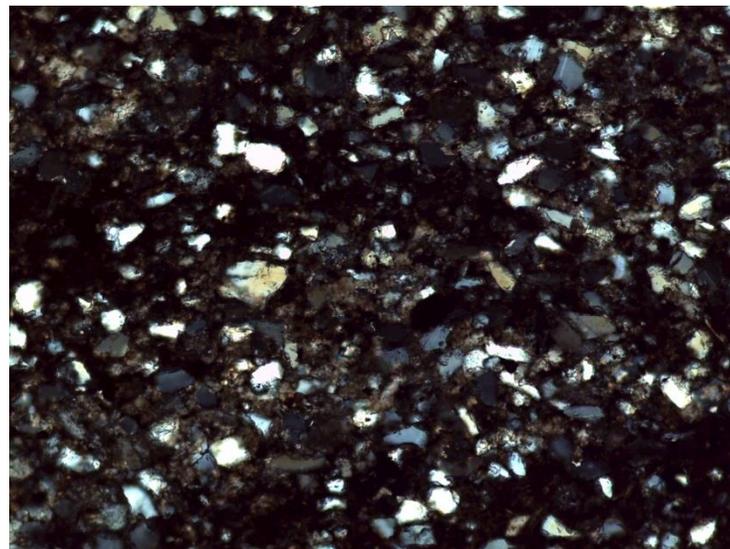
DH4 504.52



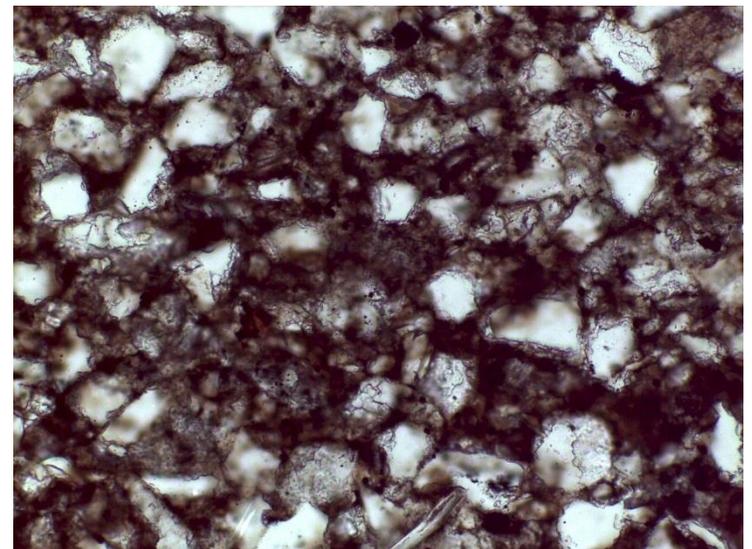
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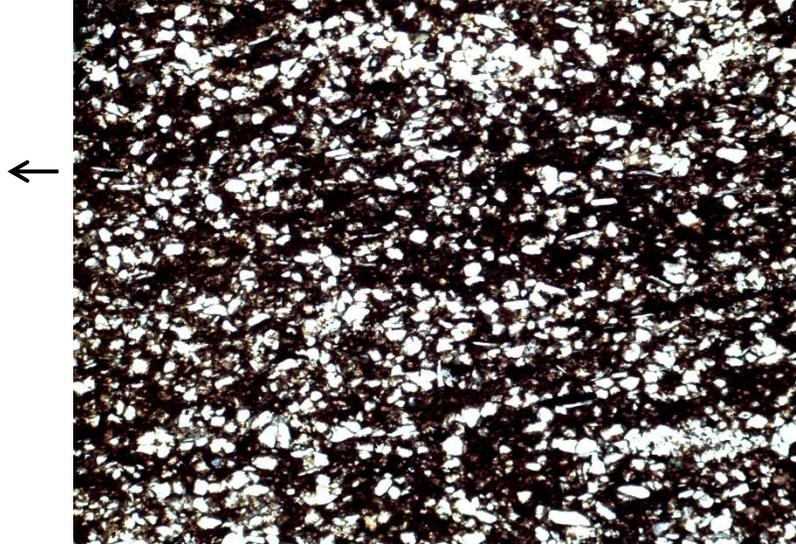
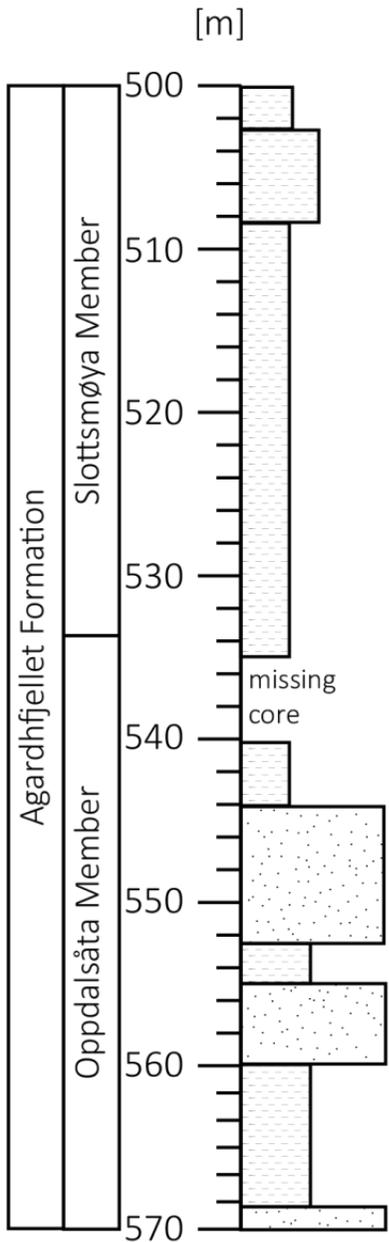
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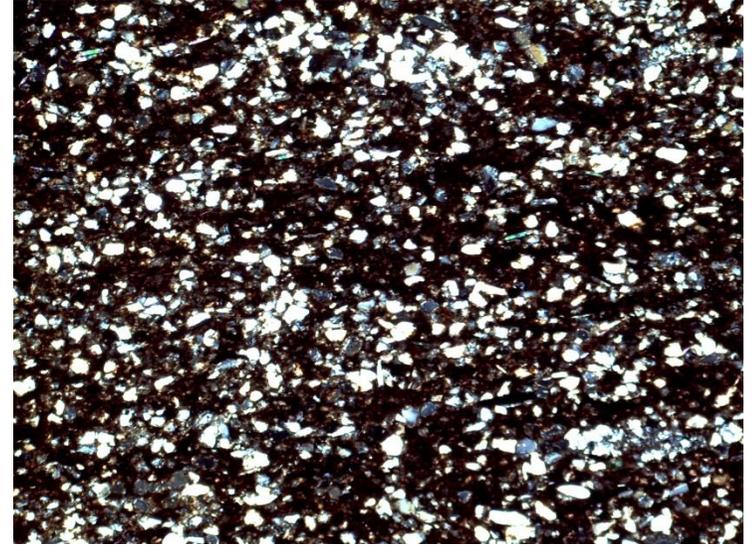
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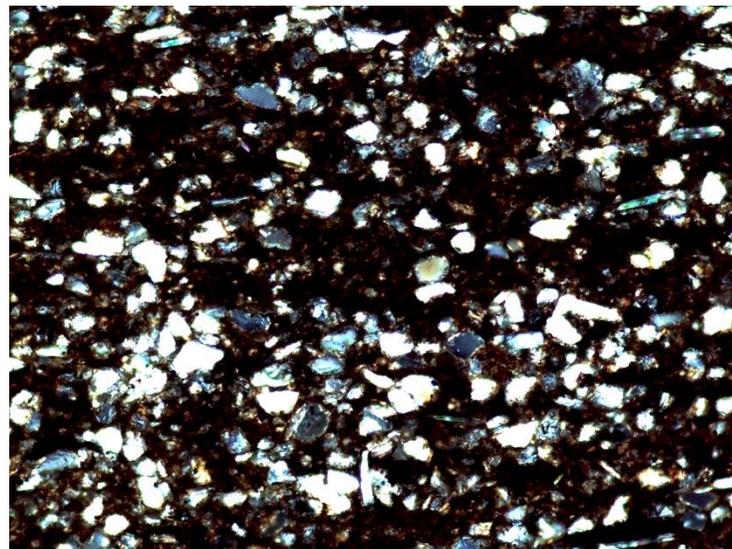
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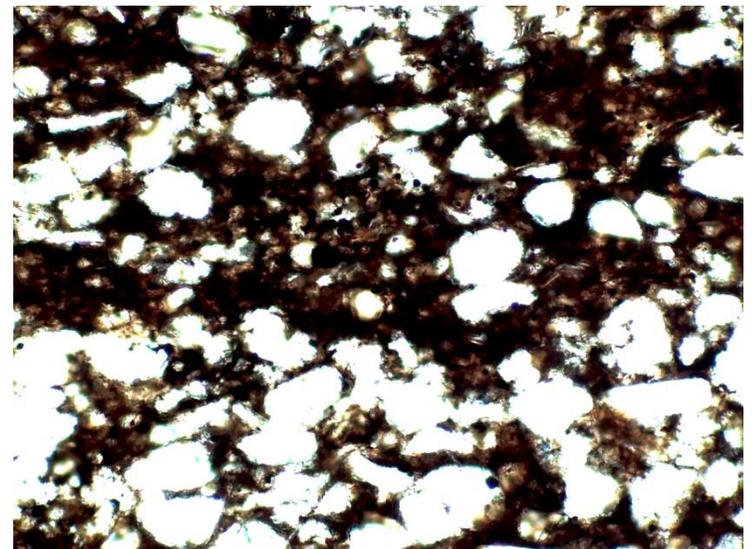
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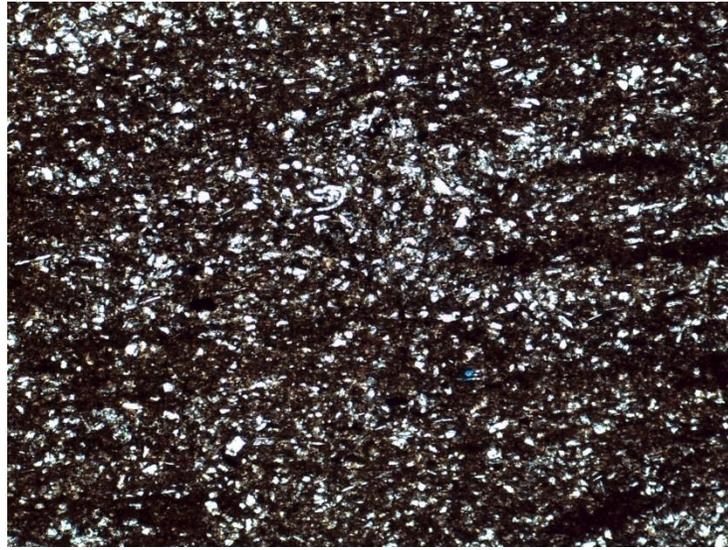
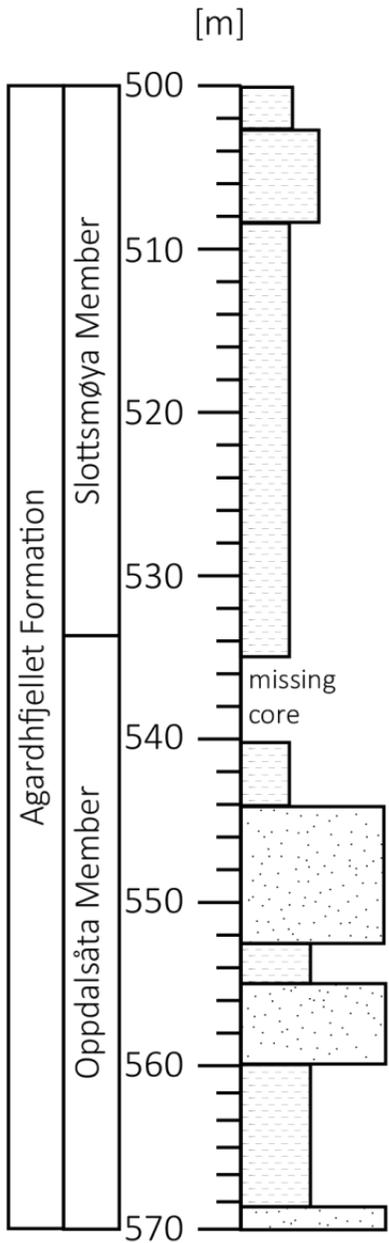


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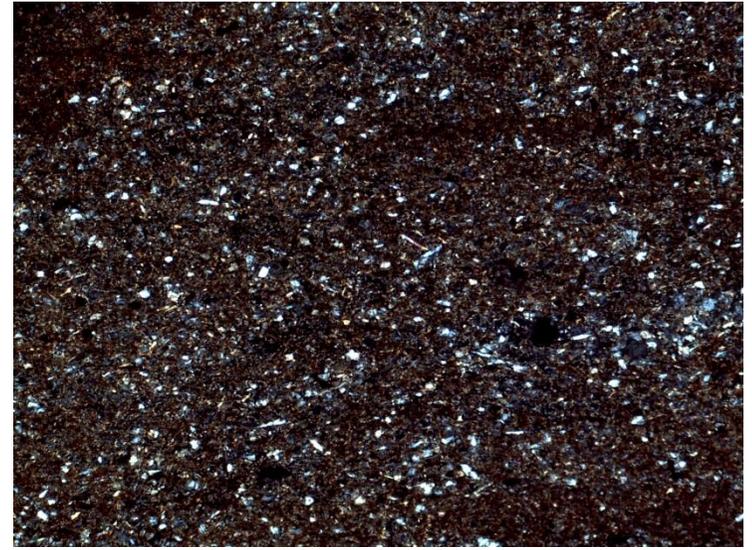


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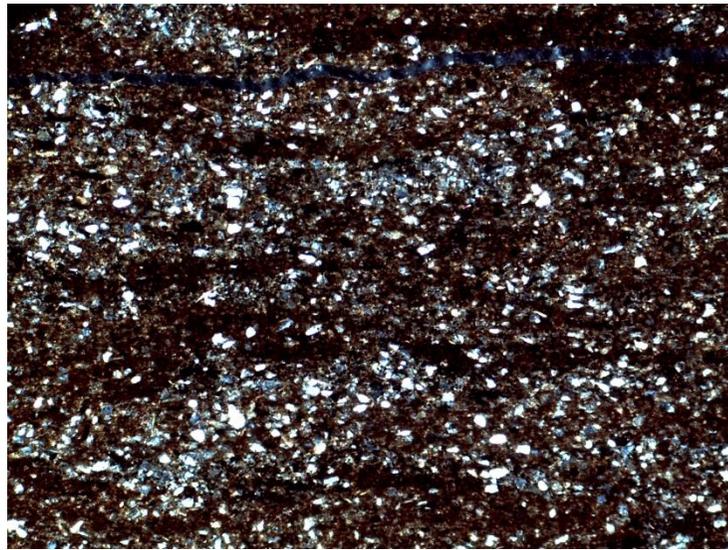
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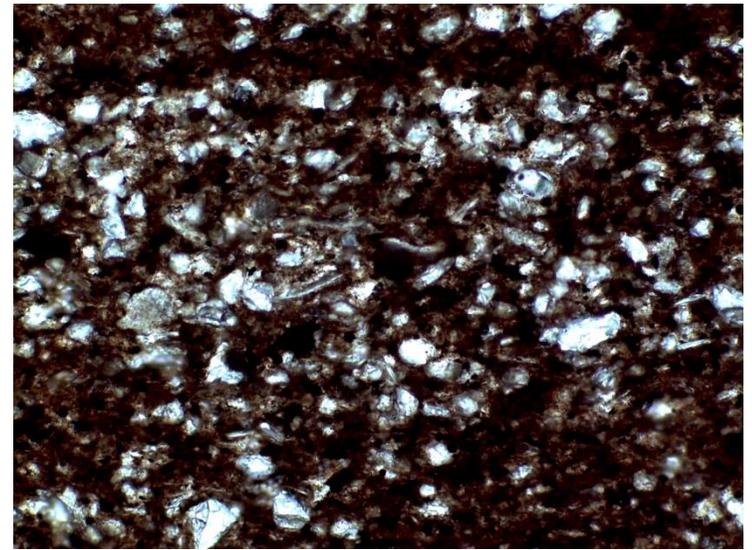
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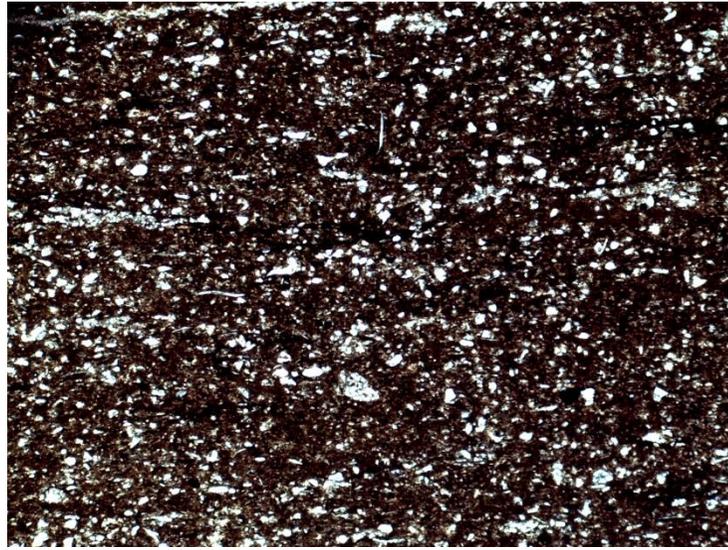
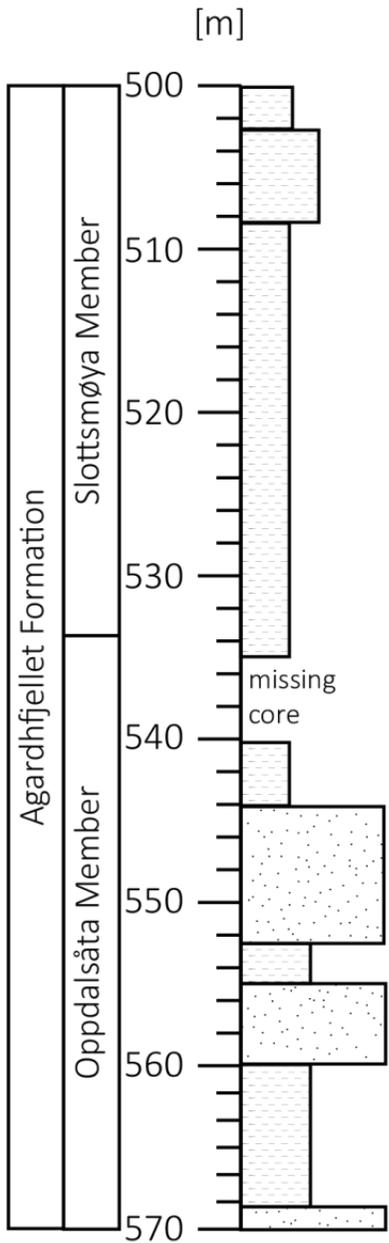


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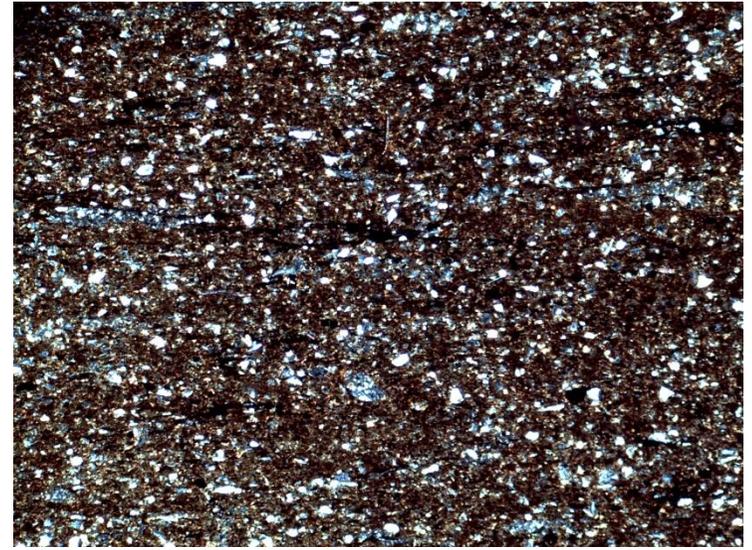
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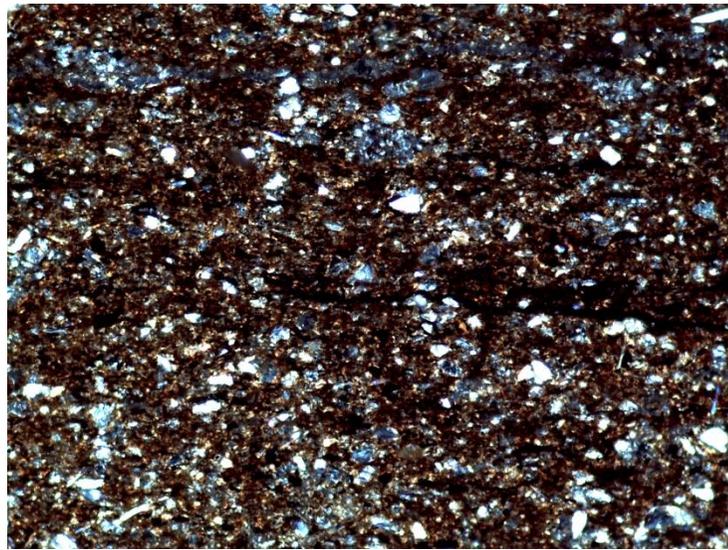
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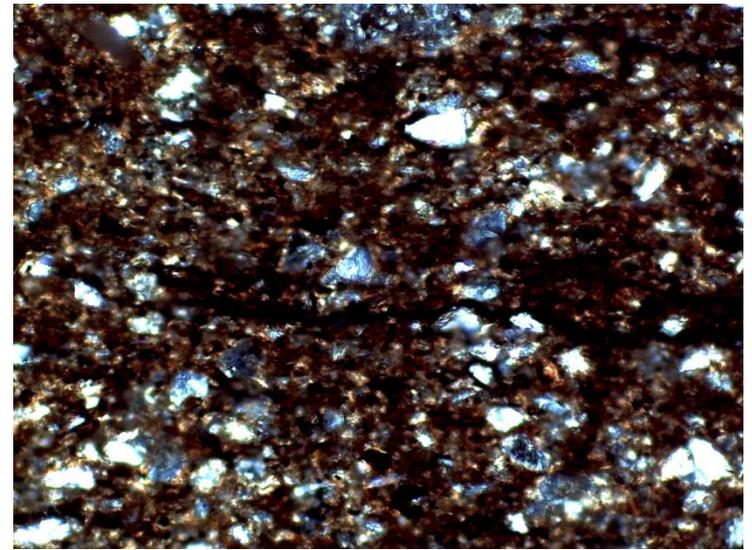
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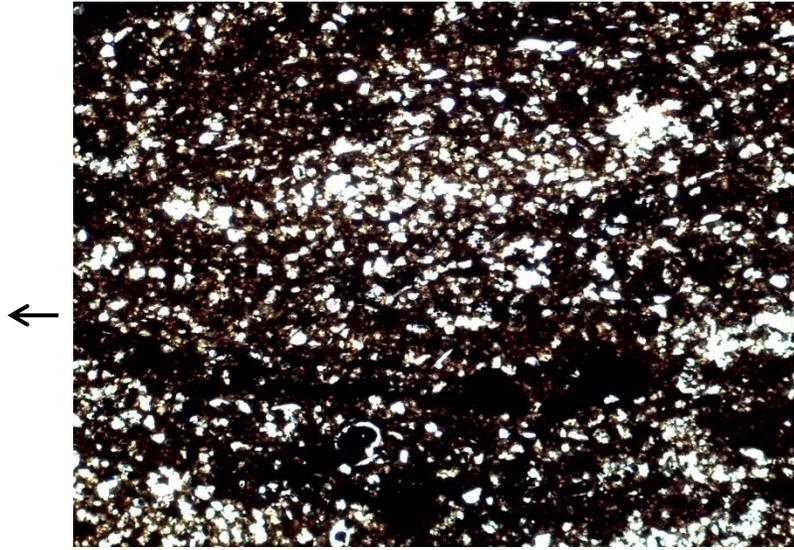
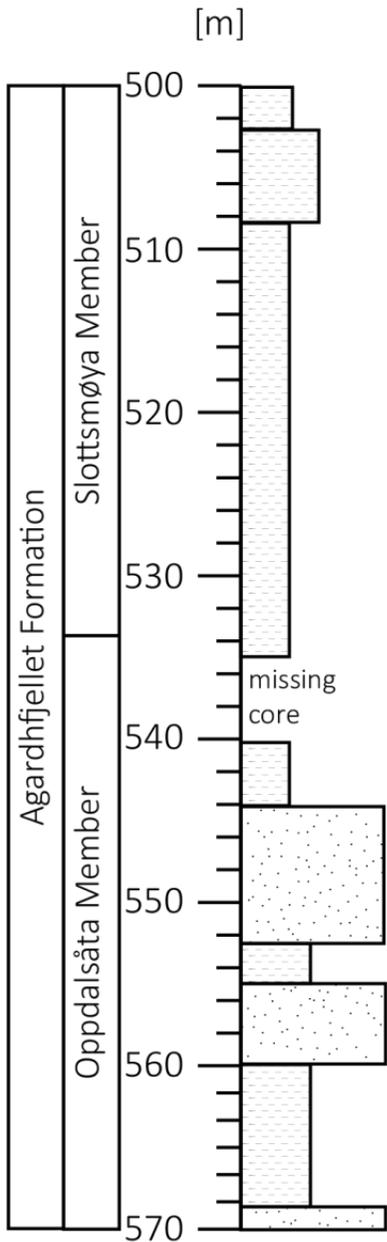


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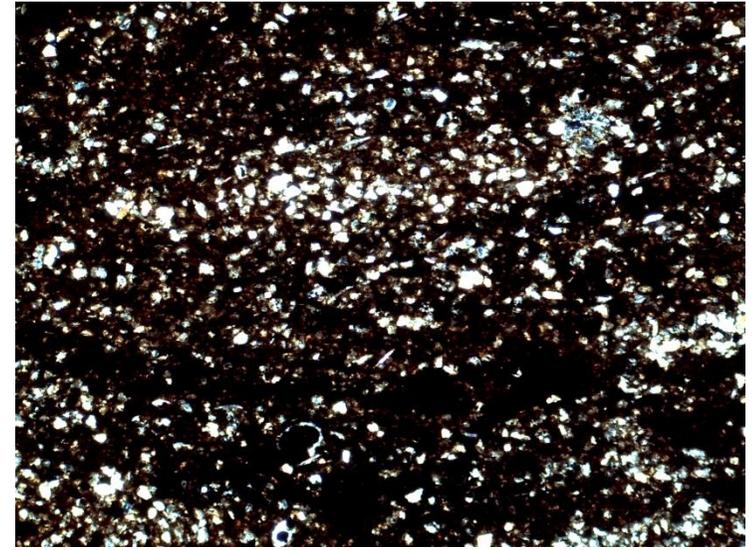
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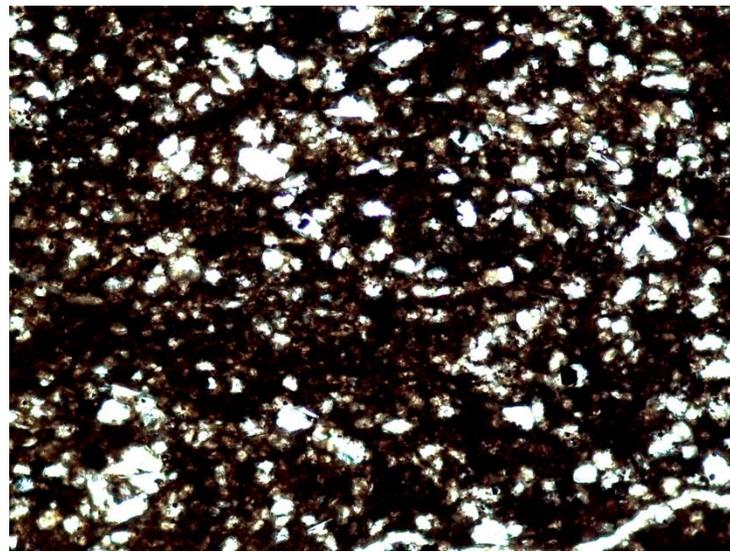
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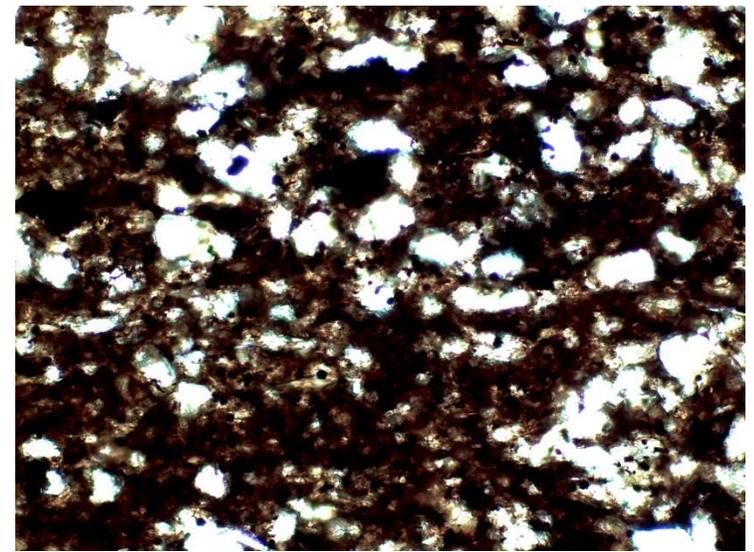
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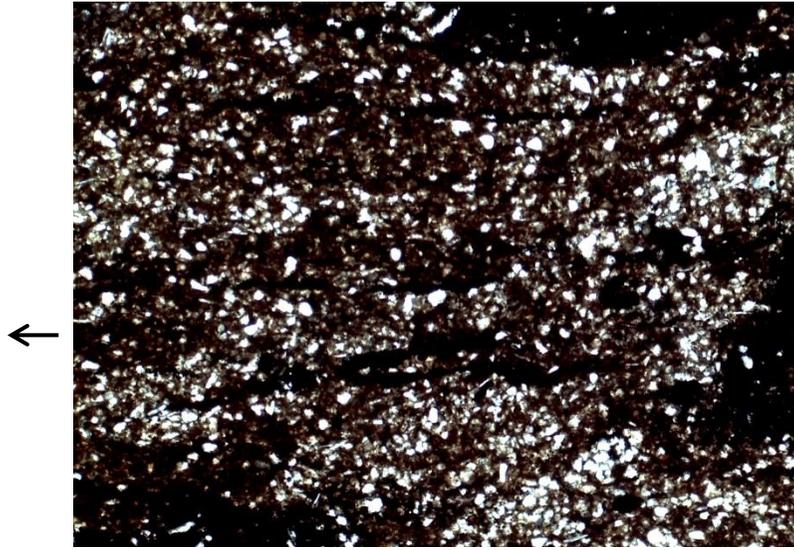
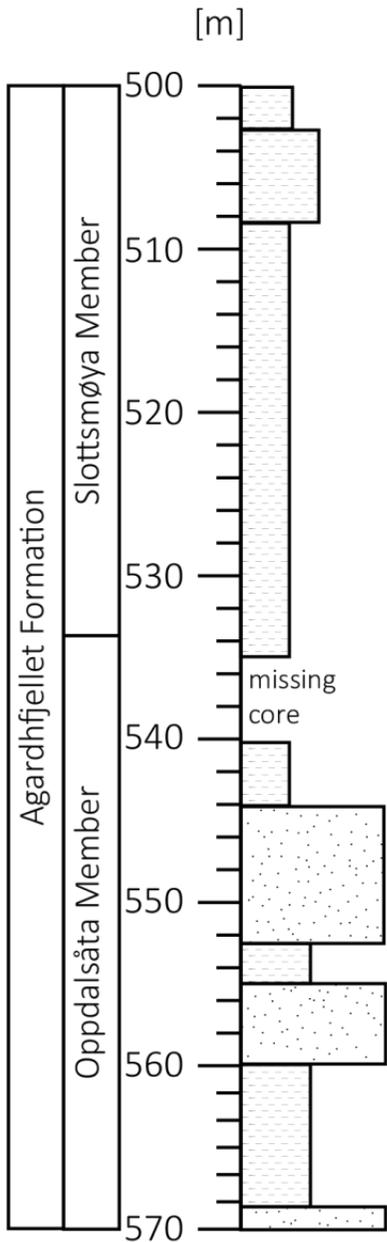


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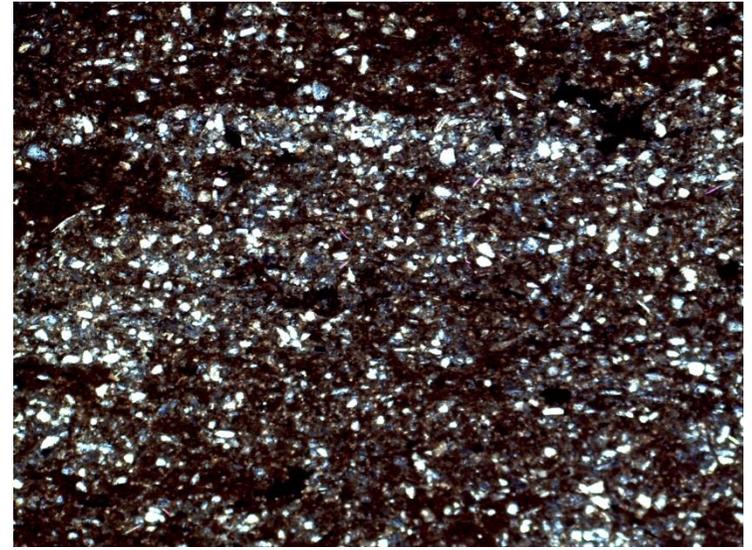
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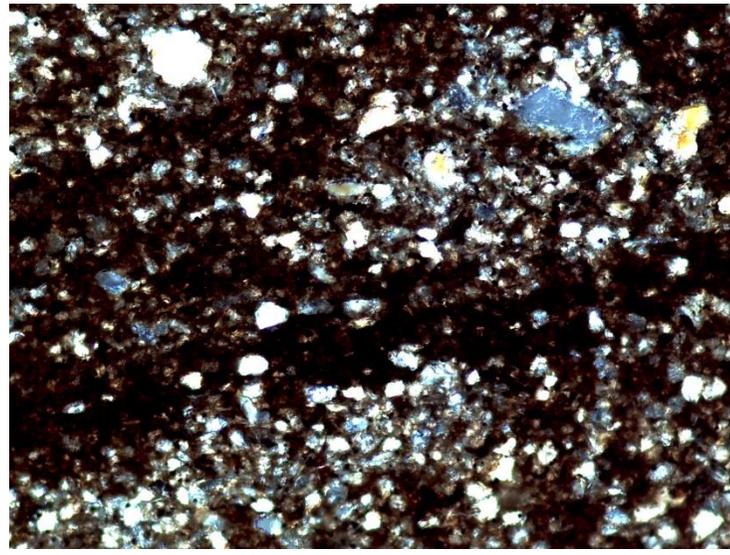
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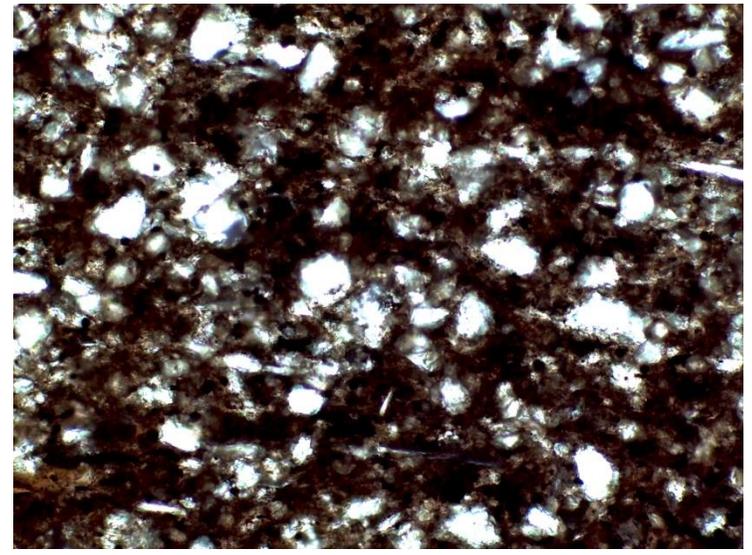
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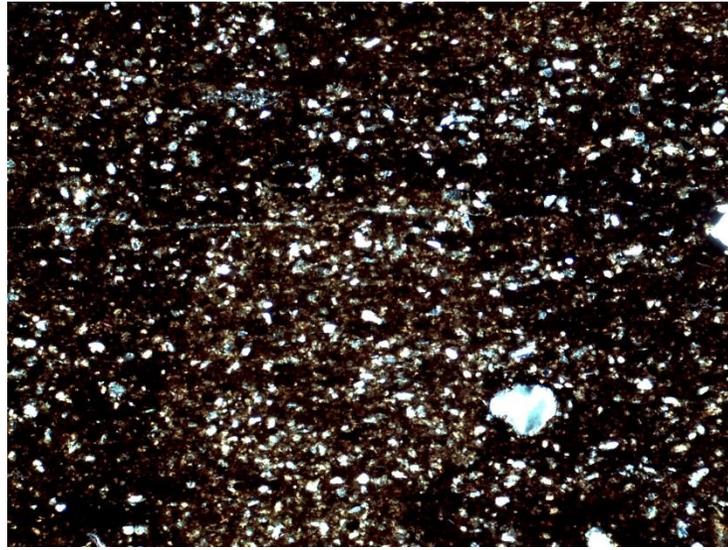
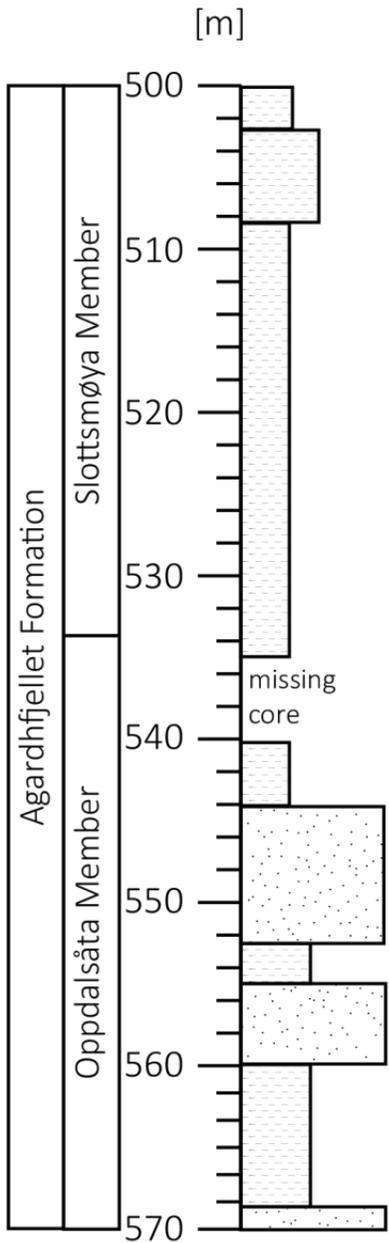


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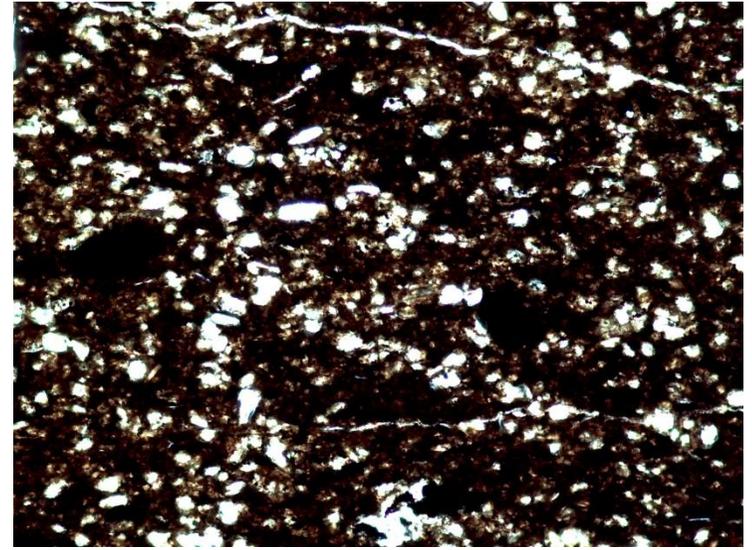
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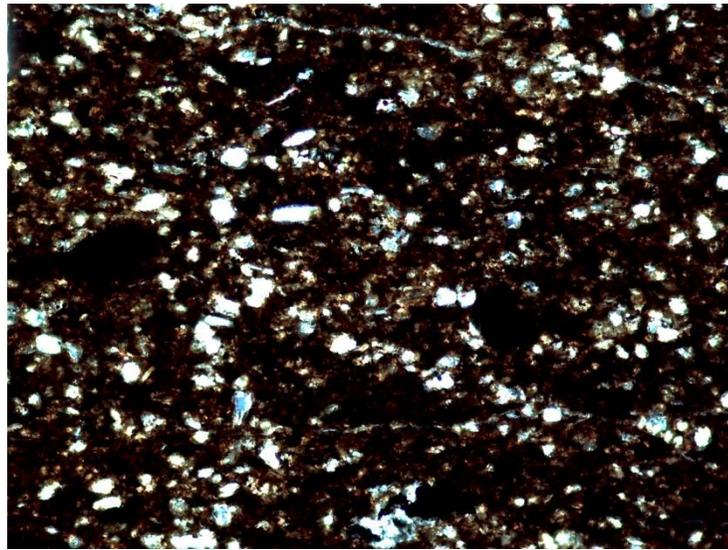
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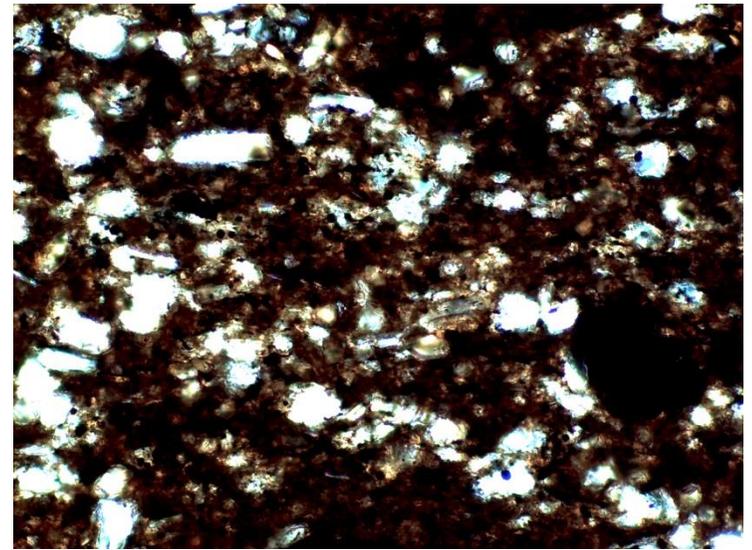
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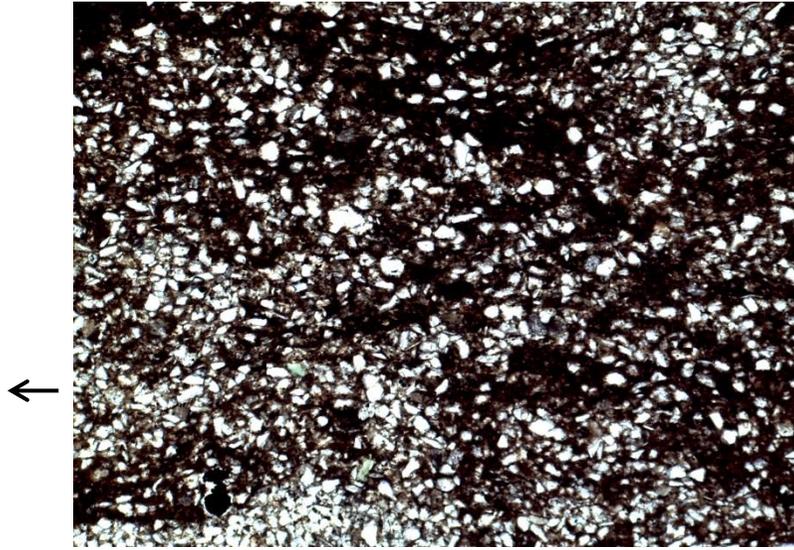
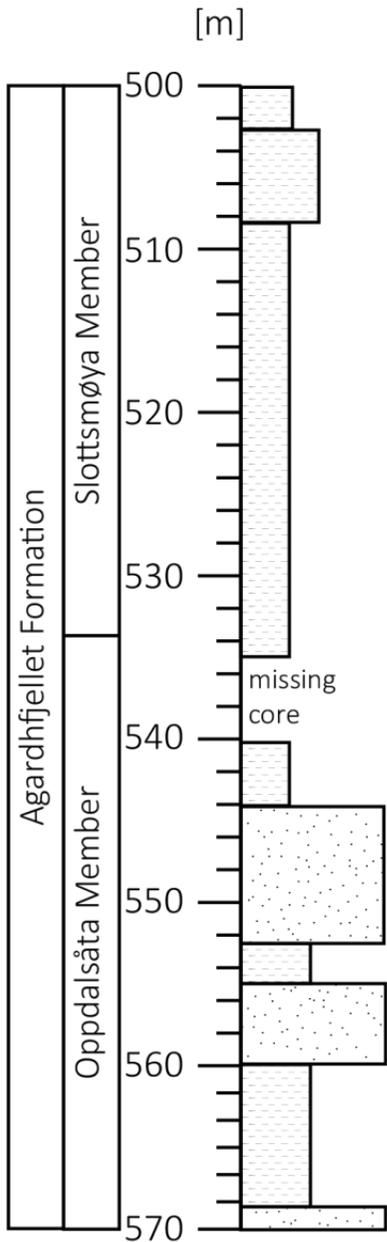


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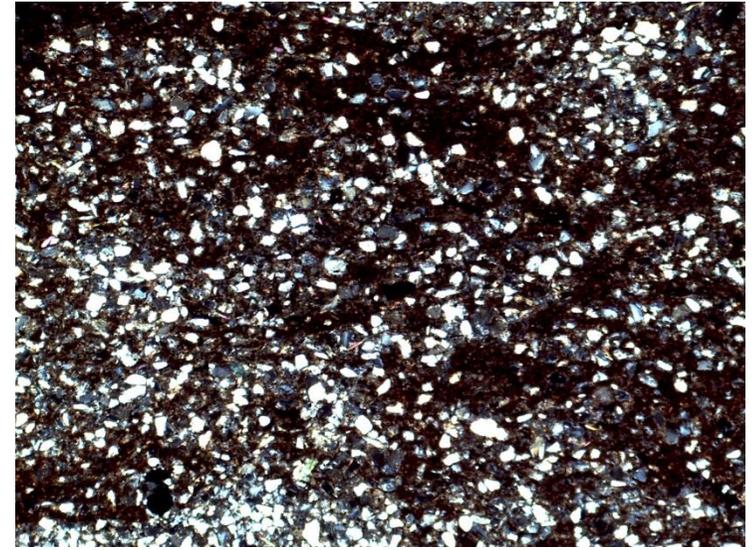
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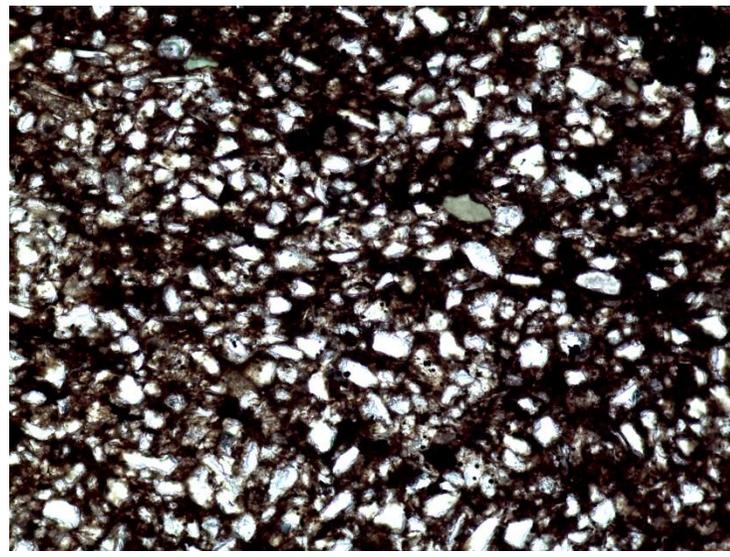
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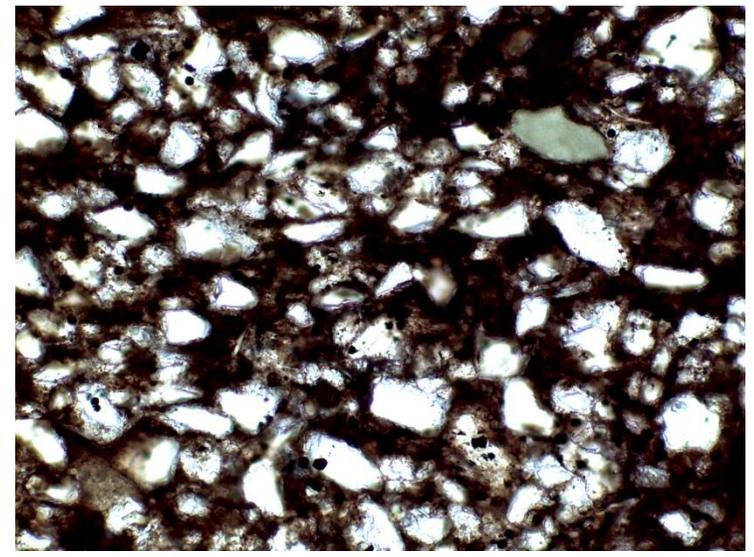
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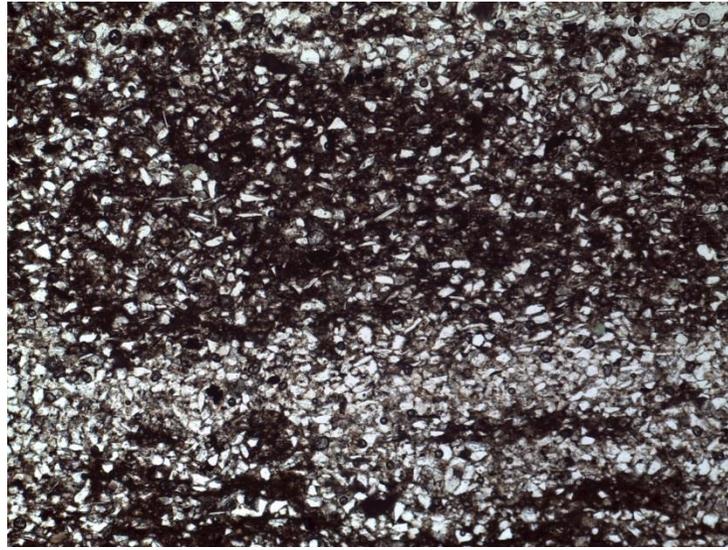
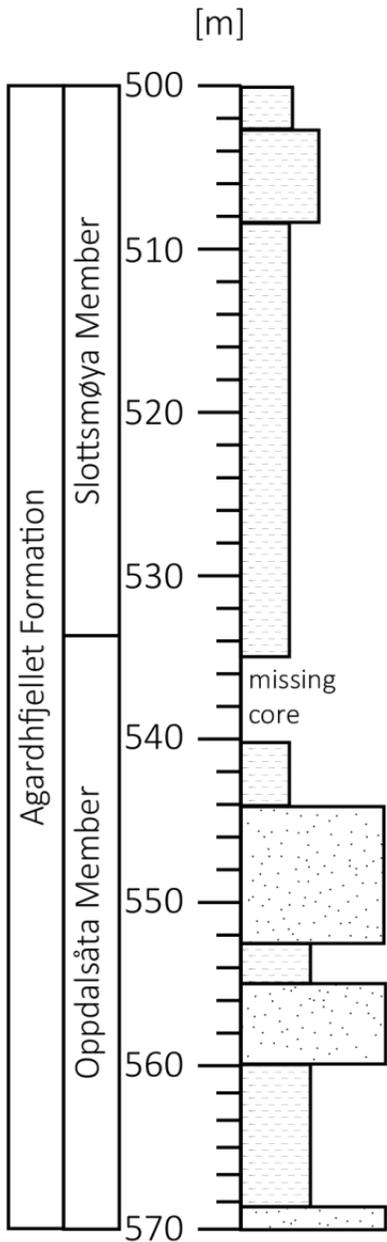


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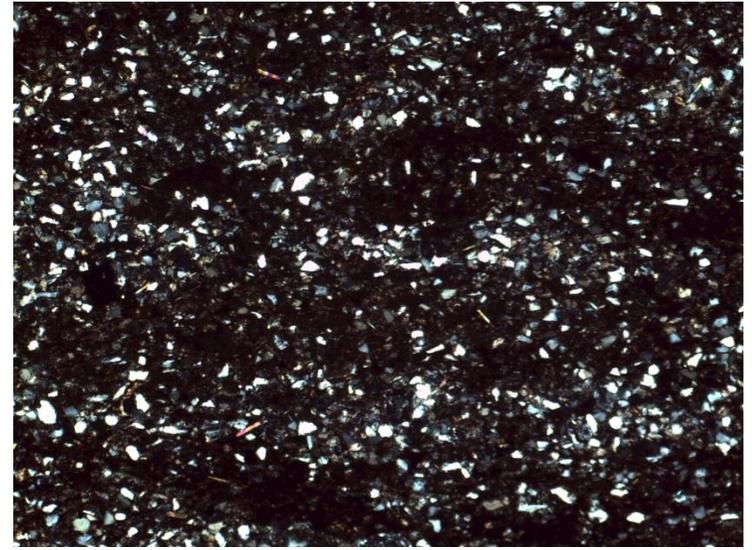
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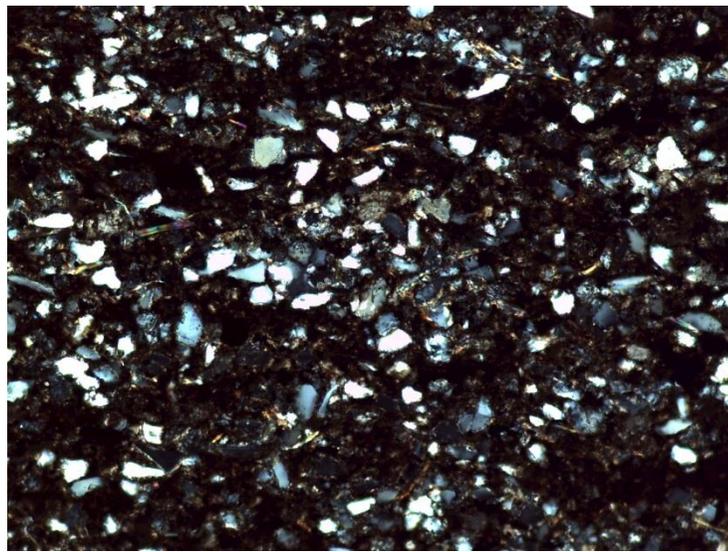
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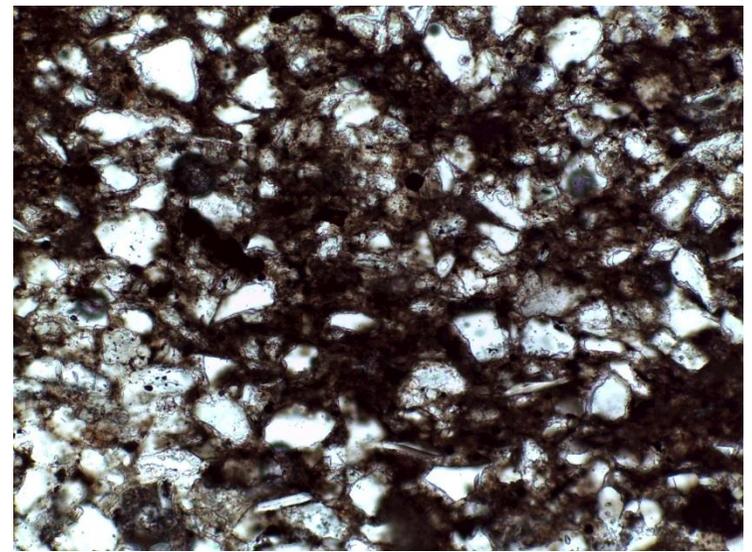
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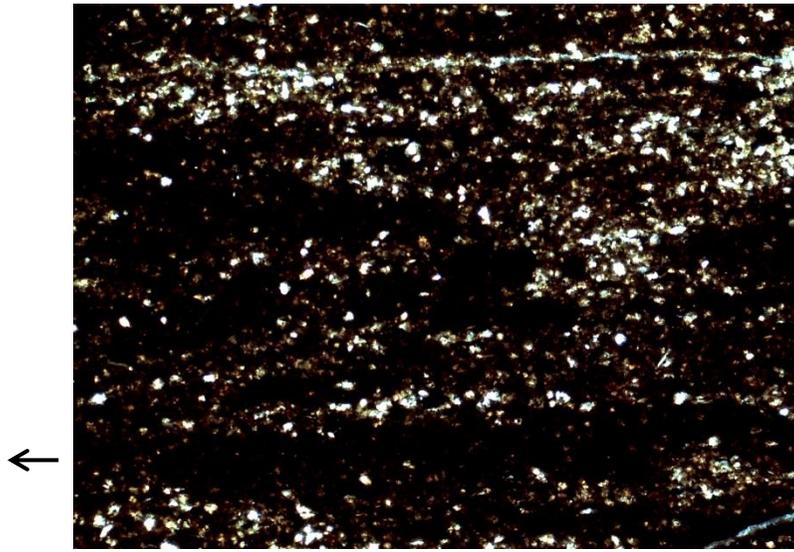
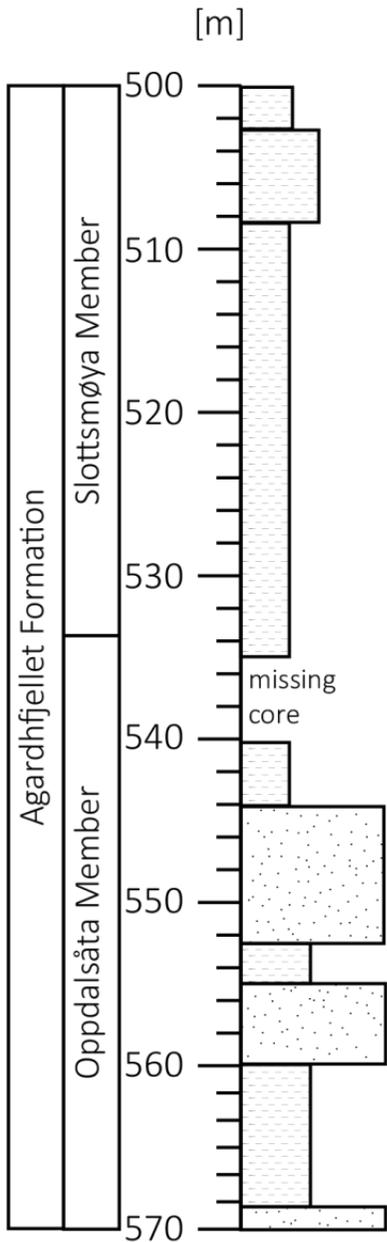


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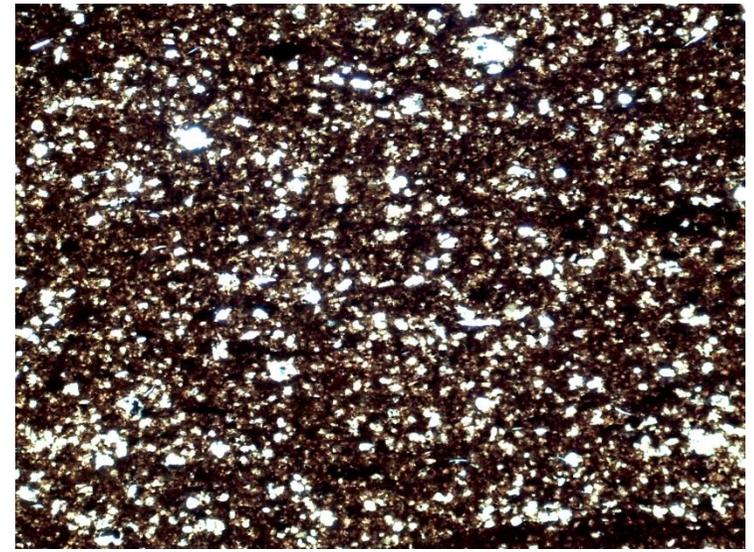
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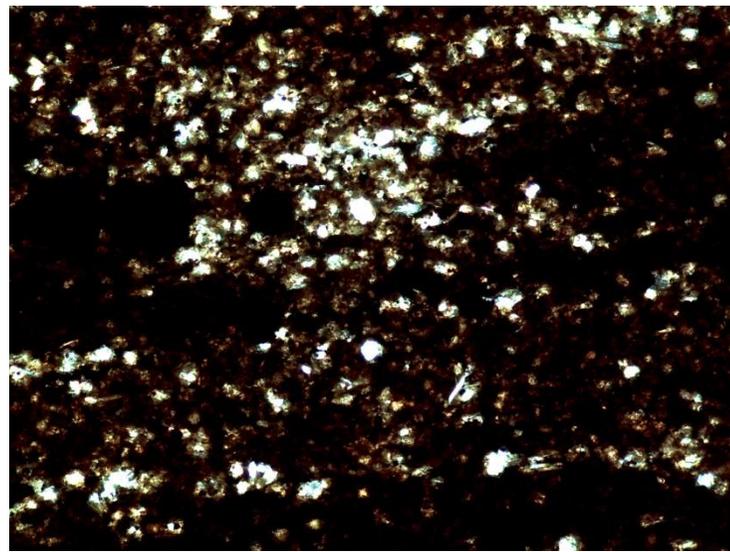
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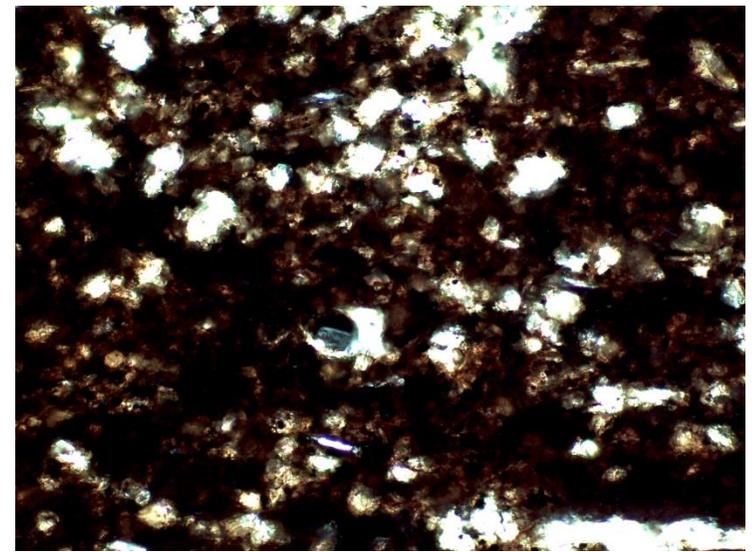
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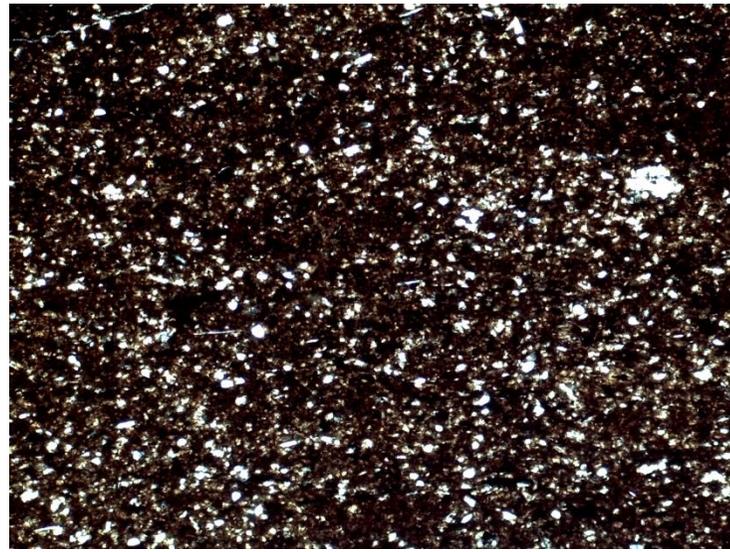
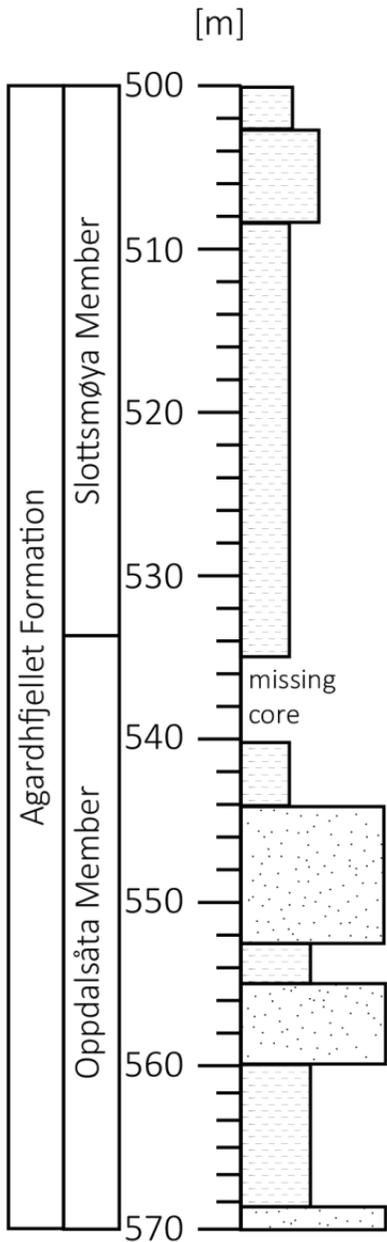


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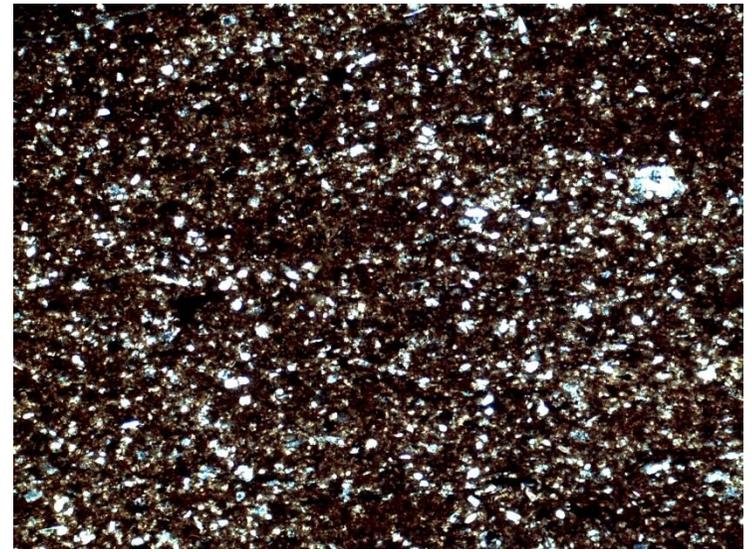
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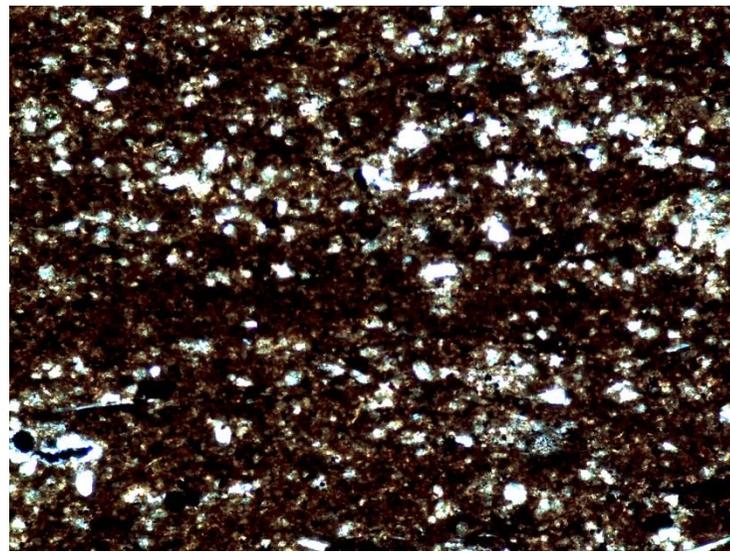
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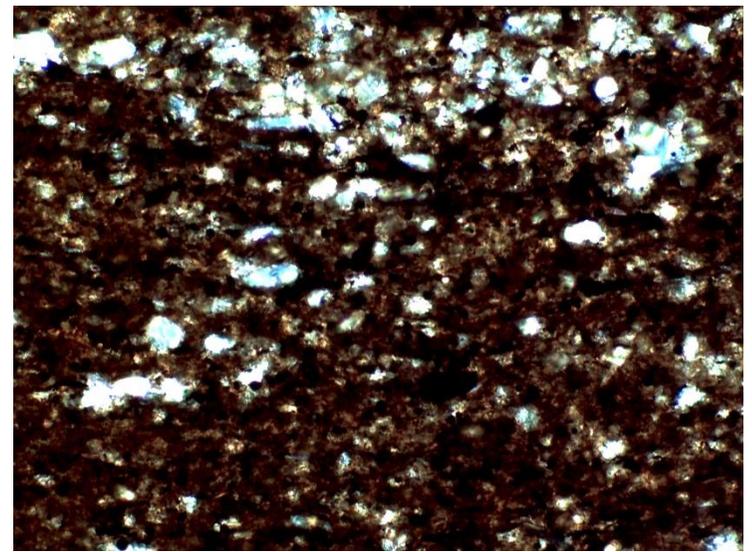
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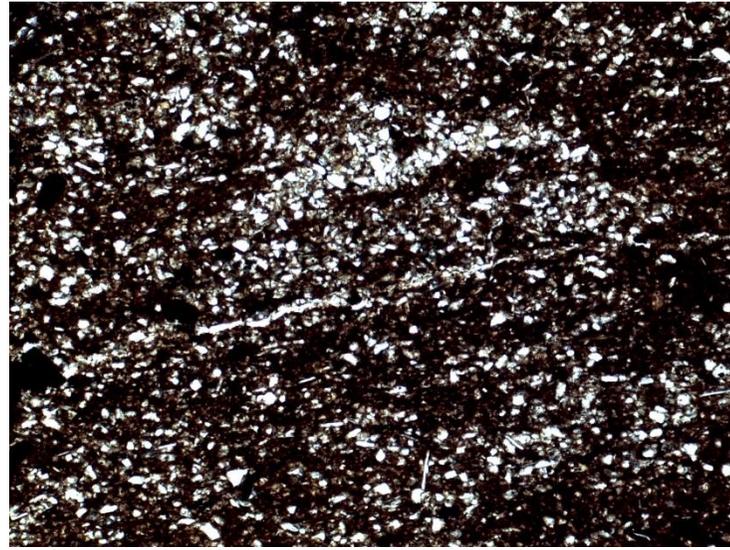
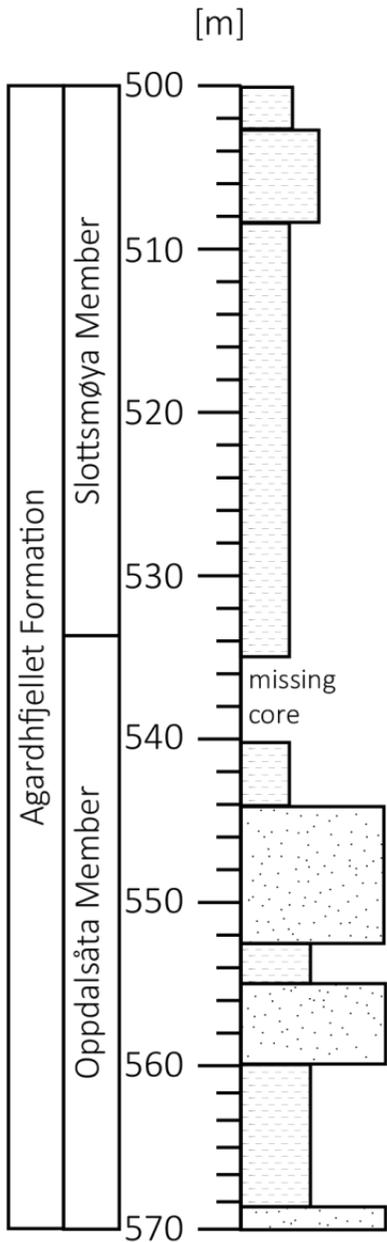


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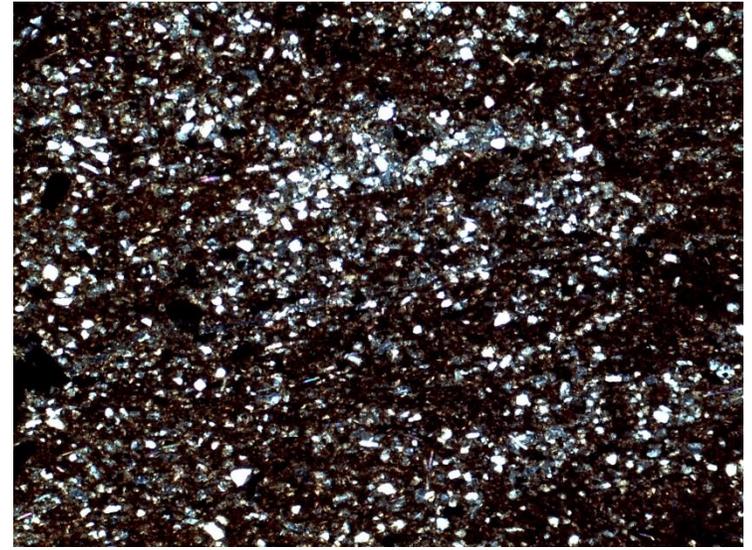
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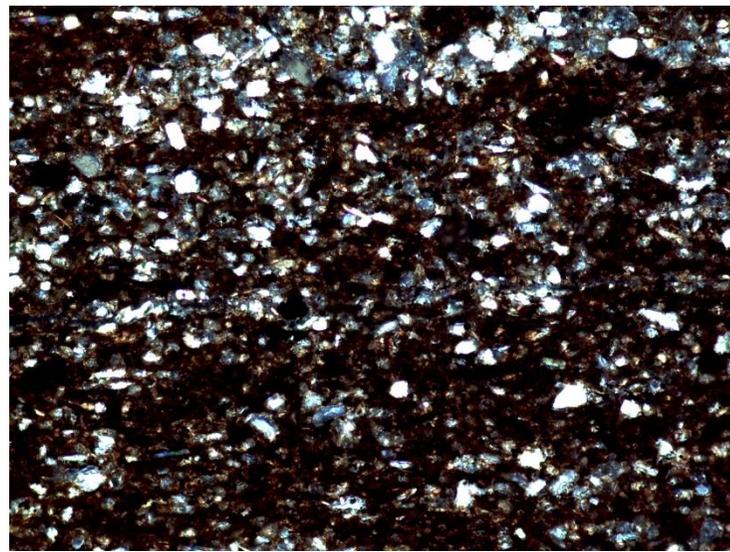
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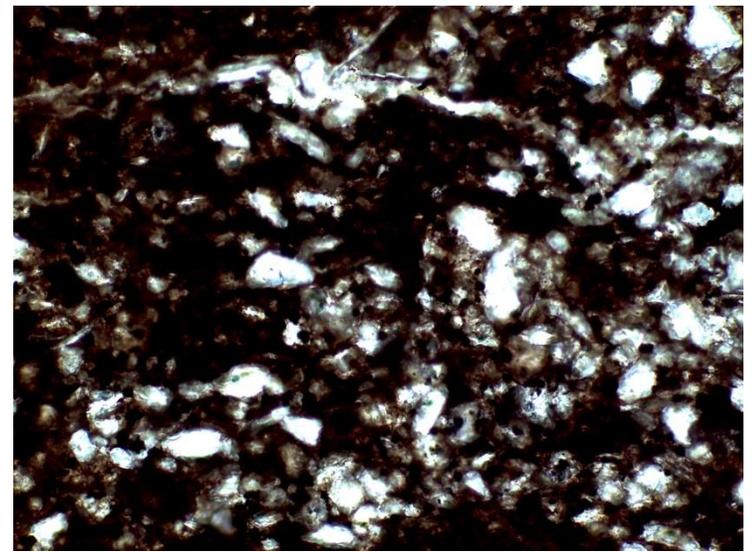
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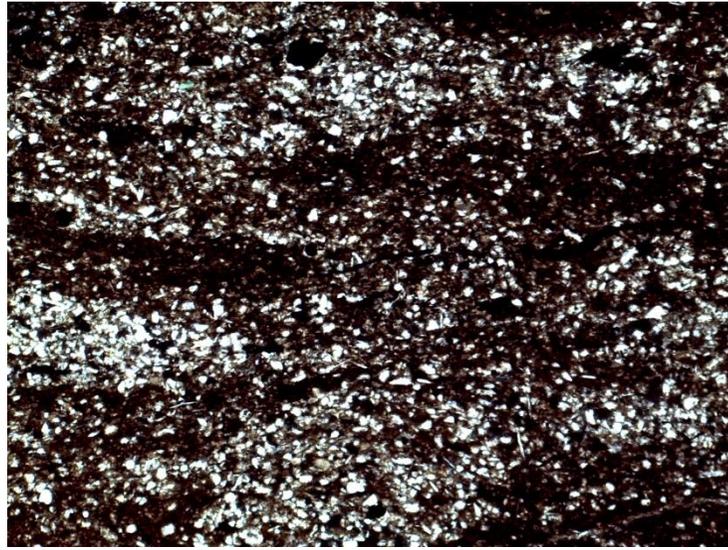
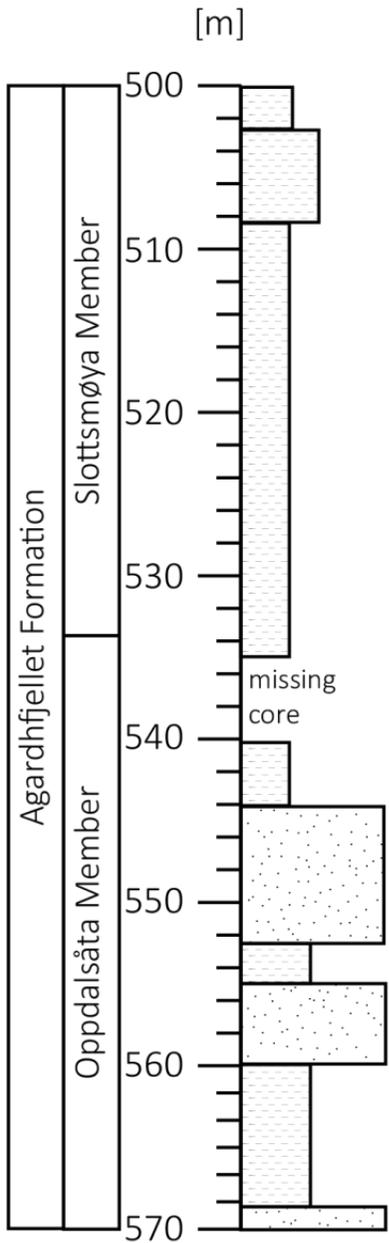


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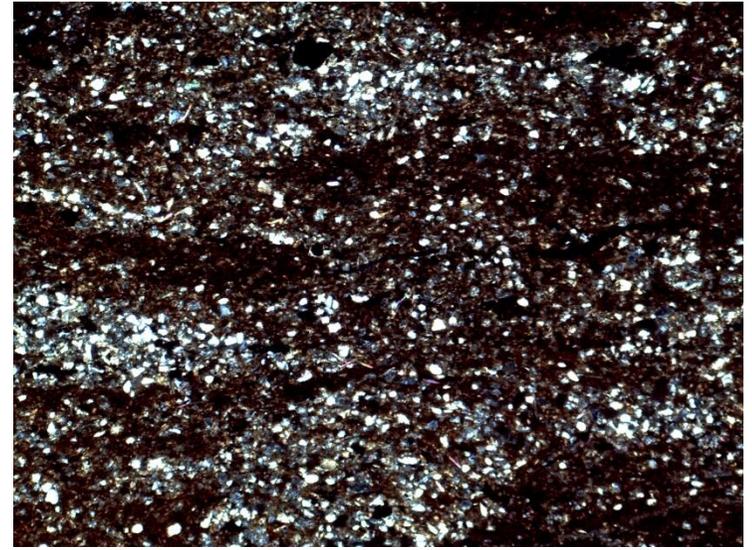
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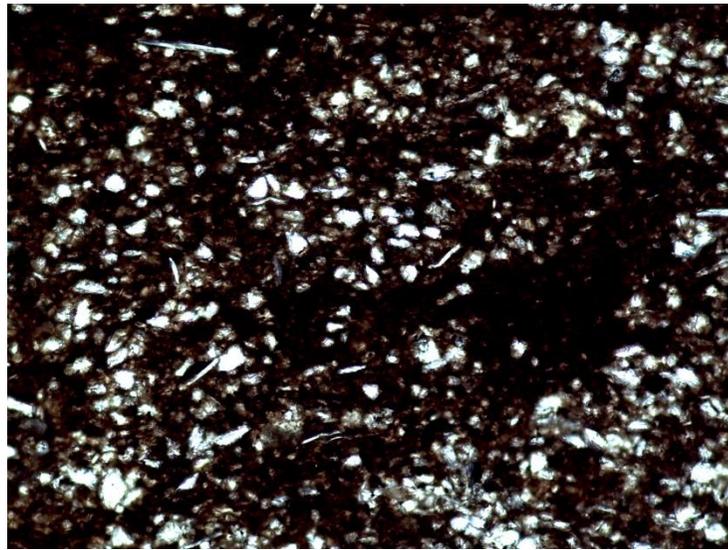
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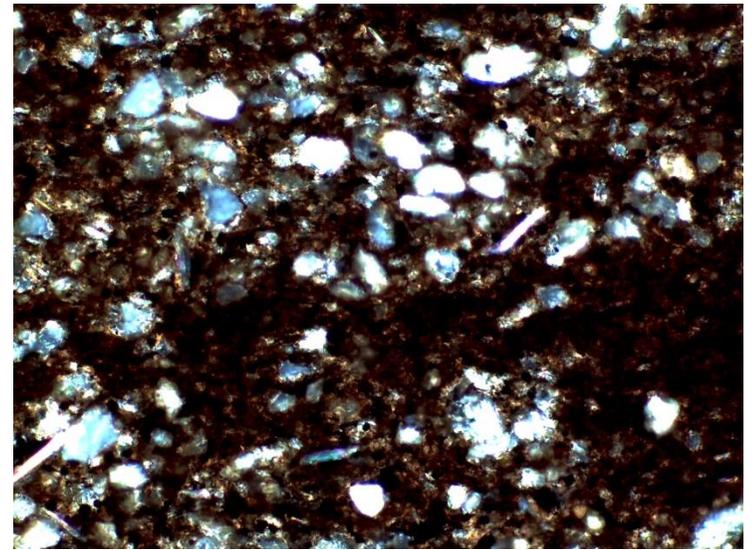
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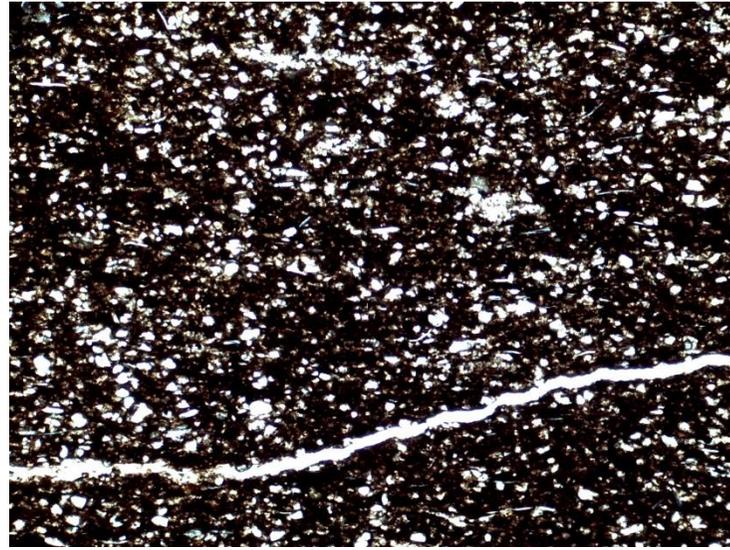
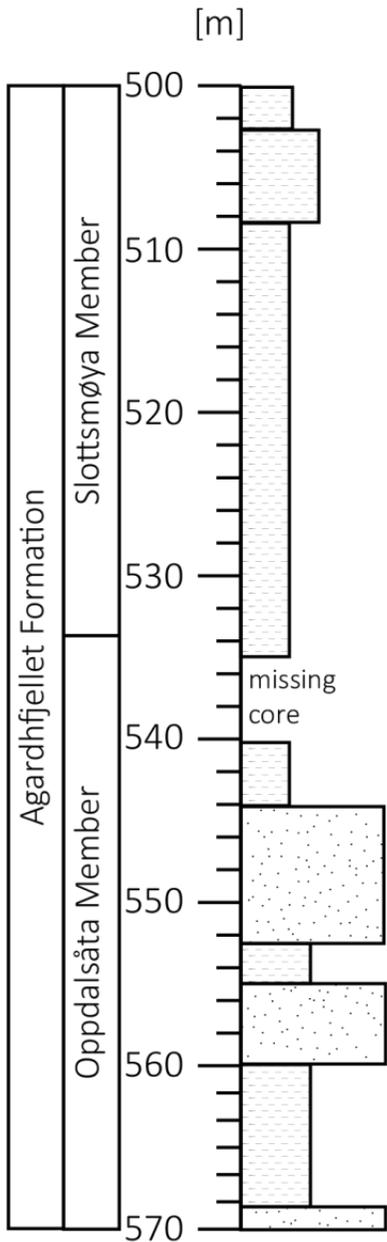


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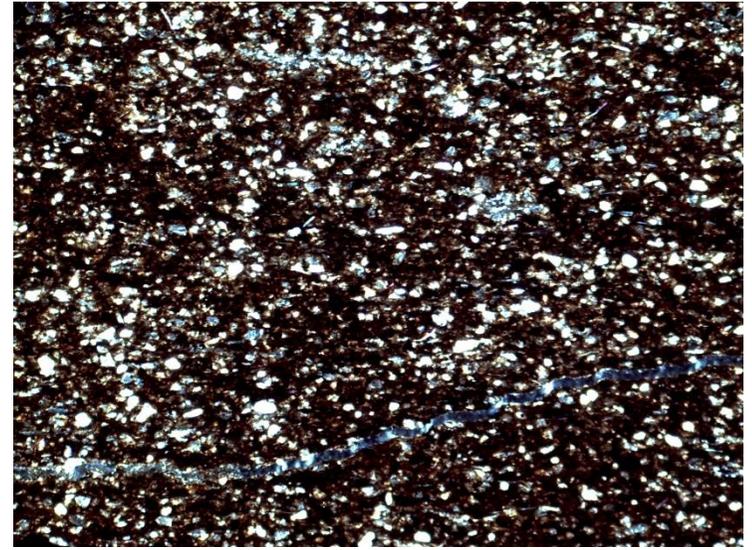
Thin section preparation: Durham University

All scale bars = 500 μ m

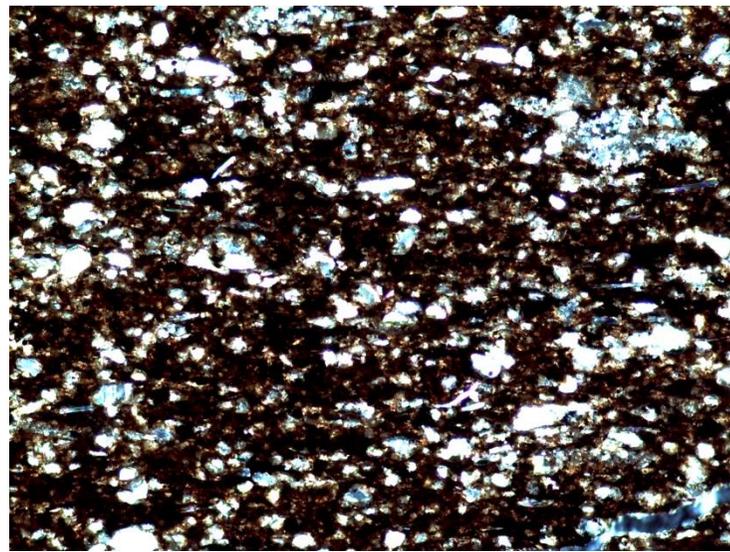
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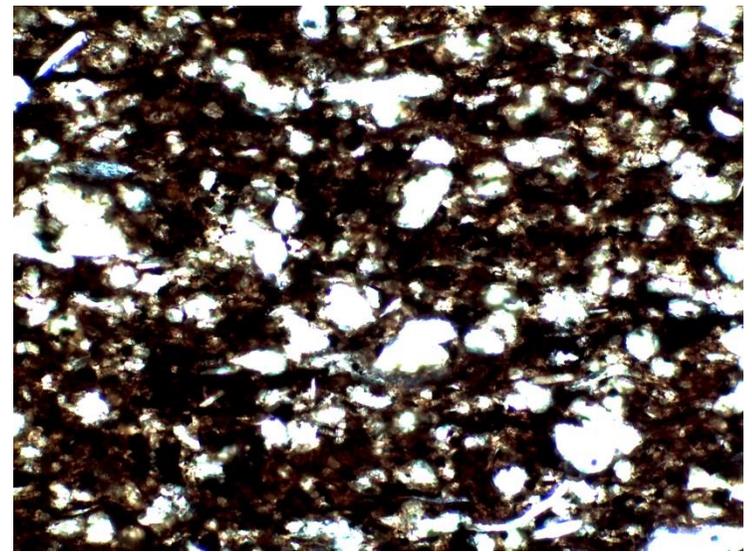
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XPL



XPL

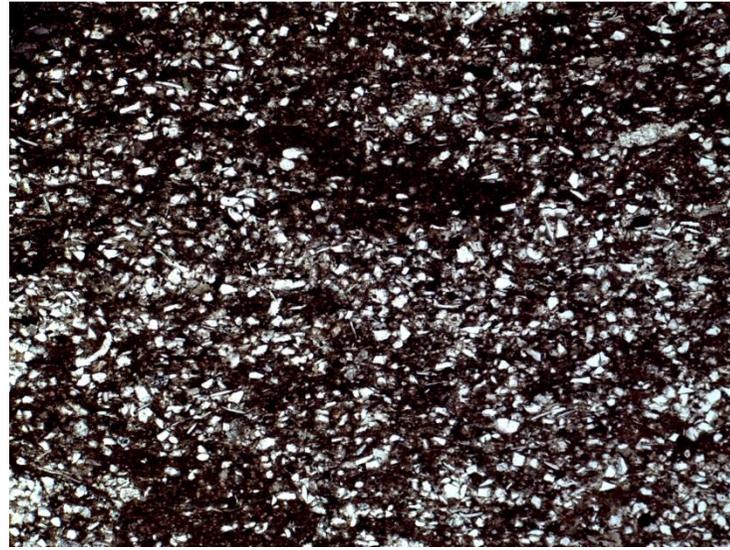
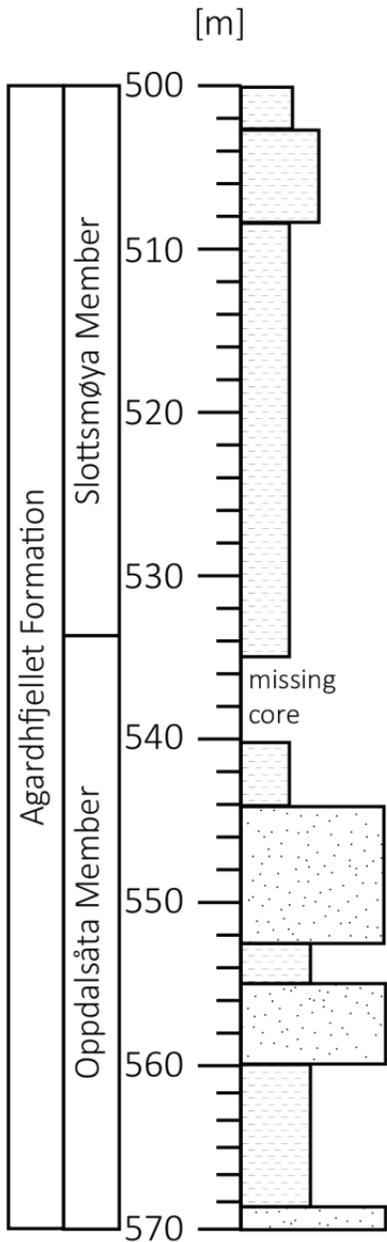


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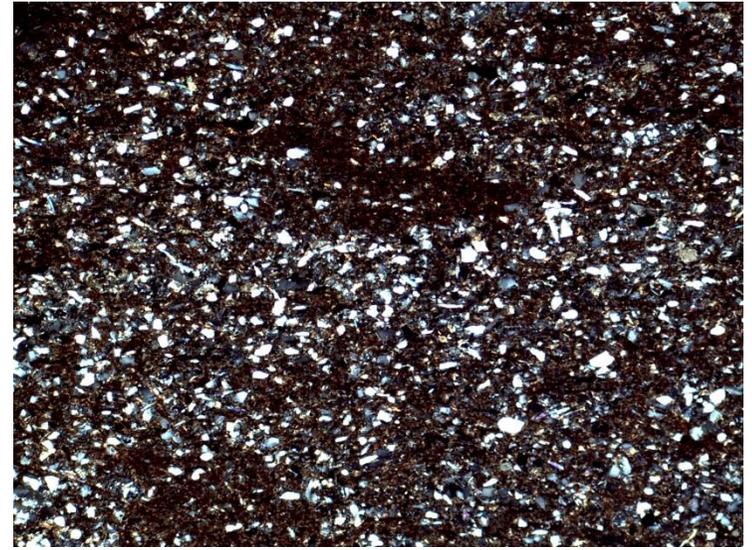
Thin section preparation: Durham University

All scale bars = 500 μ m

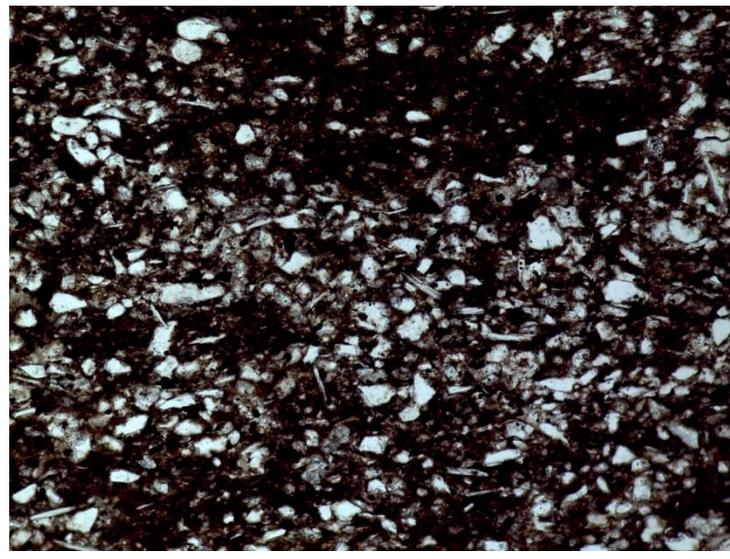
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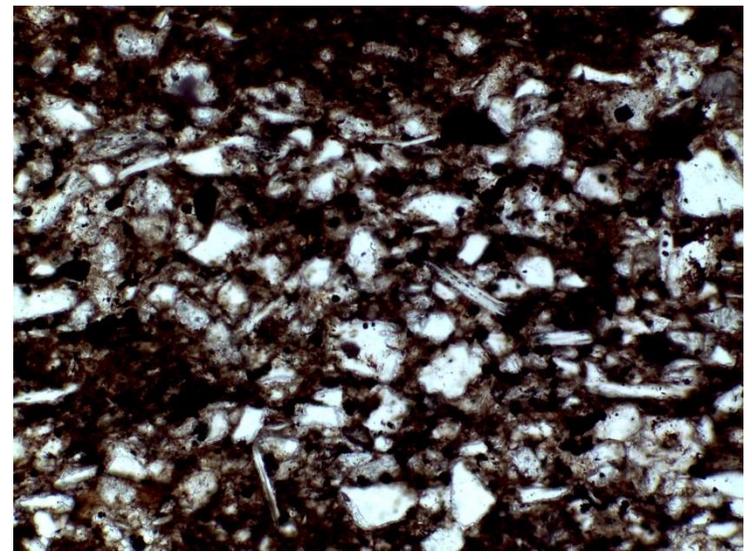
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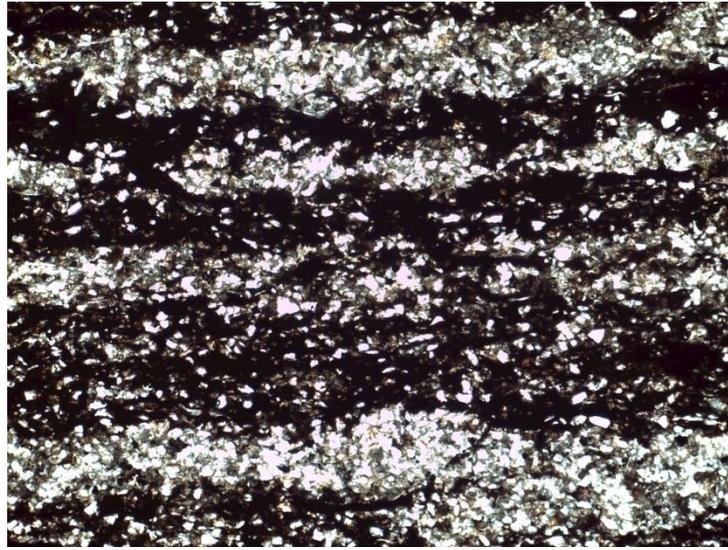
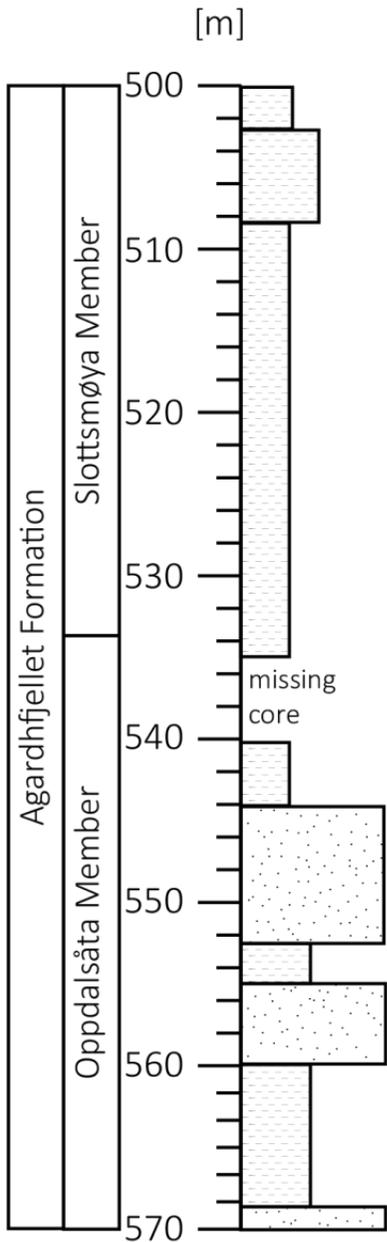


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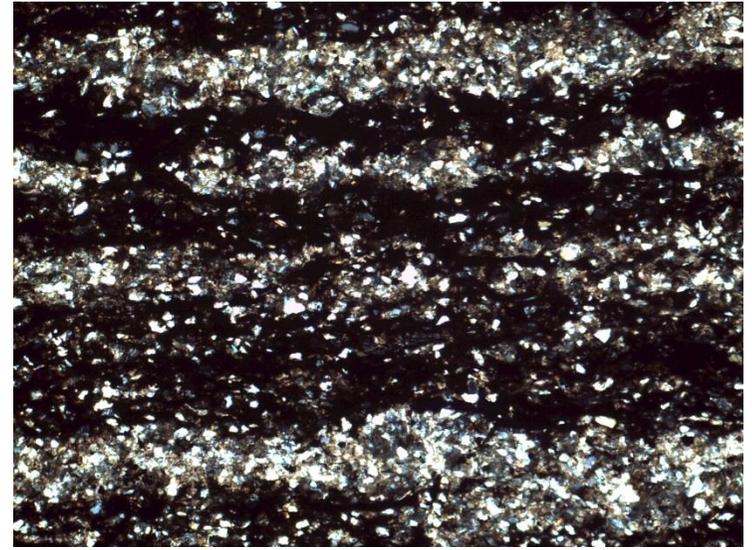
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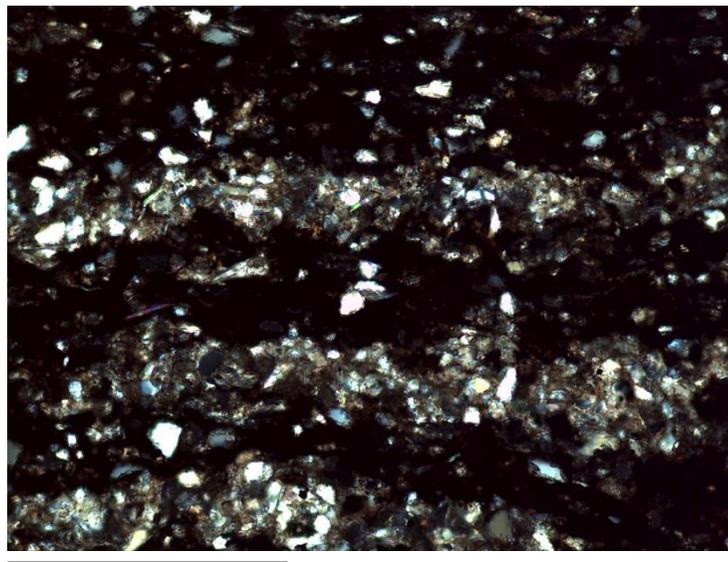
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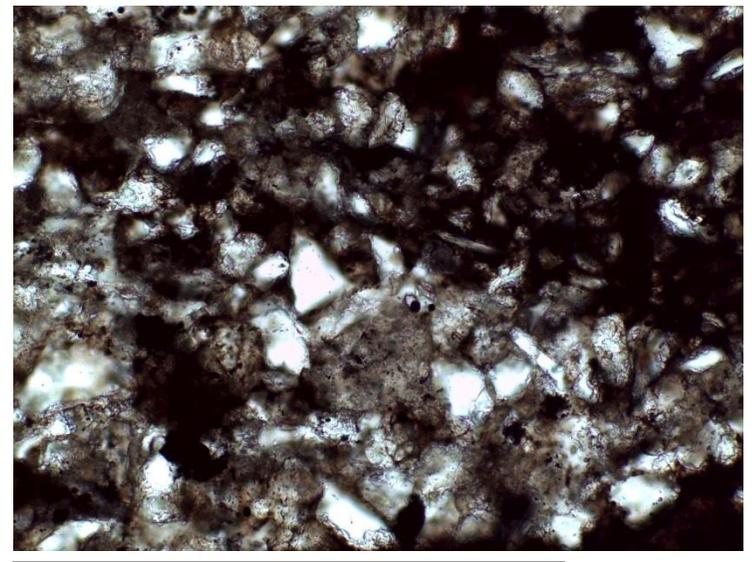
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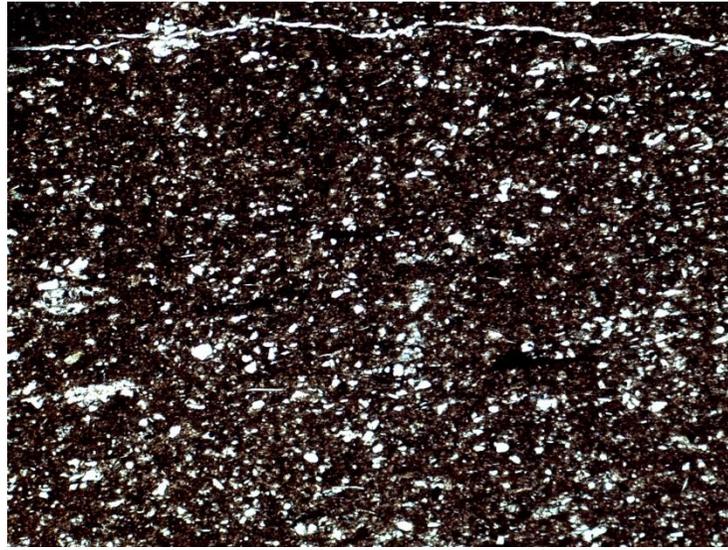
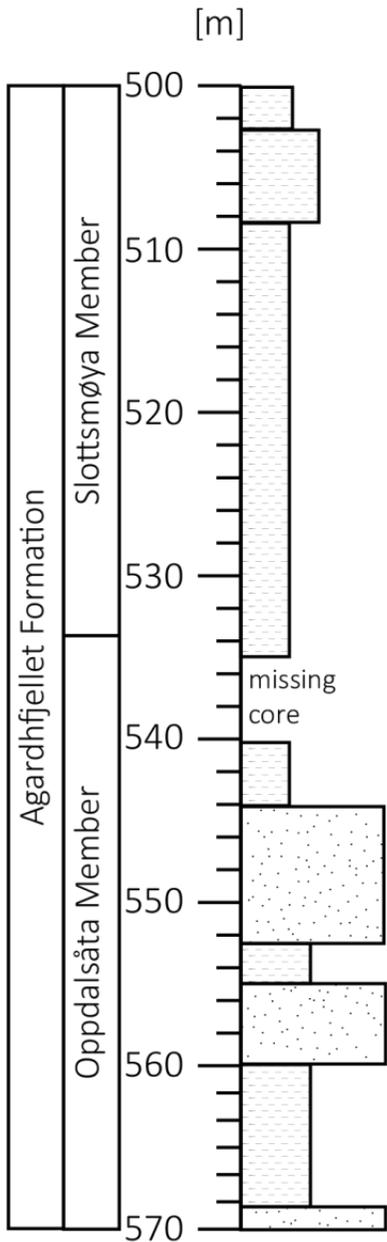


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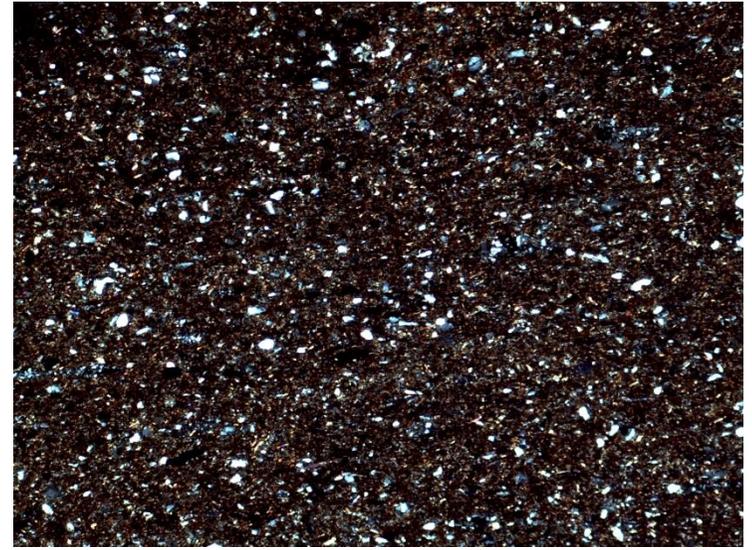
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All scale bars = 500 μ m

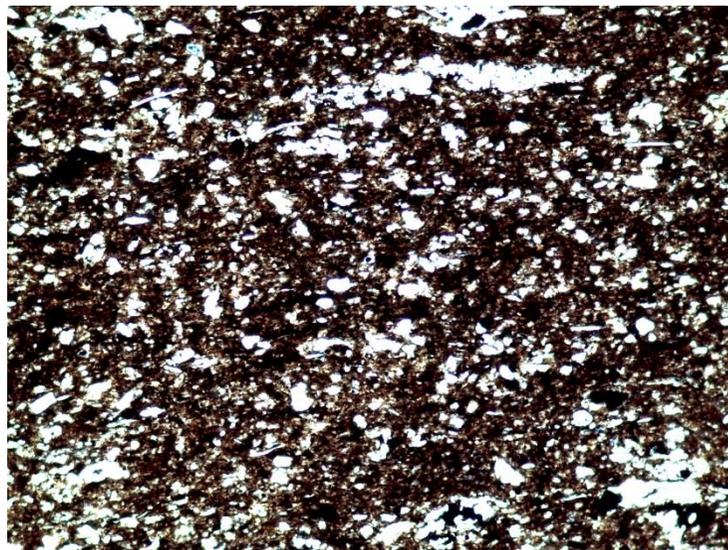
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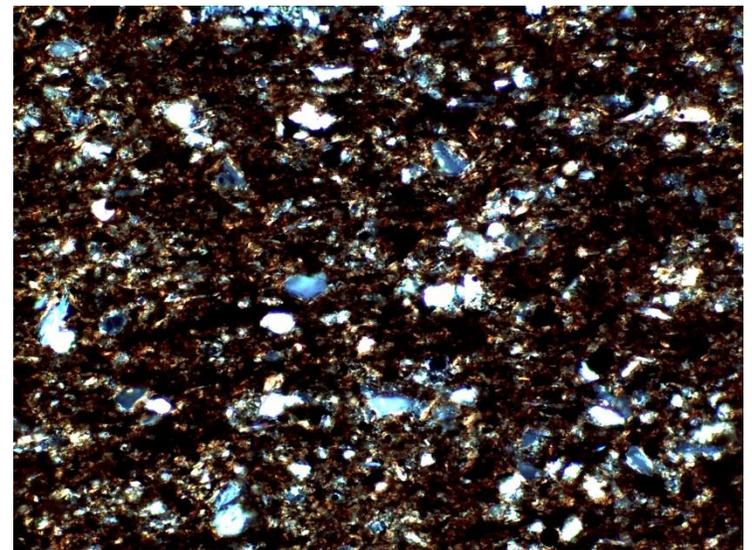
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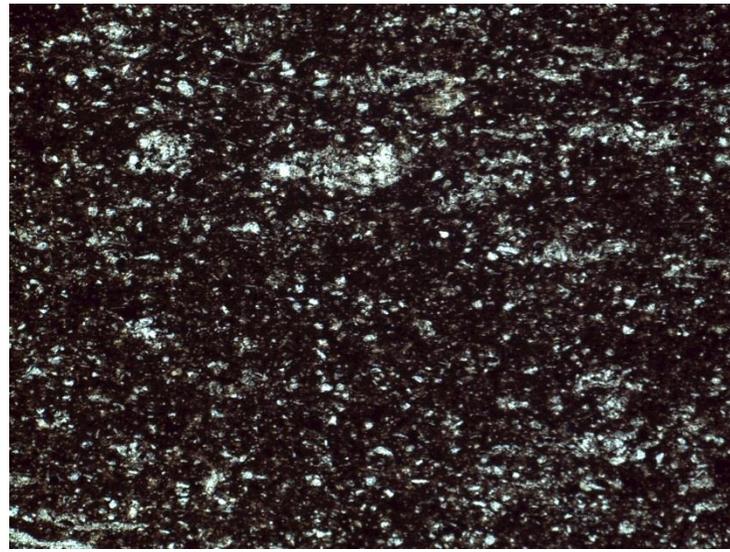
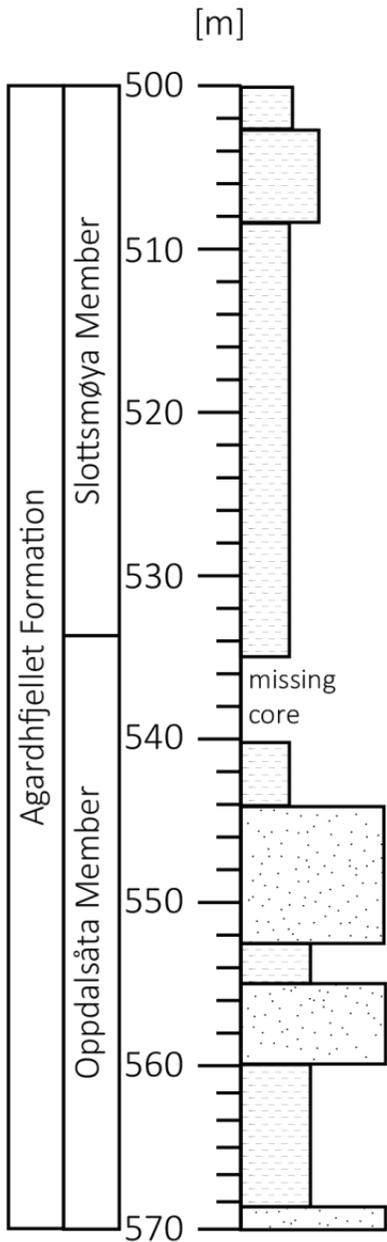


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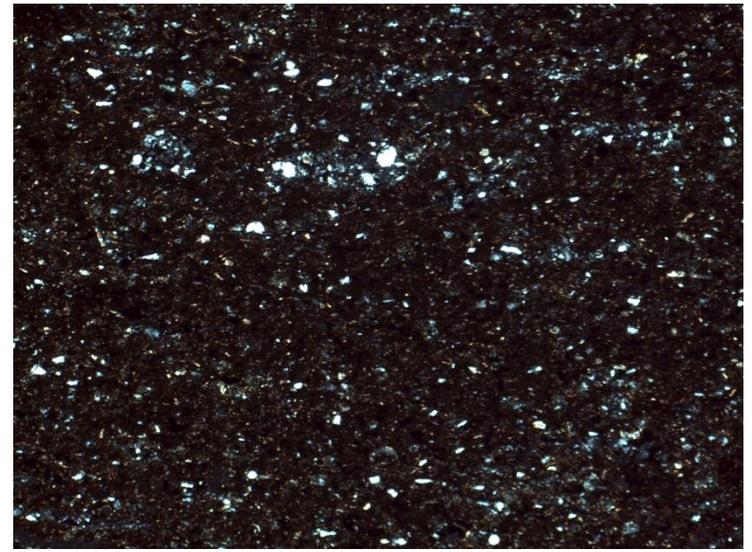
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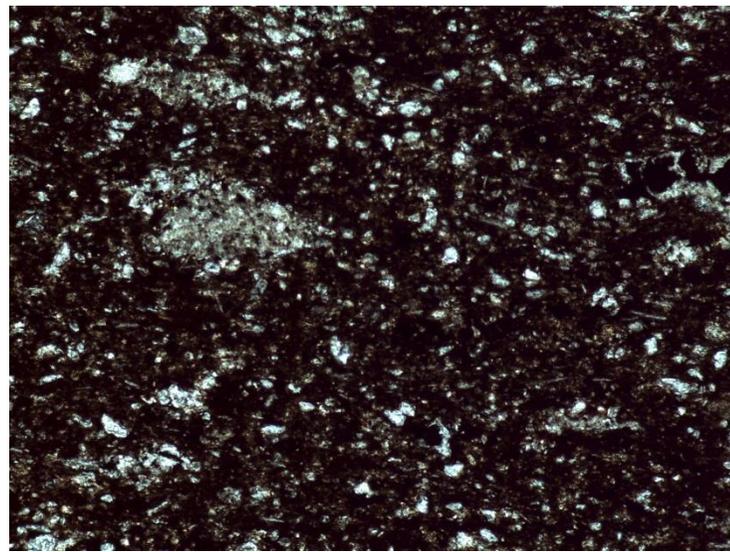
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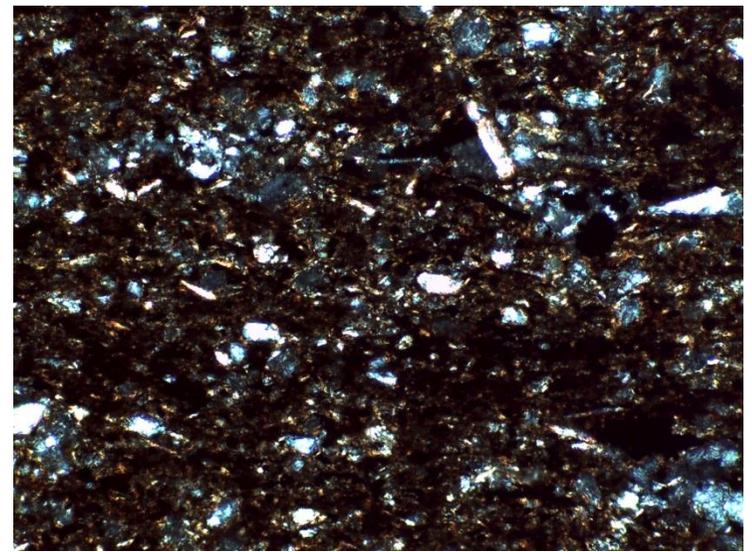
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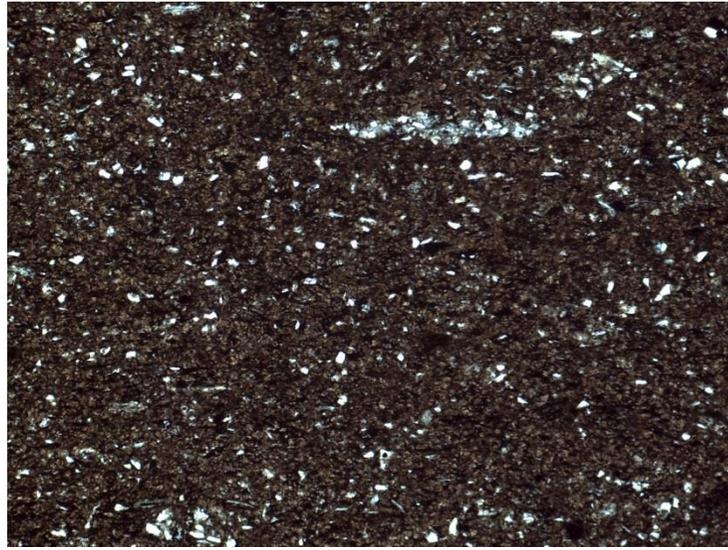
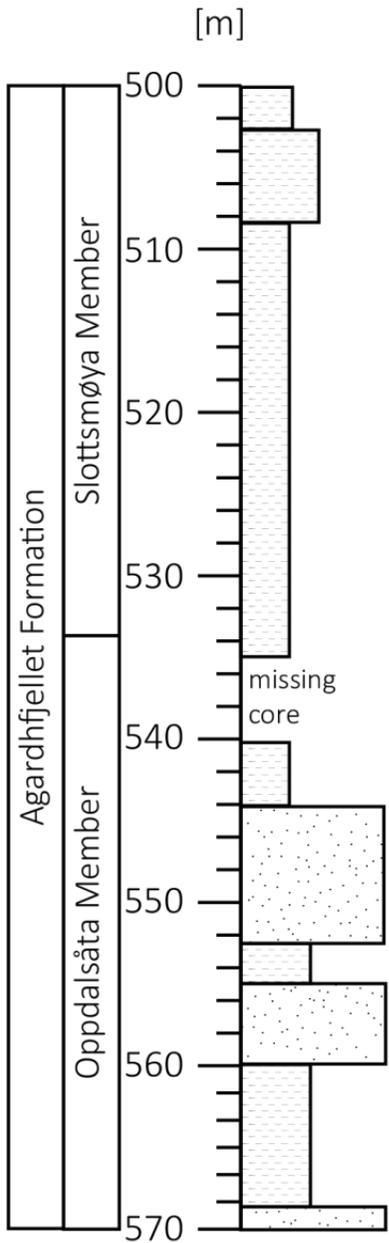


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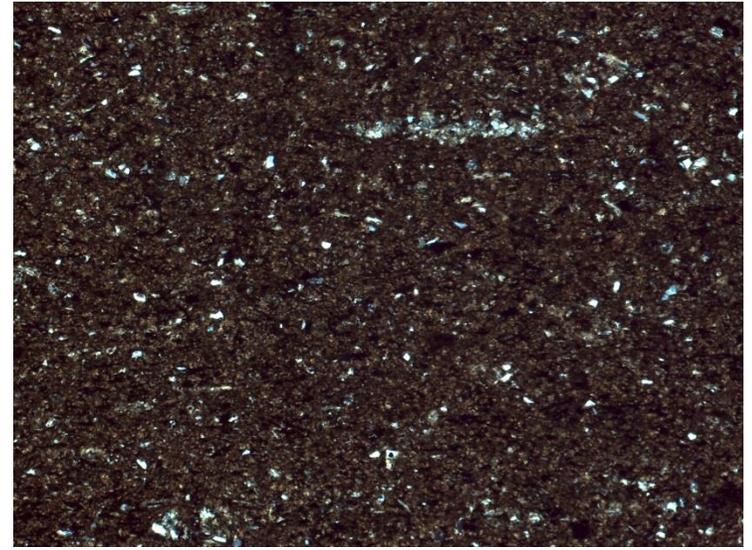
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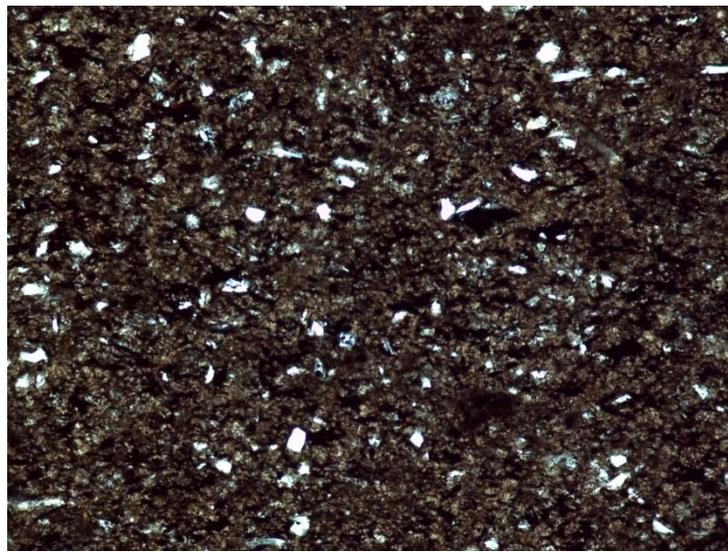
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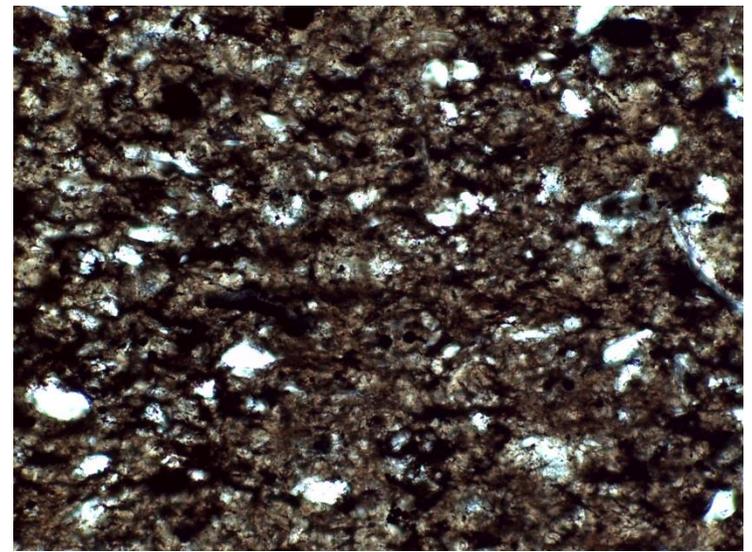
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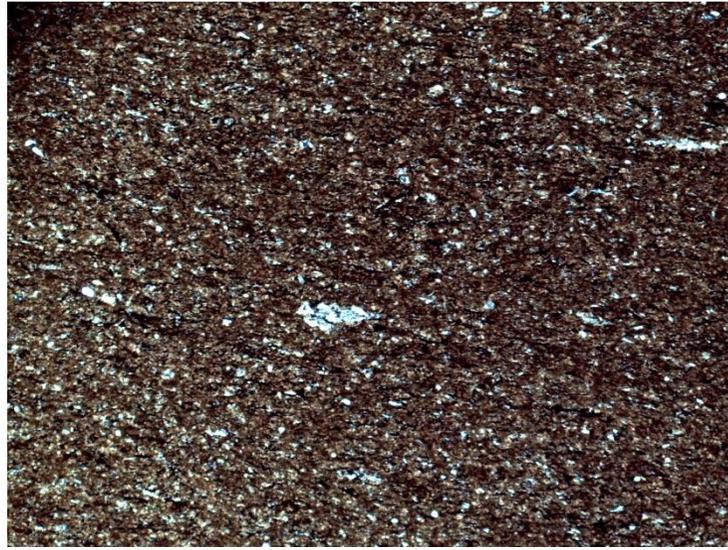
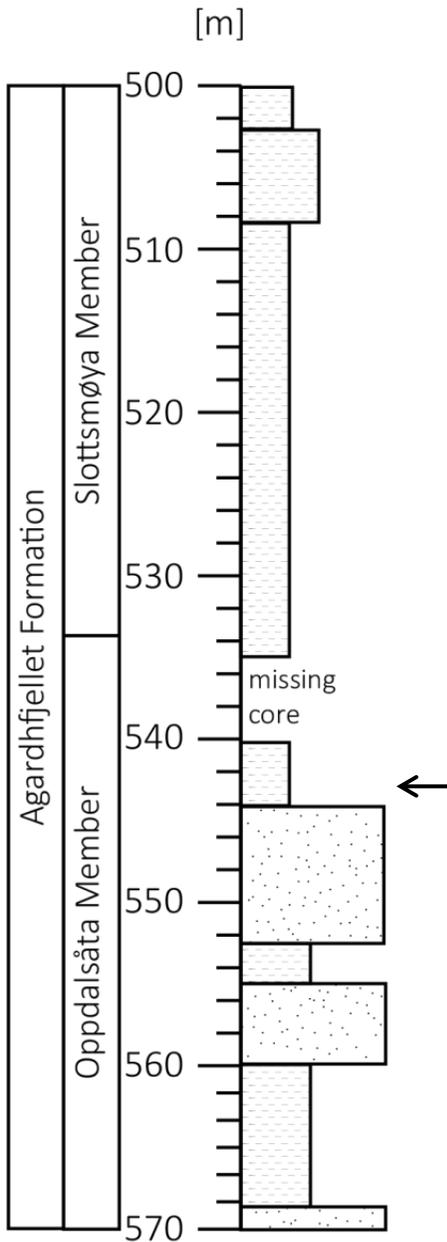


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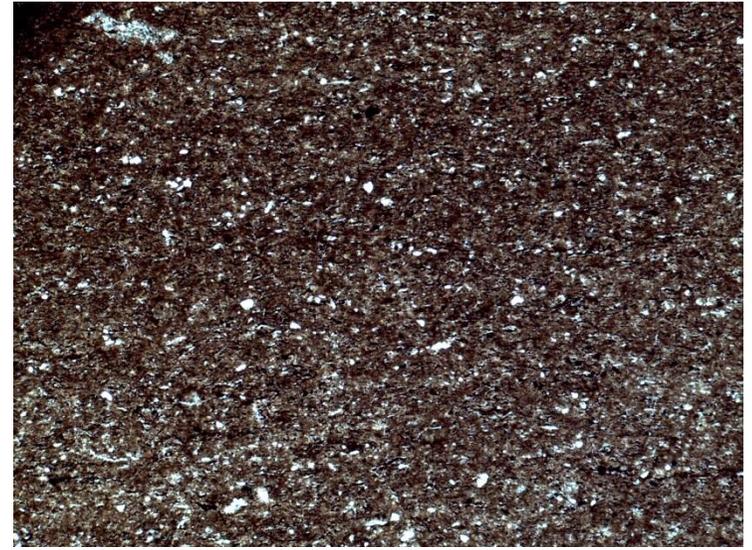
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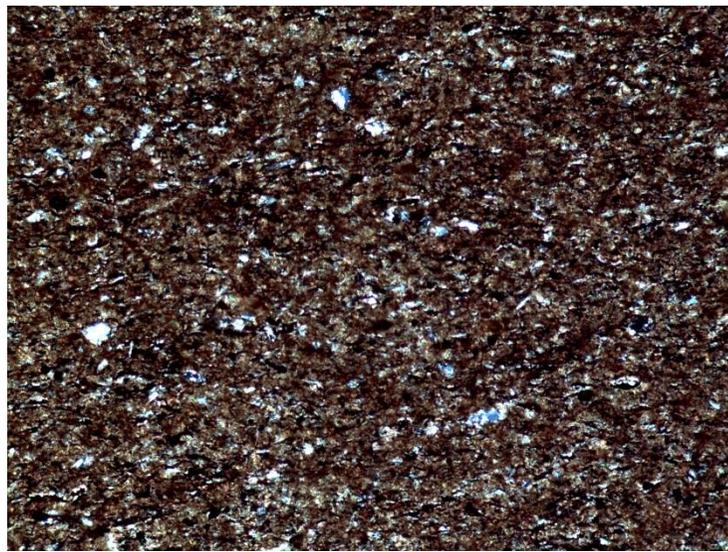
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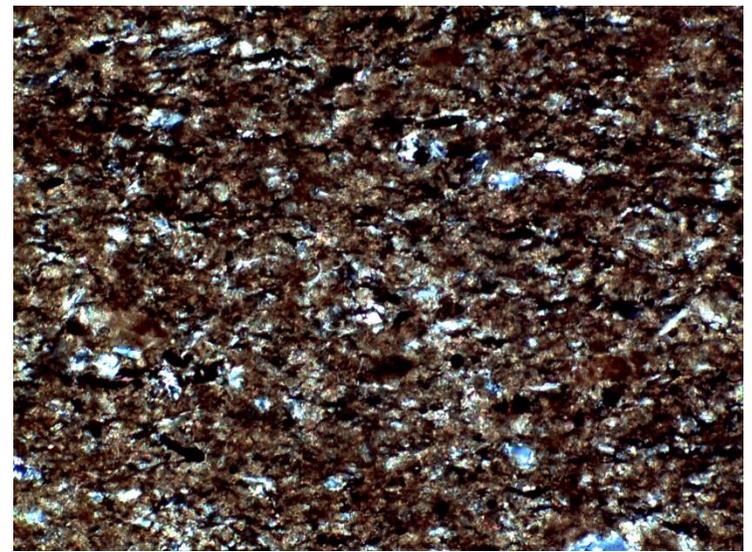
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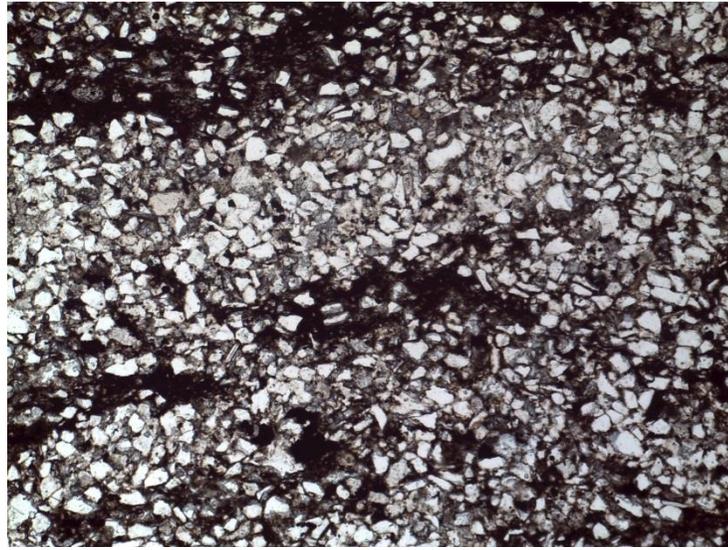
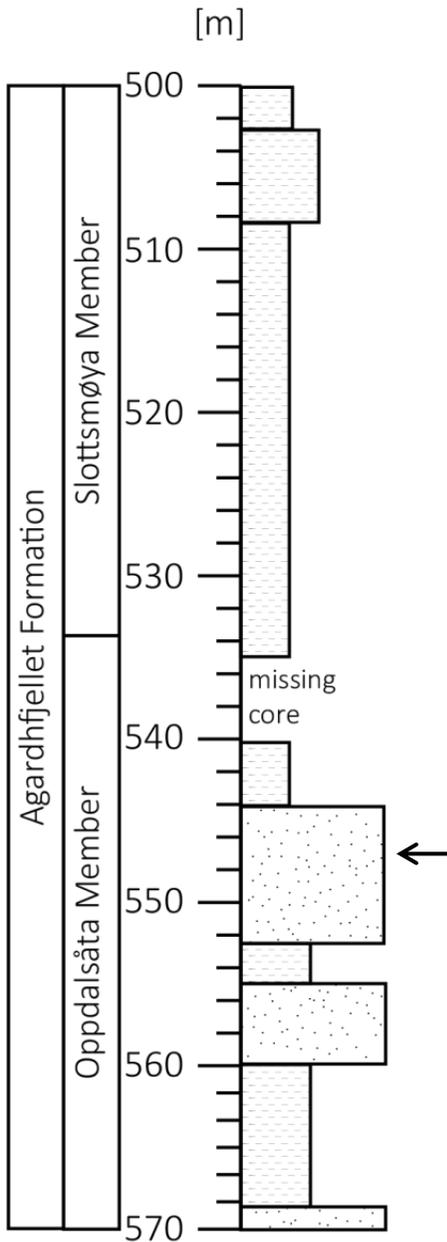


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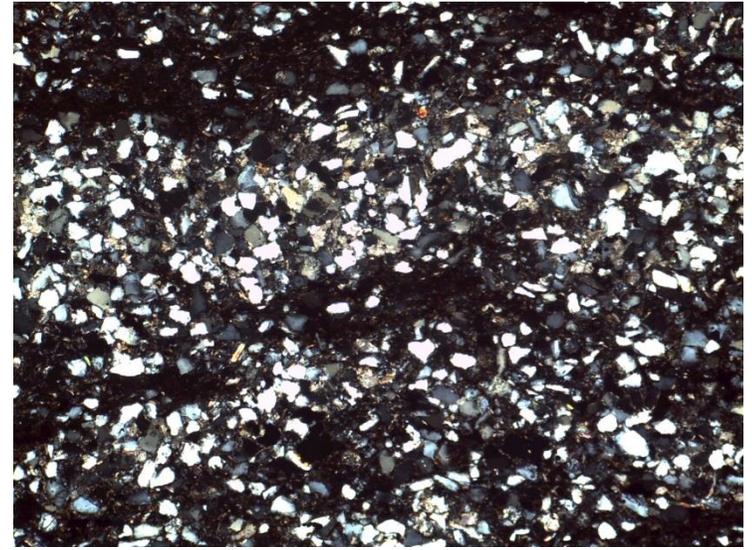
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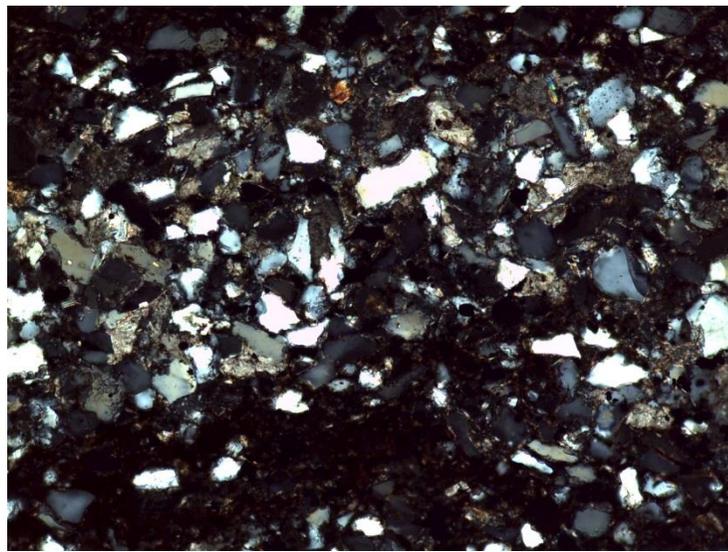
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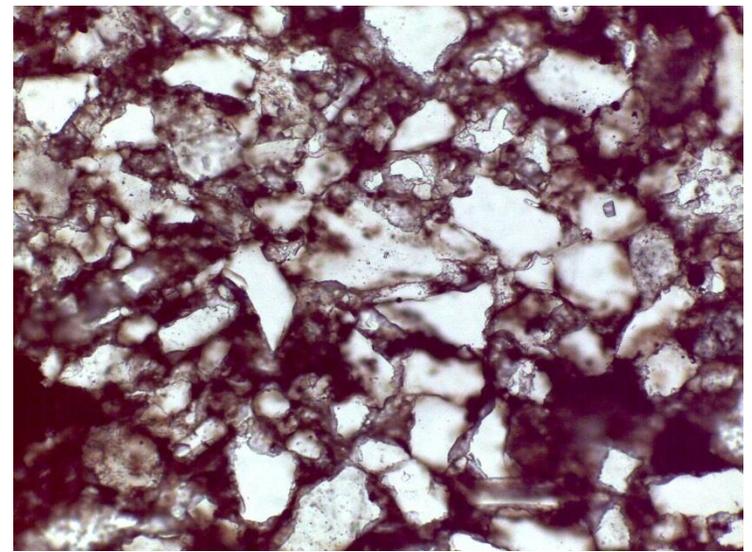
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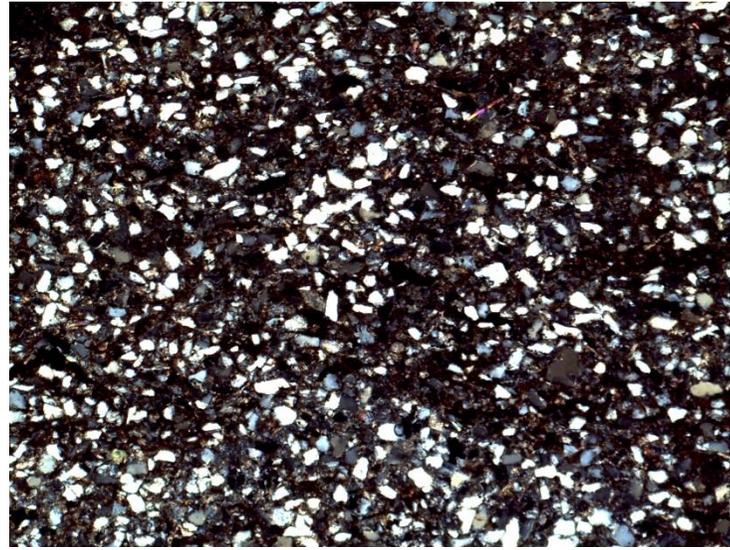
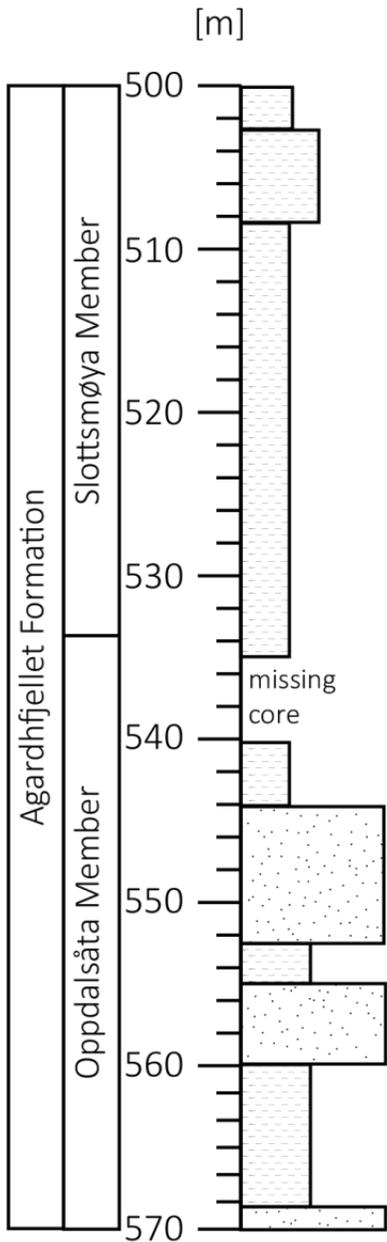


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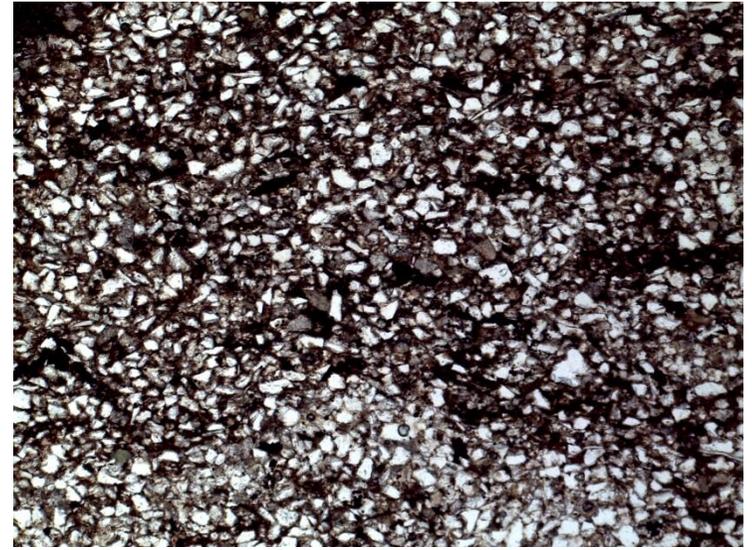
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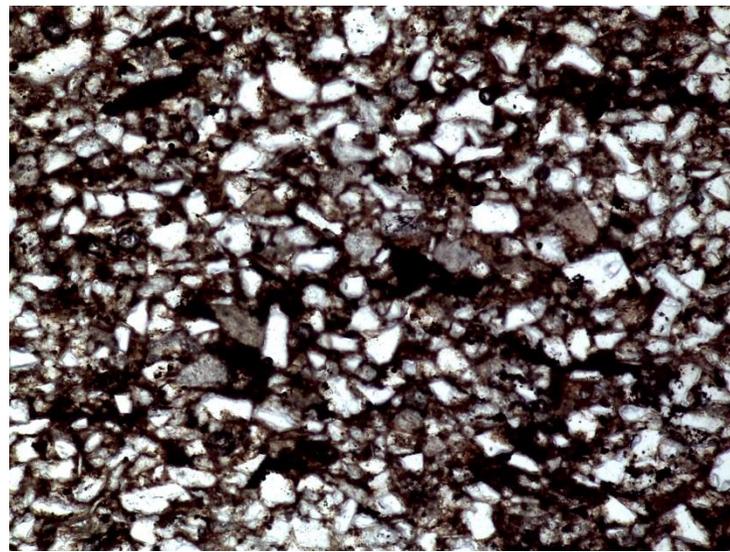
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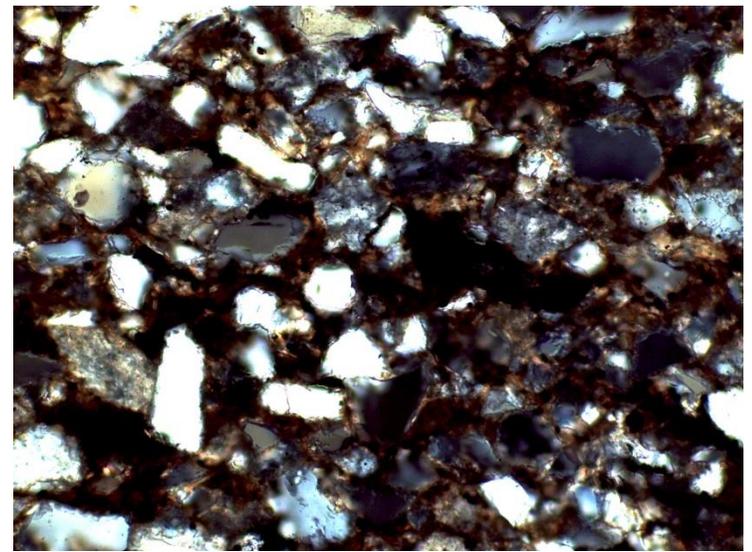
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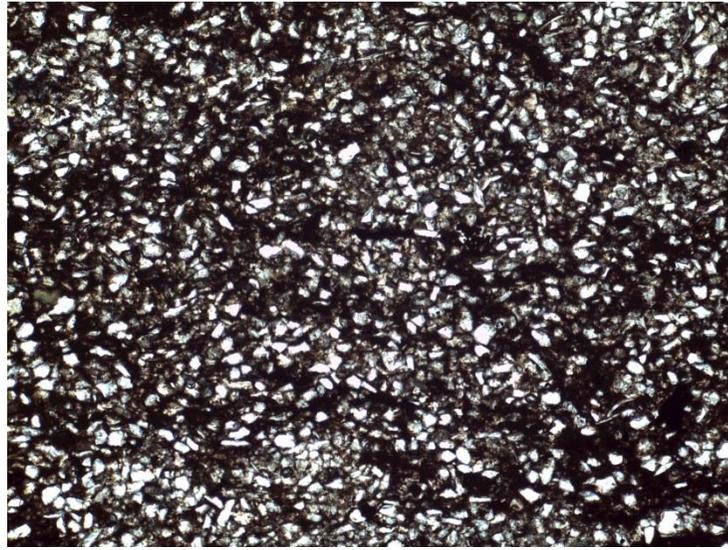
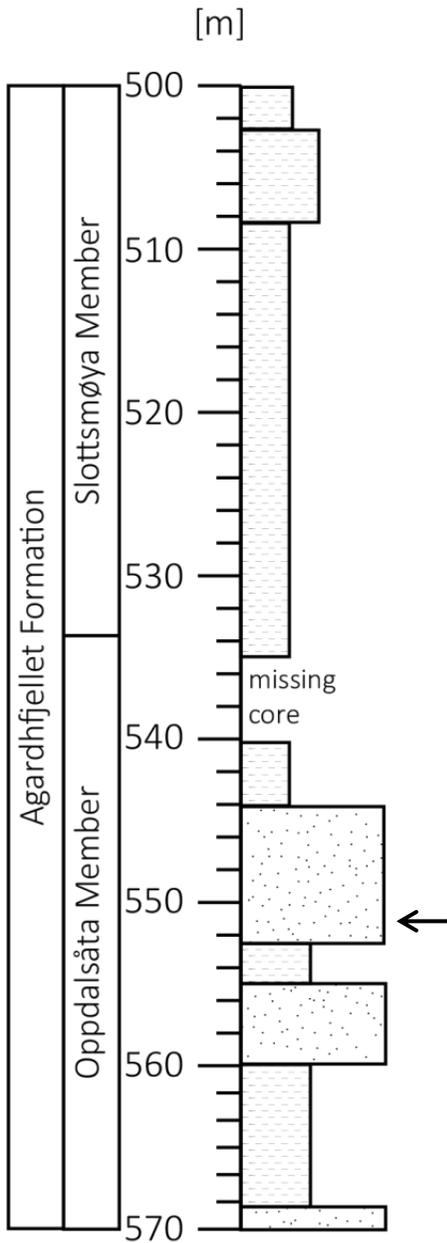


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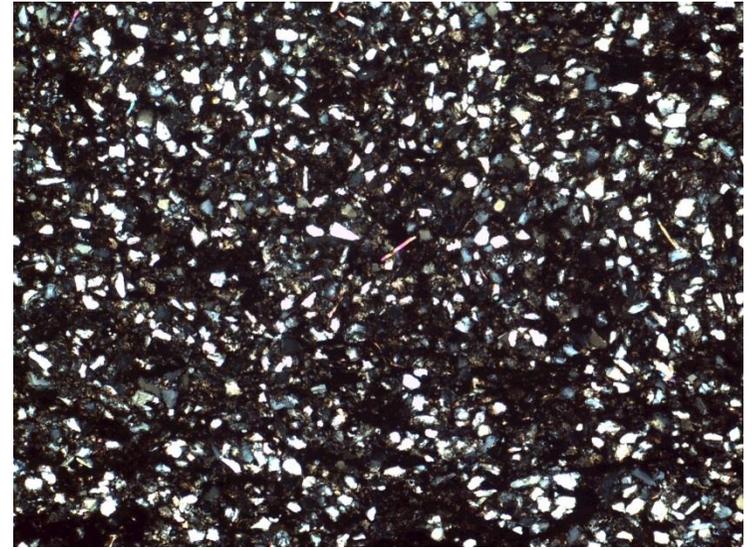
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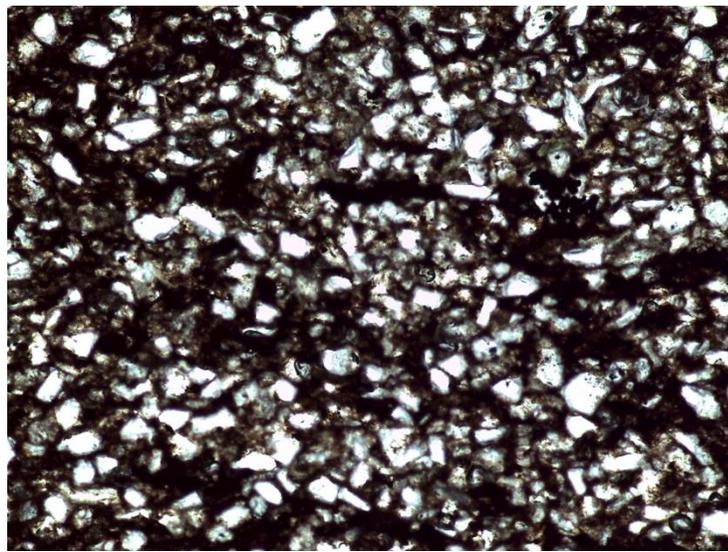
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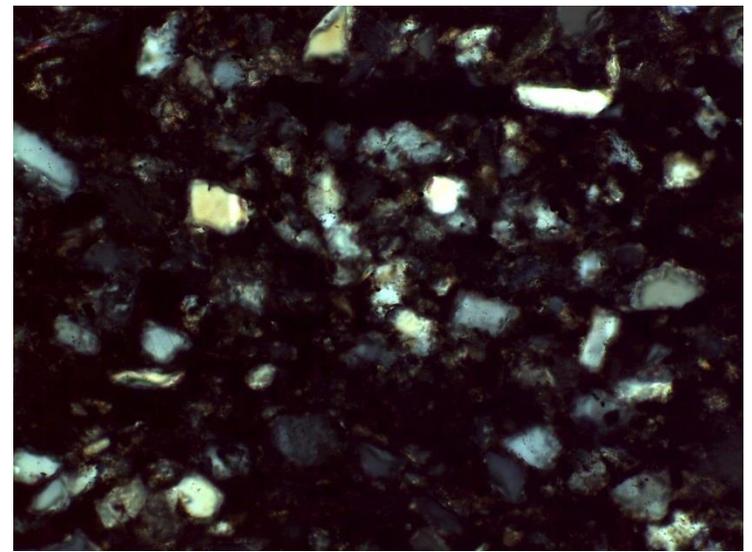
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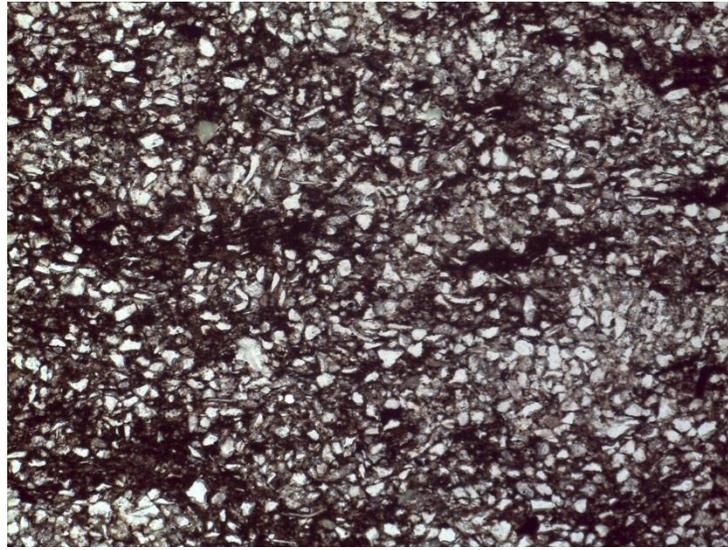
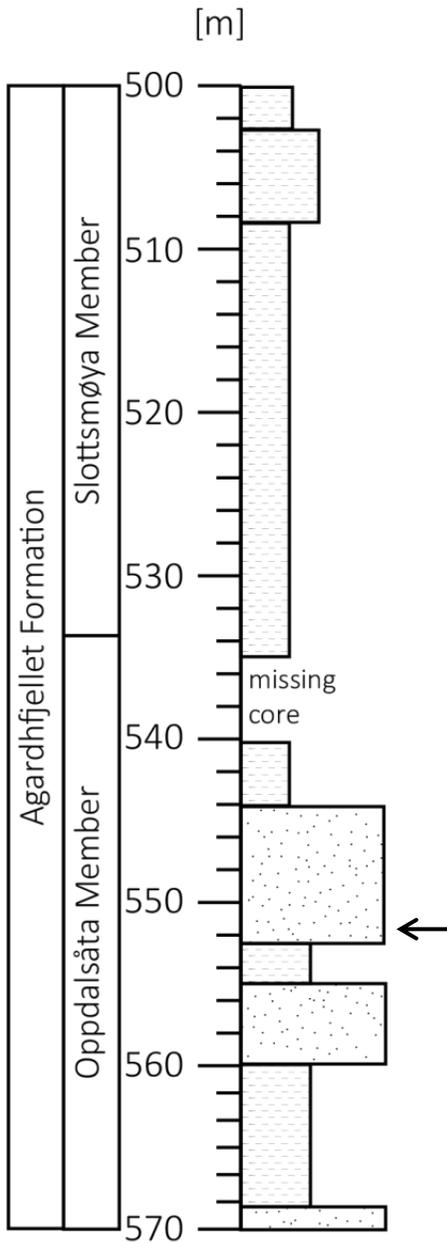


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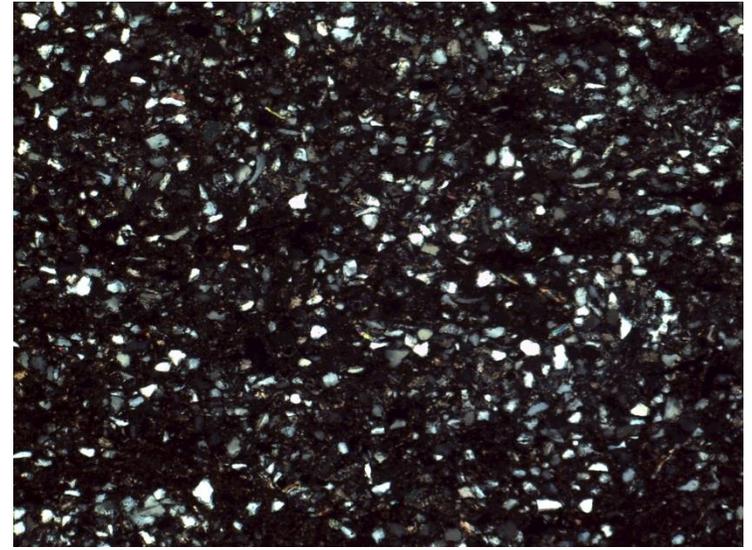
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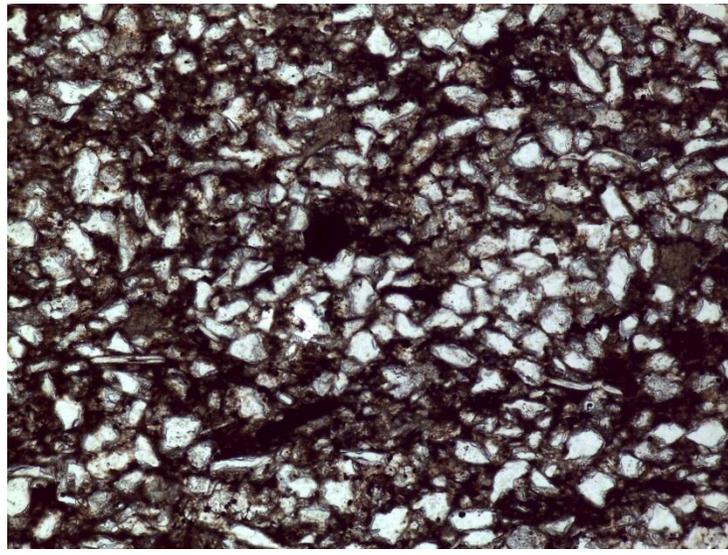
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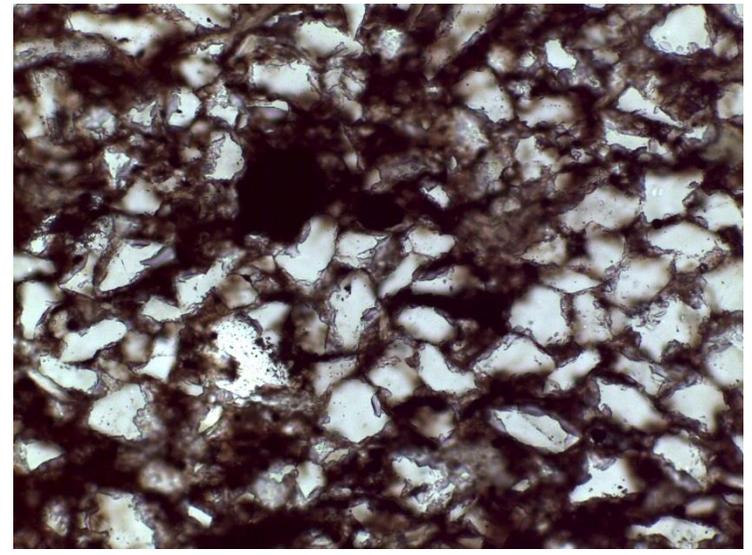
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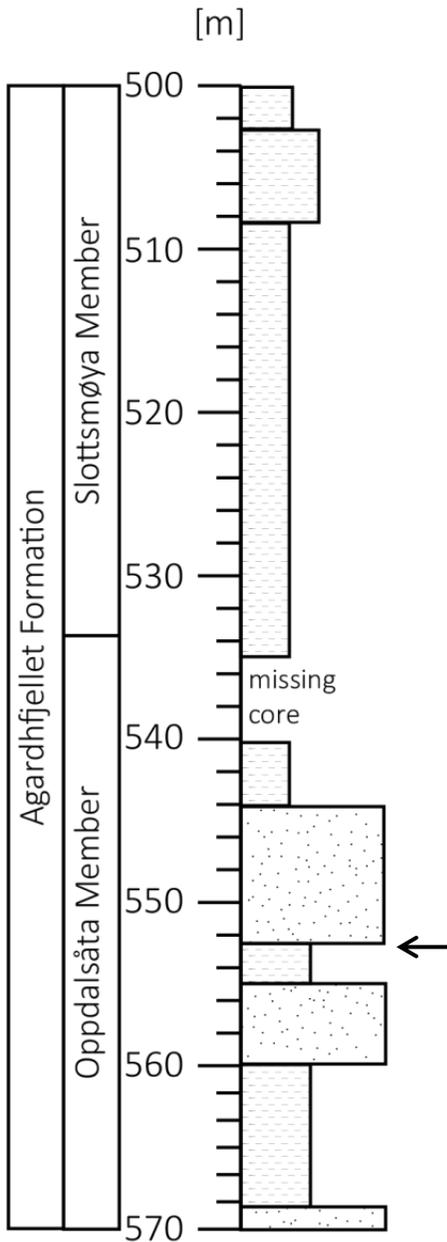


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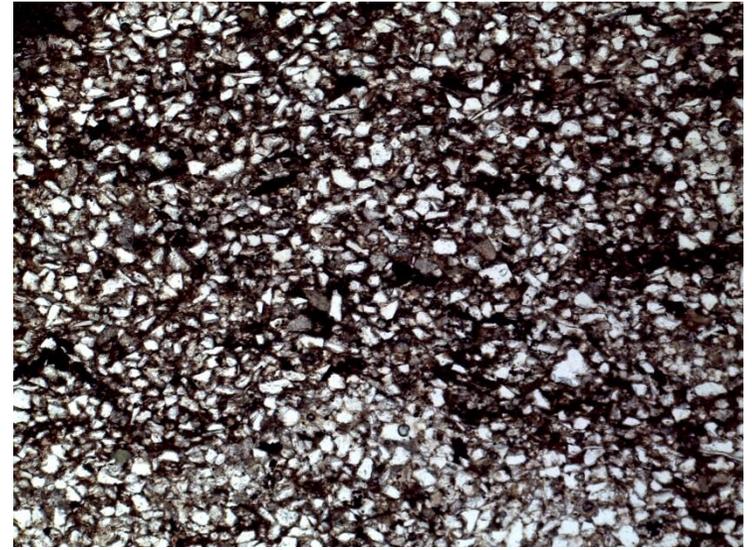
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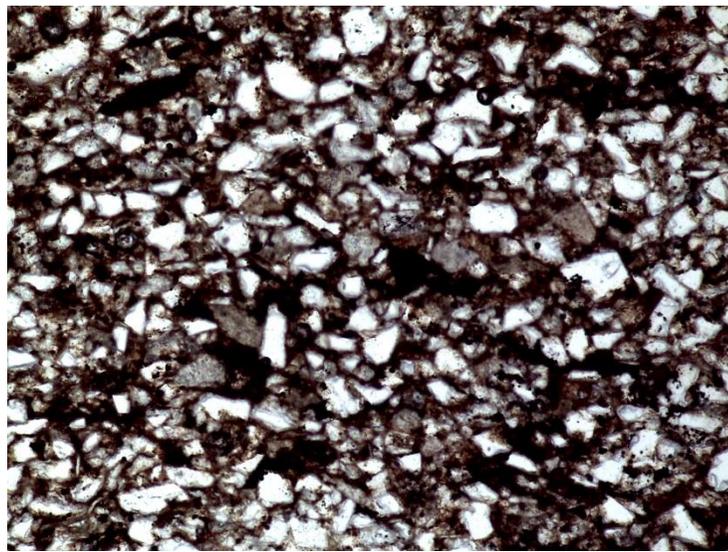
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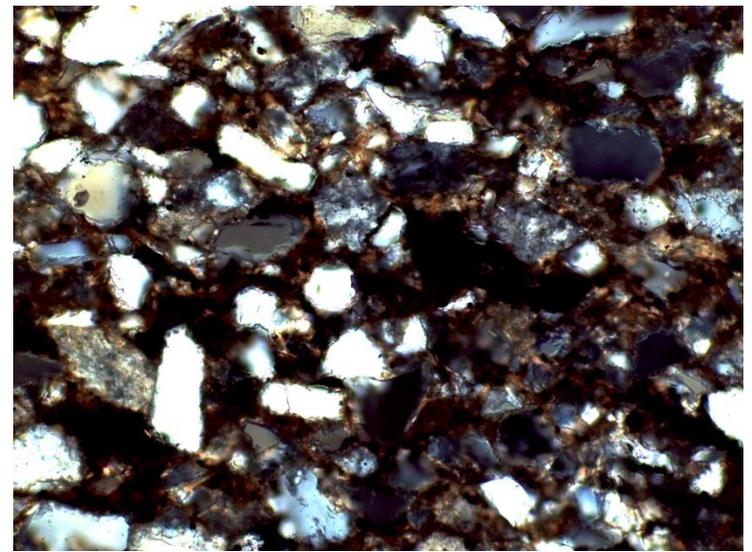
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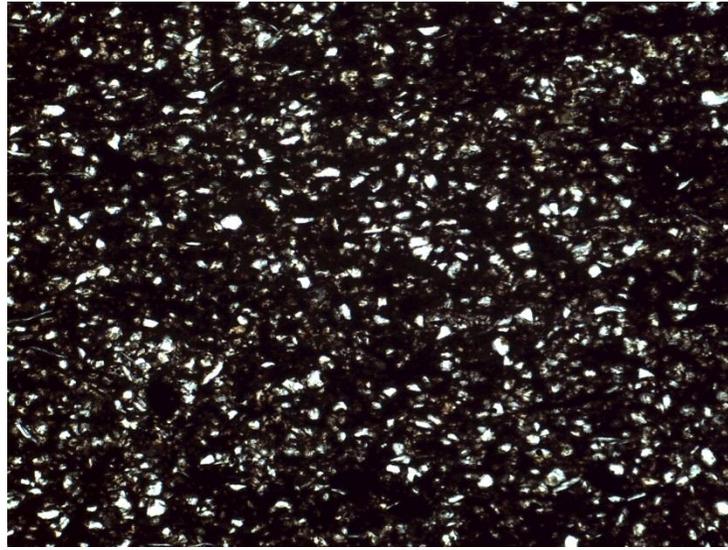
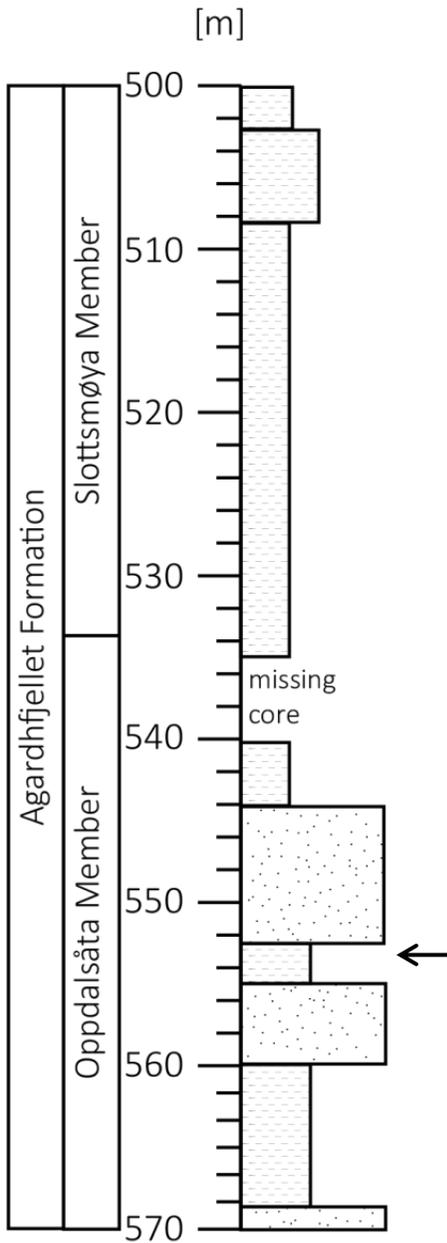


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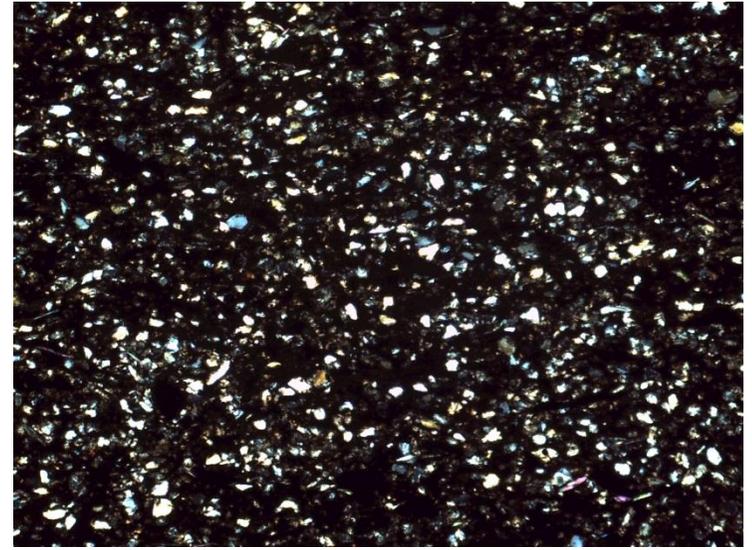
Thin section preparation: Durham University

All scale bars = 500 μ m

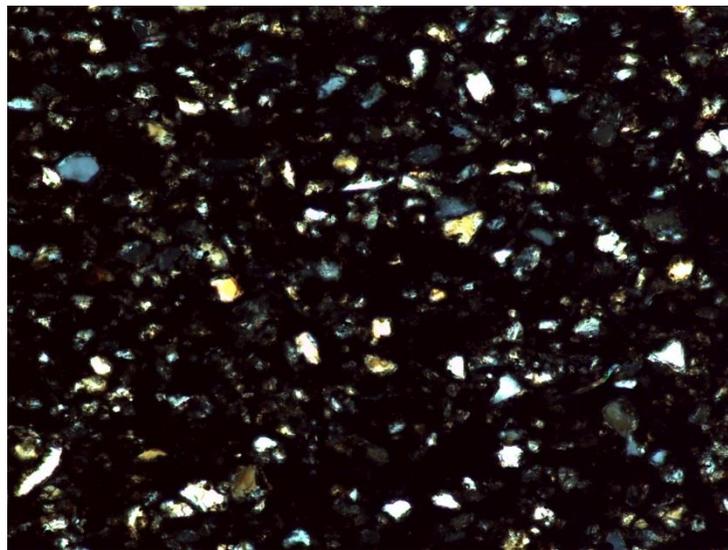
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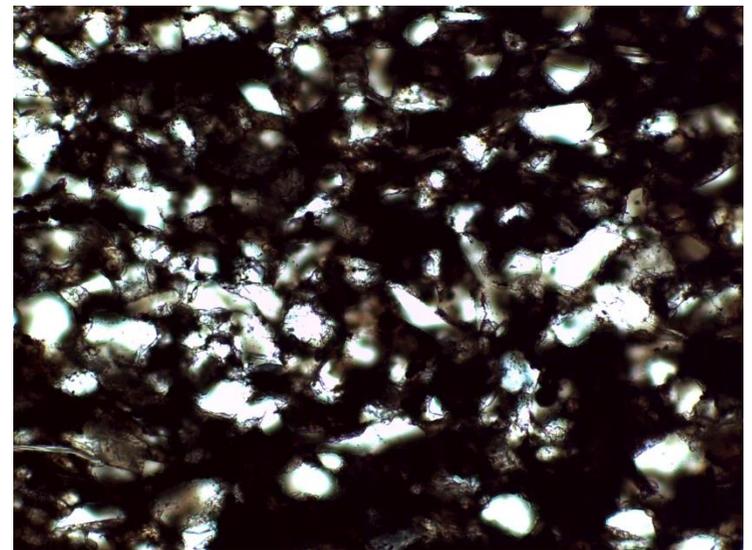
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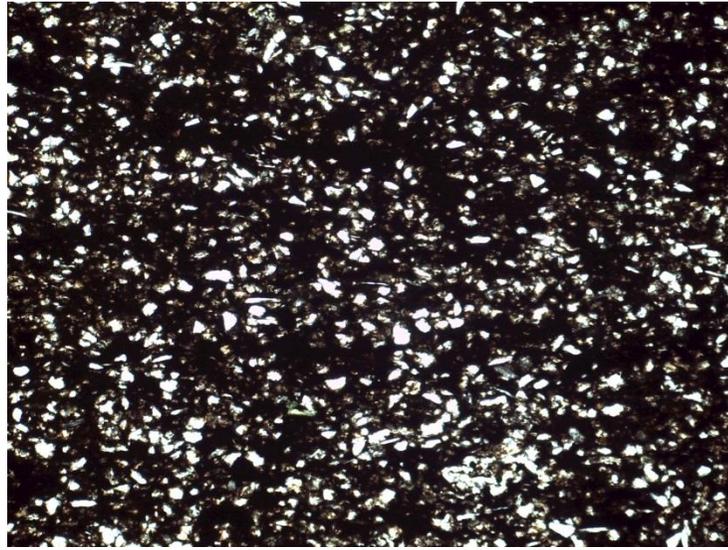
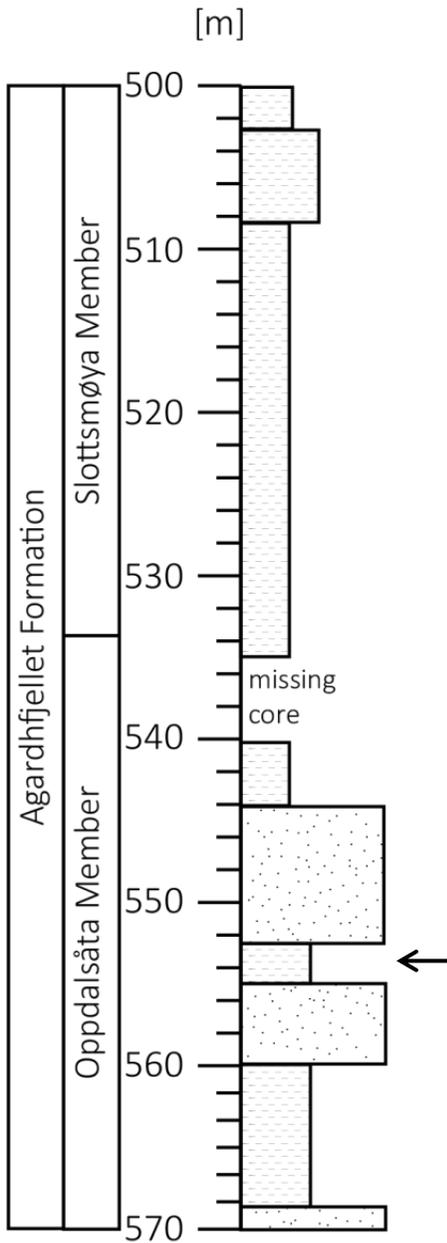


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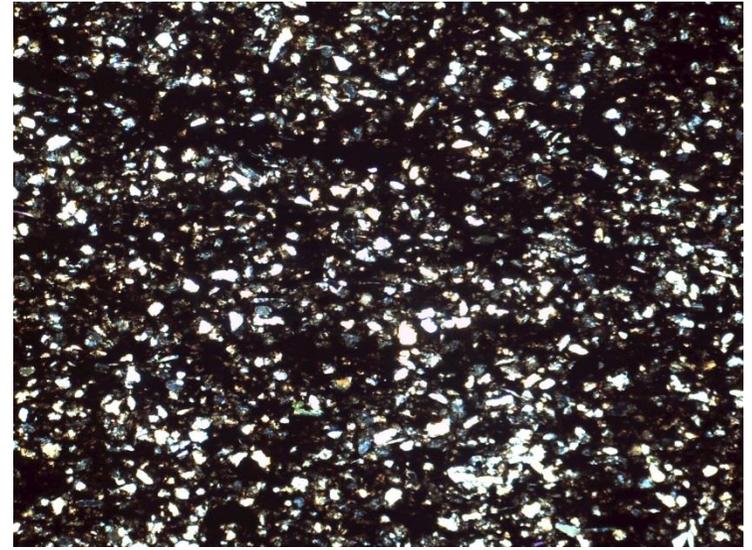
Thin section preparation: Durham University

All scale bars = 500 μ m

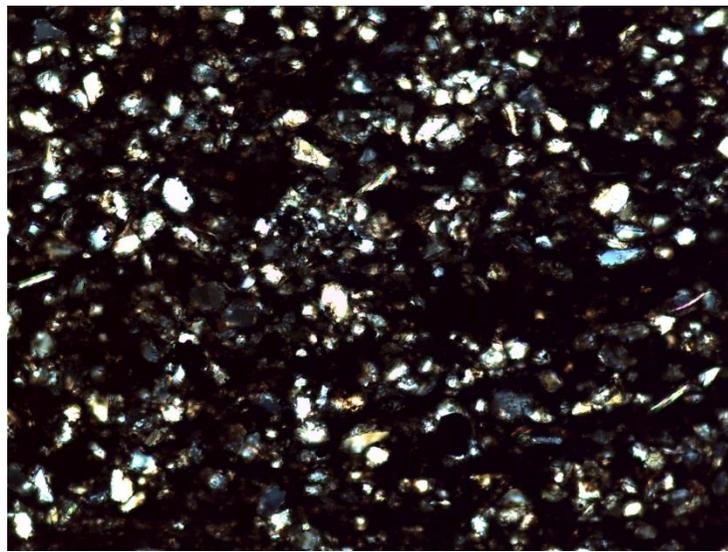
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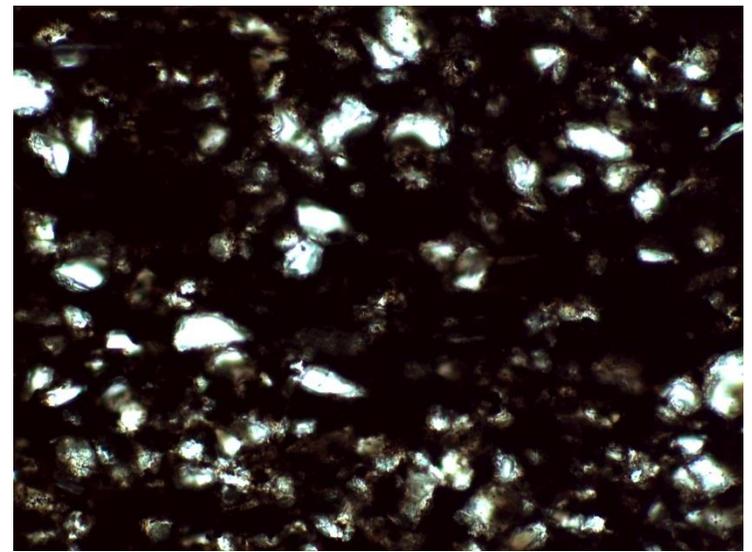
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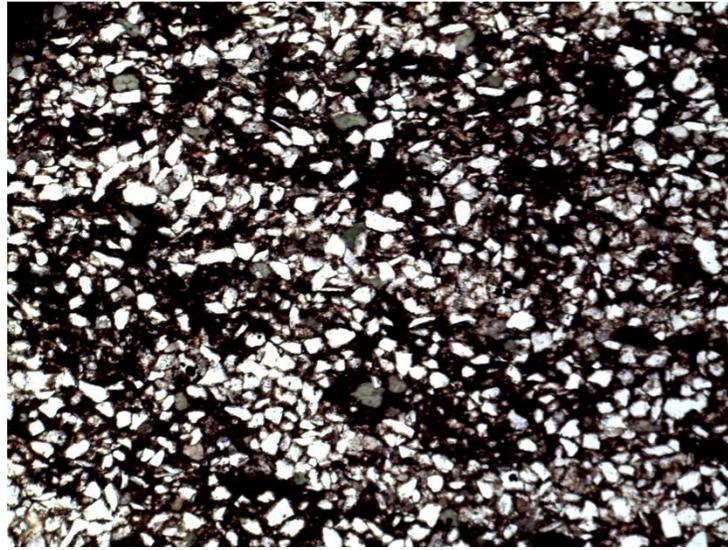
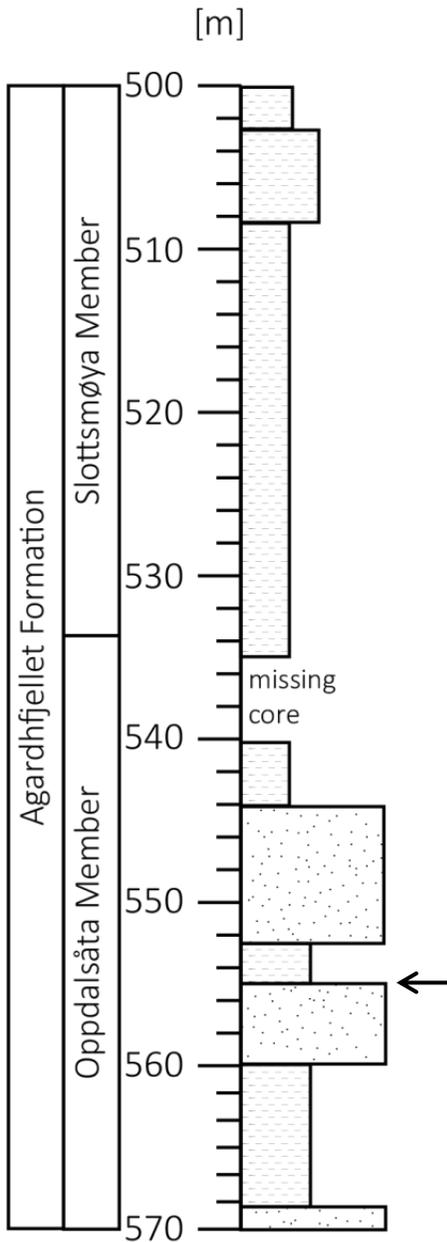


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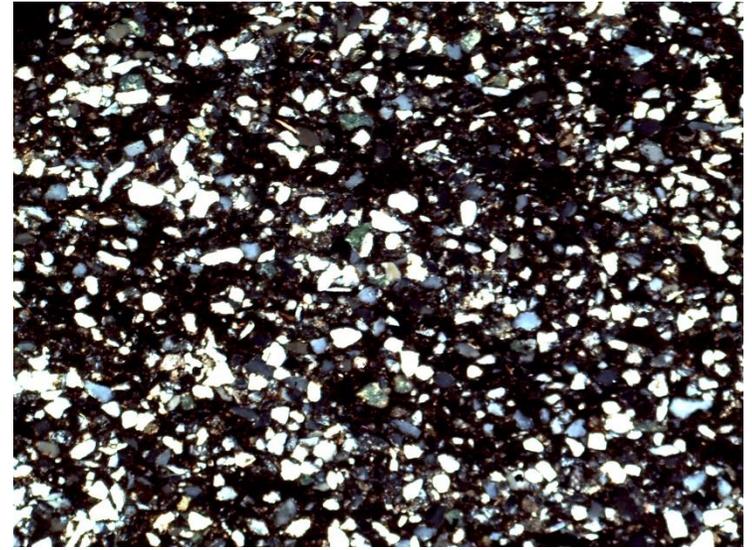
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All scale bars = 500 μ m

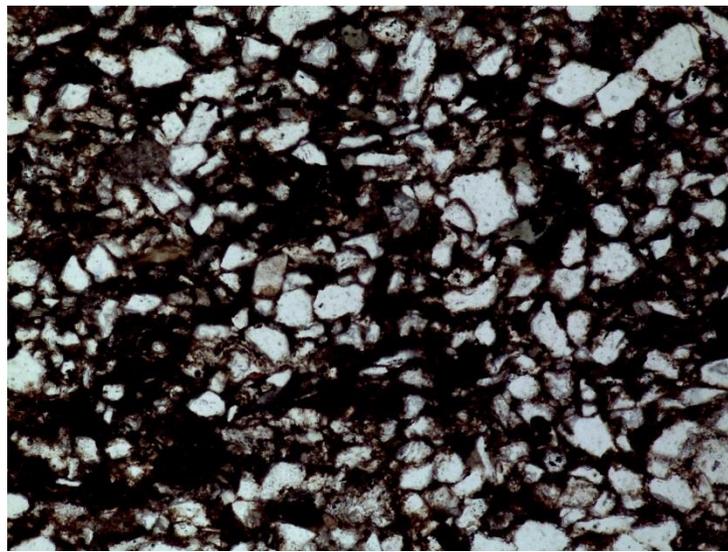
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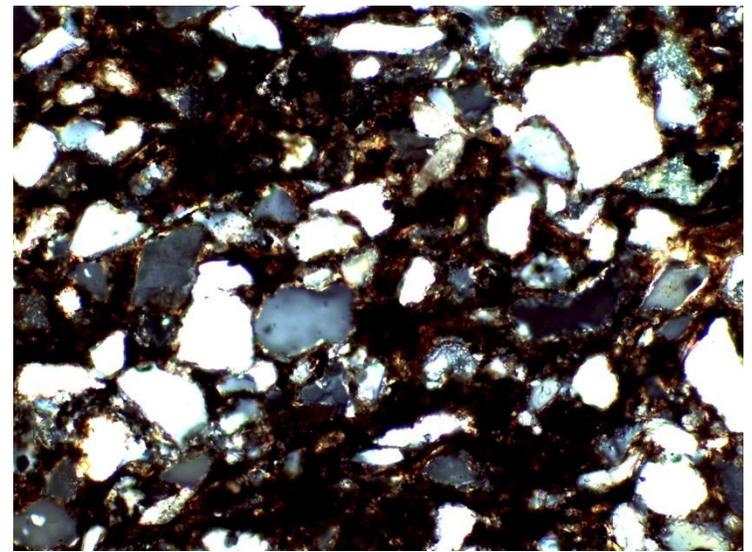
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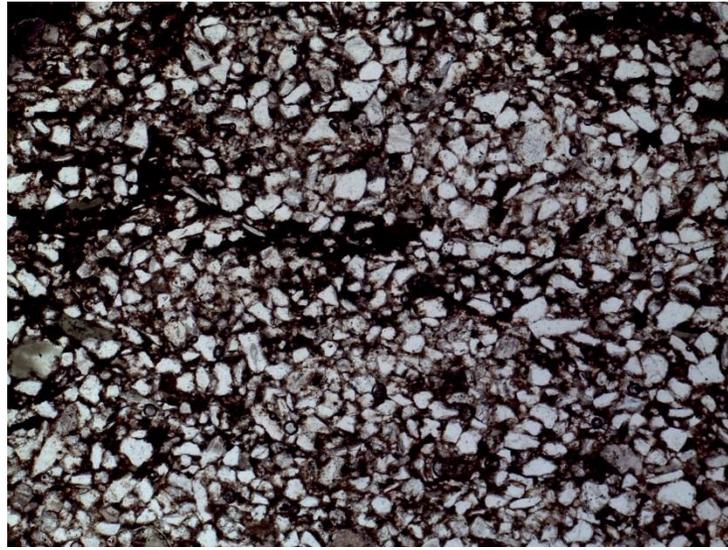
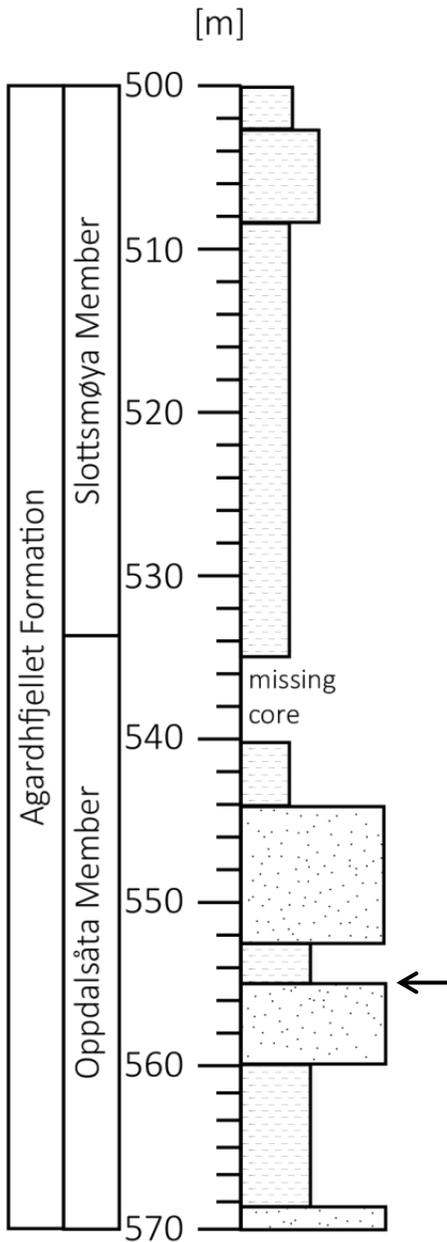


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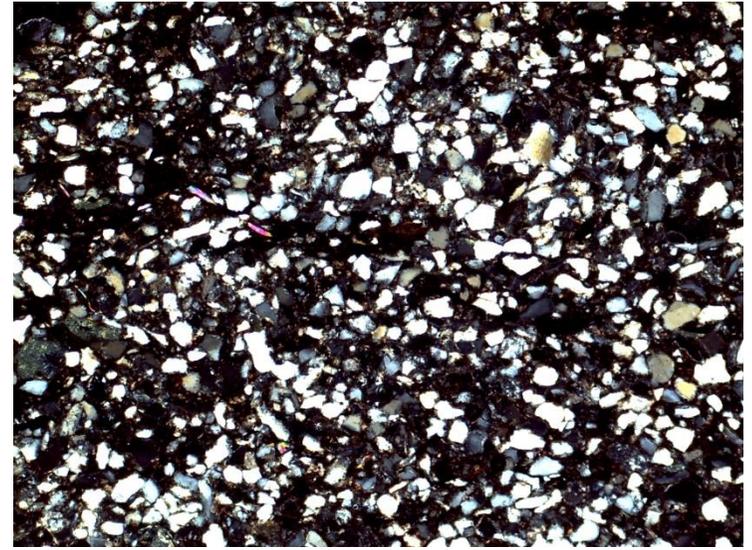
Thin section preparation: Durham University

All scale bars = 500 μ m

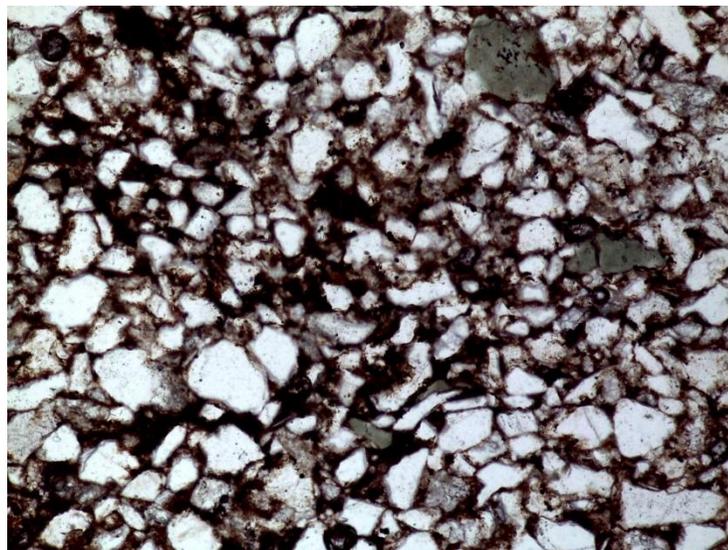
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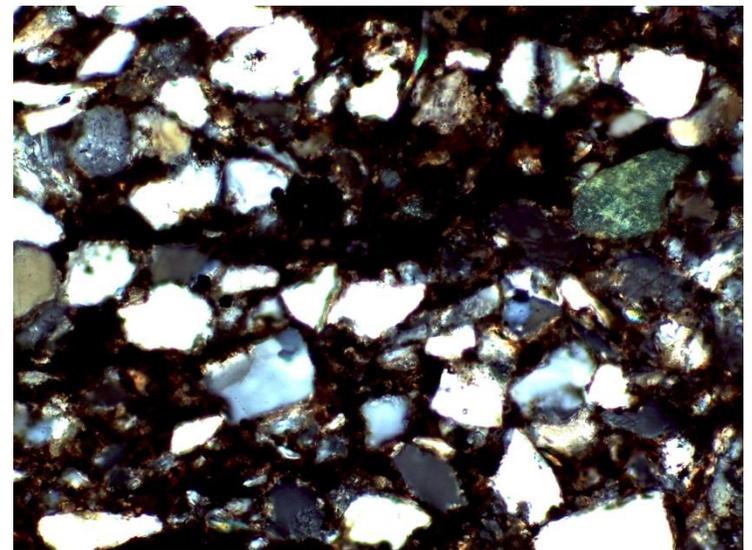
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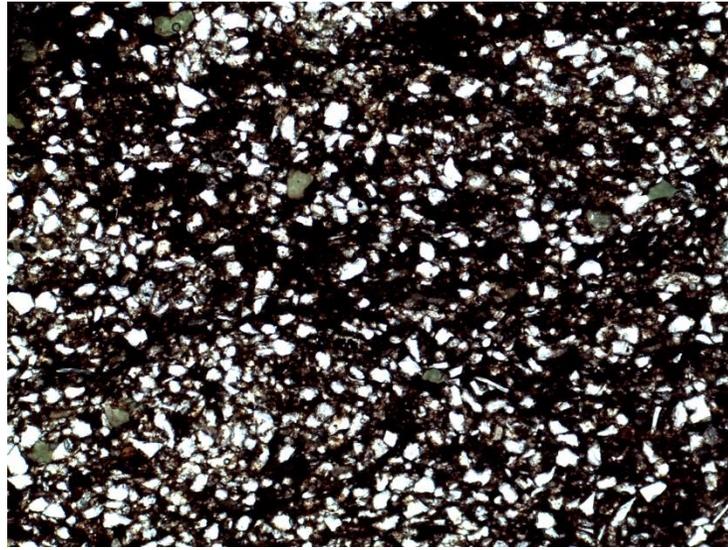
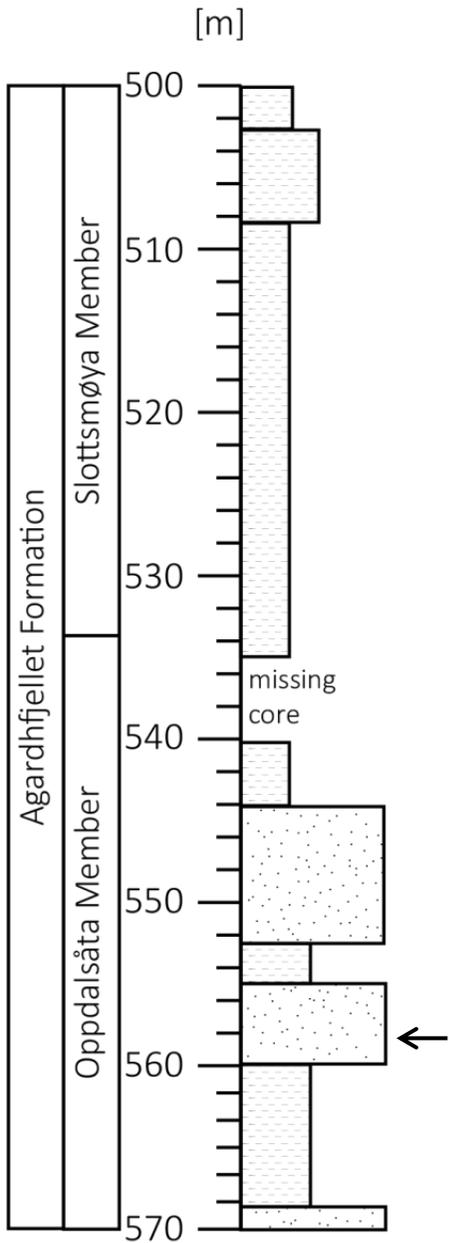


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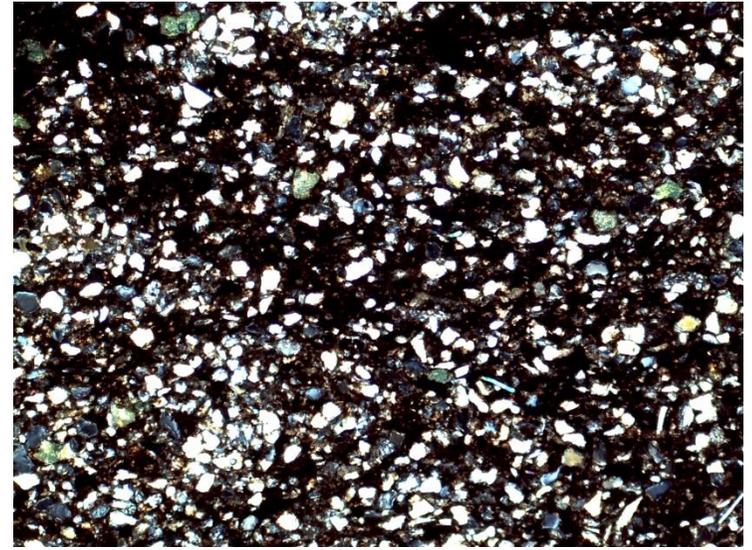
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All scale bars = 500 μ m

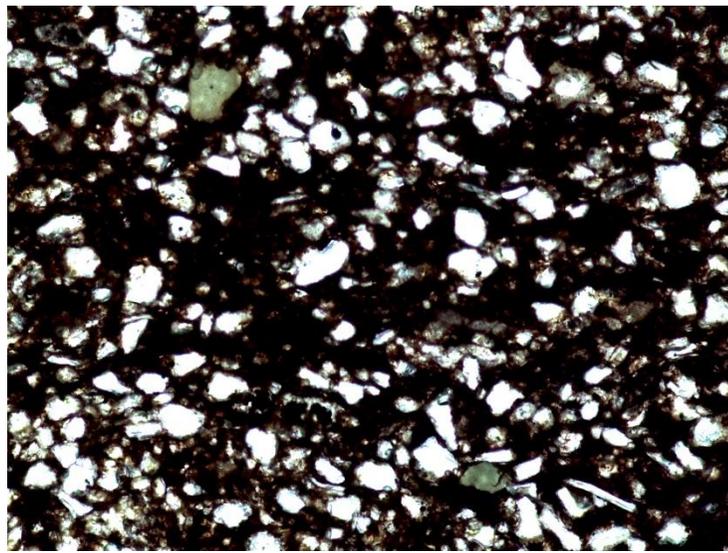
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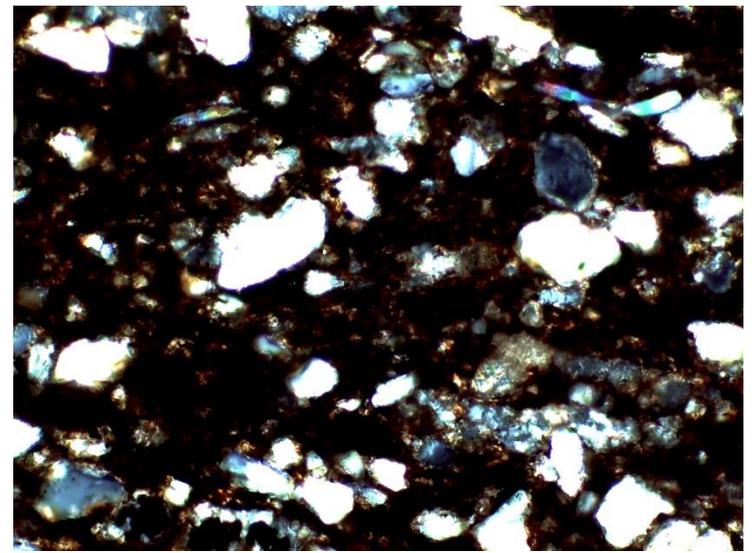
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XPL



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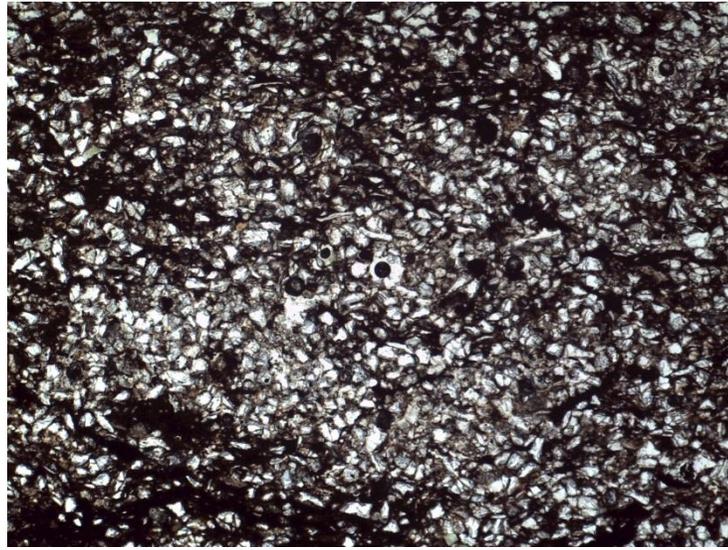
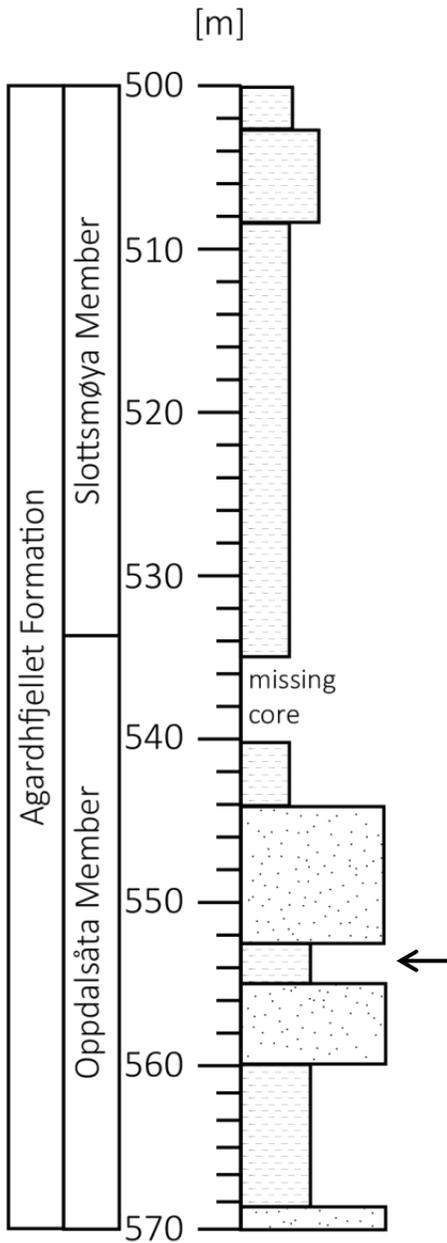


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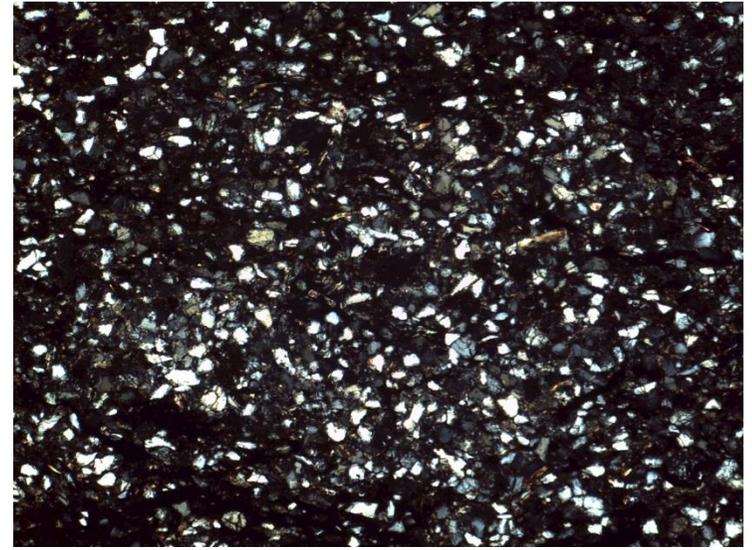
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All scale bars = 500 μ m

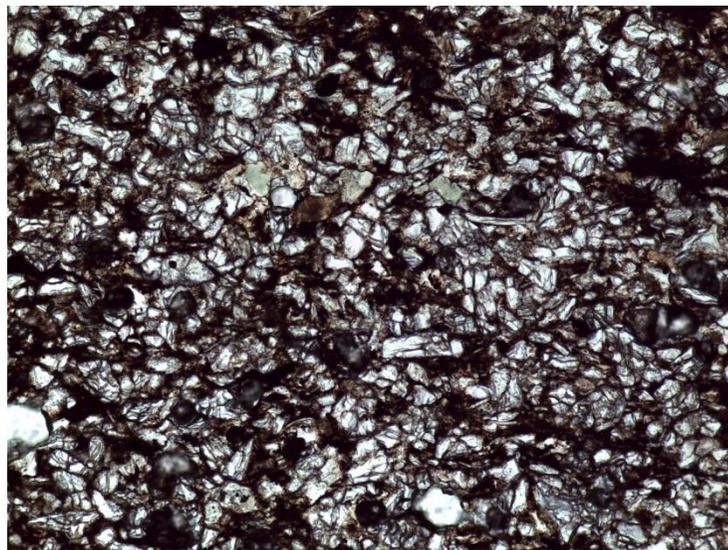
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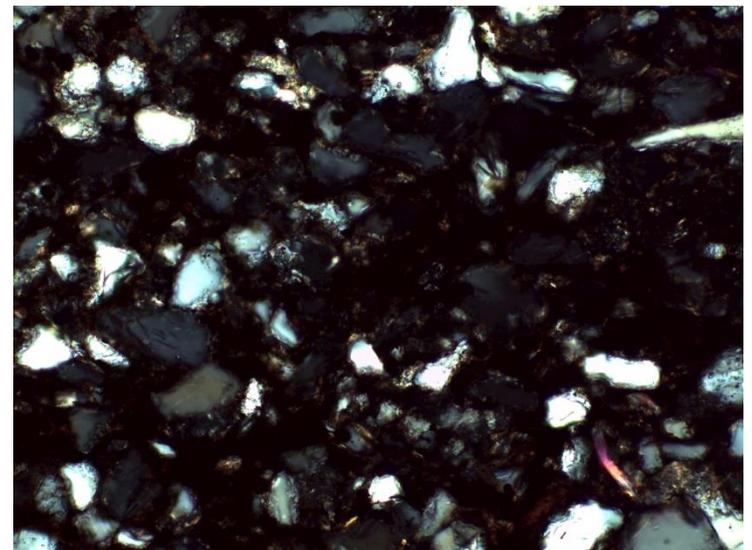
PPL



XPL



PPL

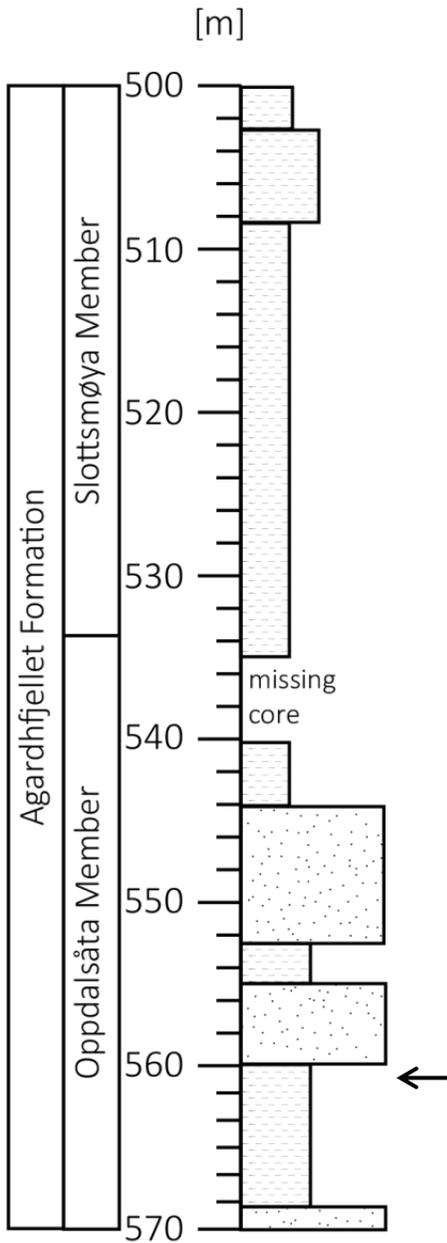


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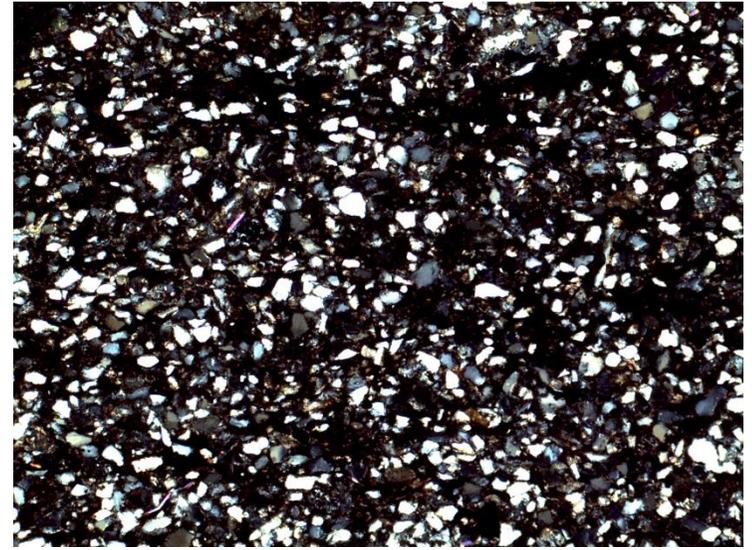
Thin section preparation: Durham University

All scale bars = 500 μ m

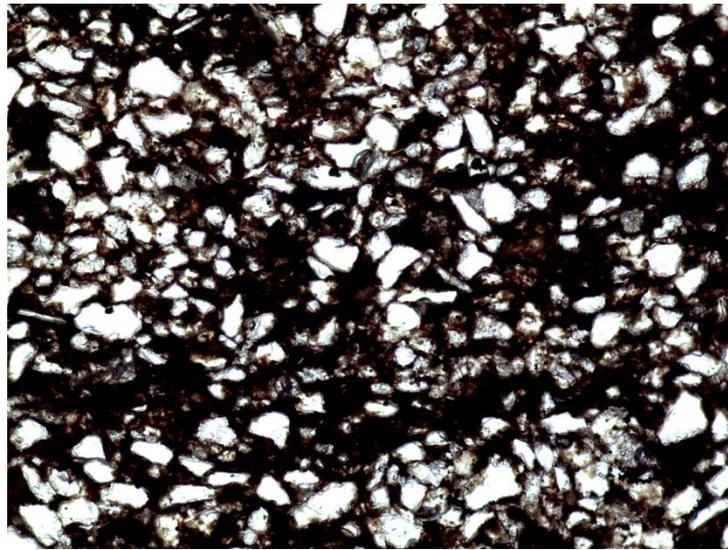
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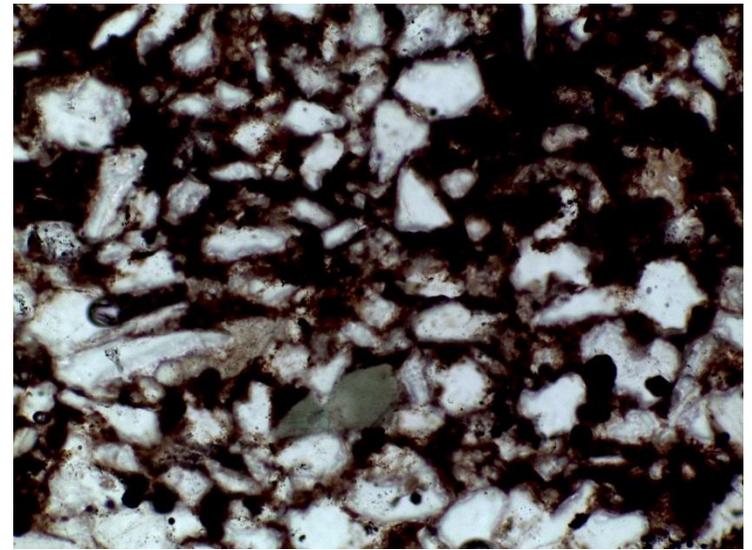
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XPL



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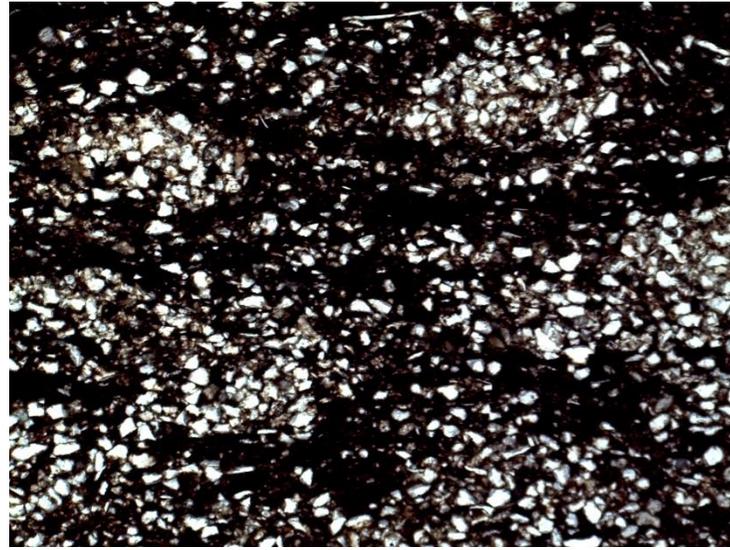
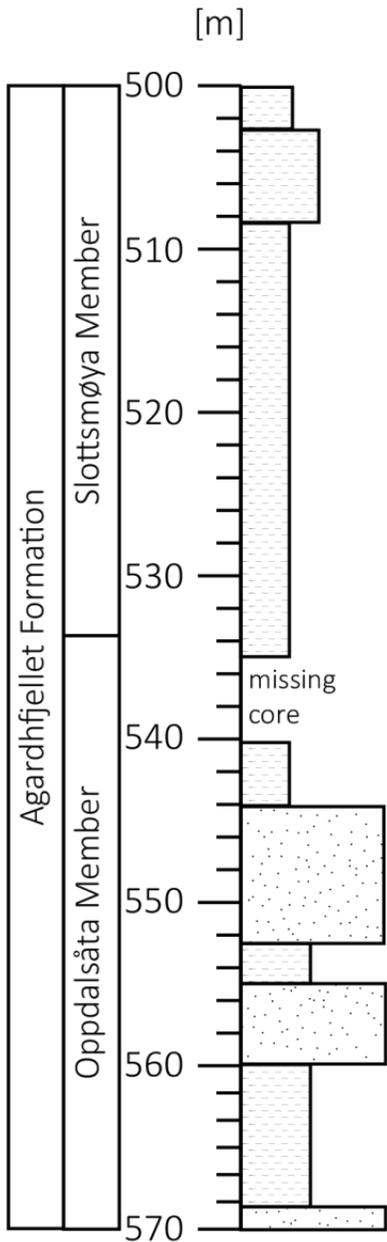


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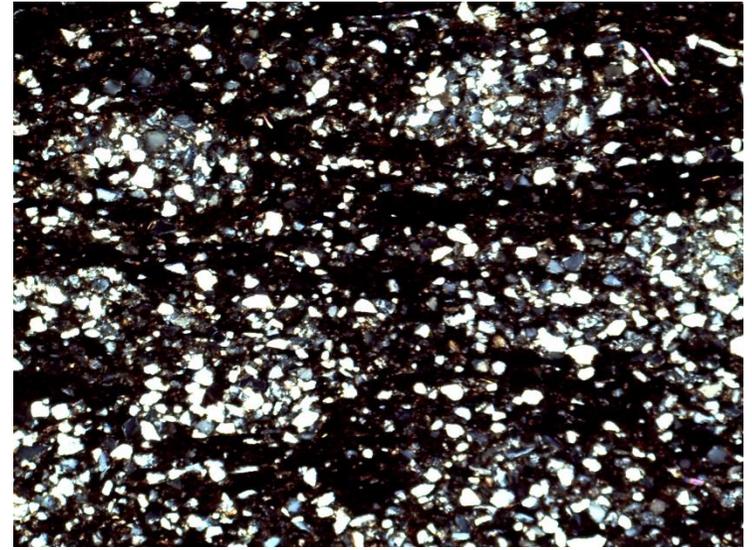
Thin section preparation: Durham University

All scale bars = 500 μ m

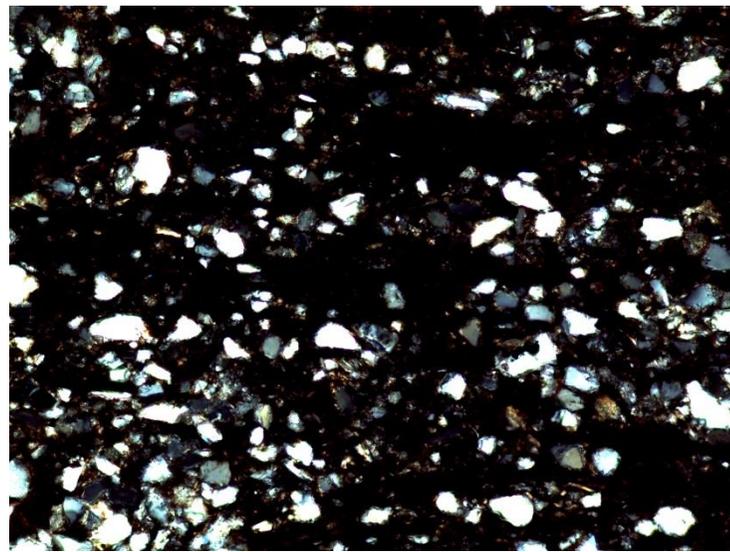
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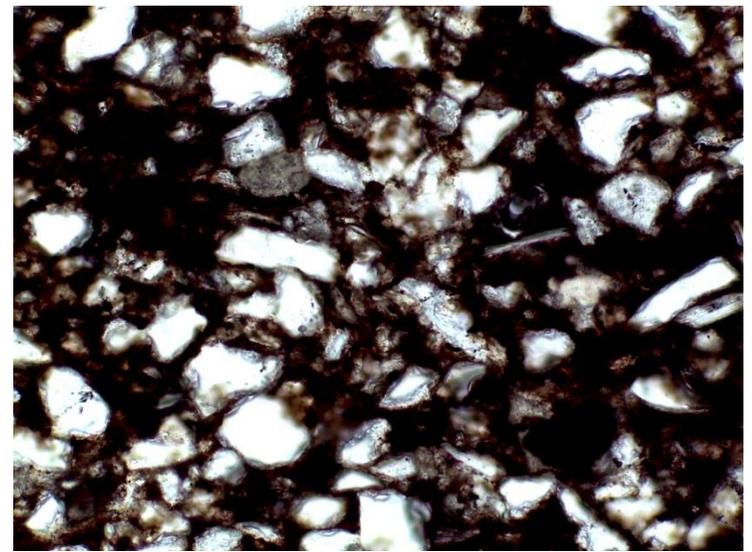
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XPL



XPL

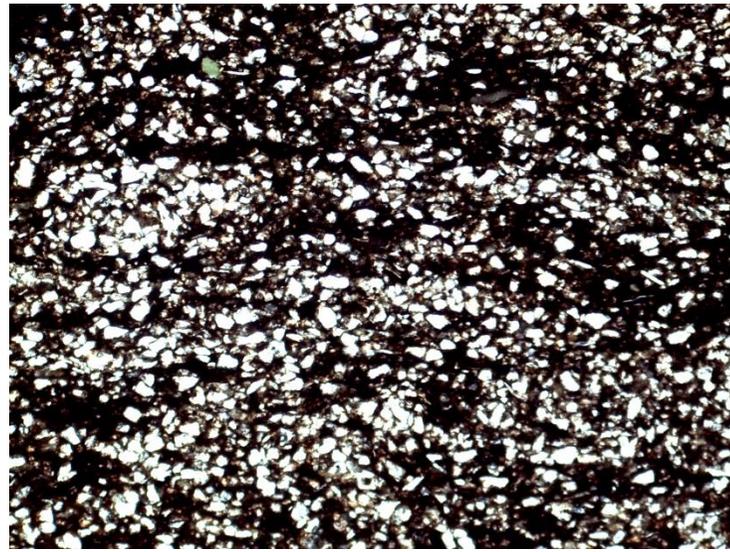
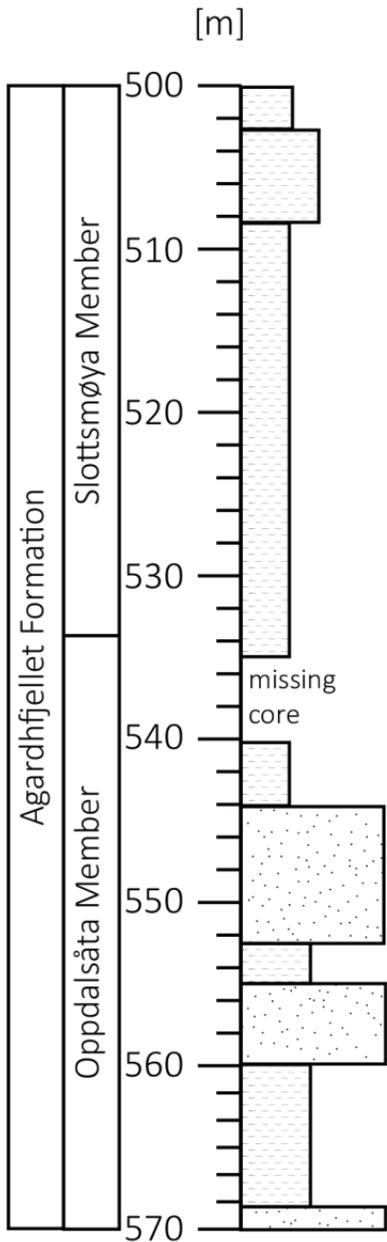


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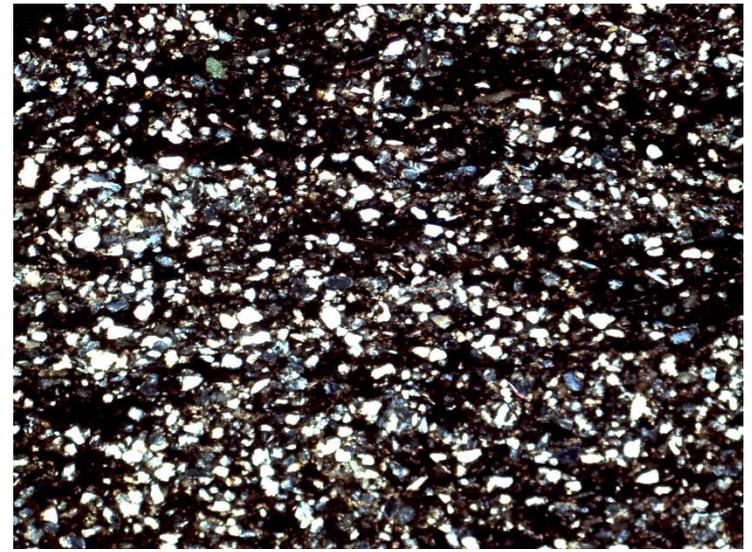
Thin section preparation: Durham University

All scale bars = 500 μ m

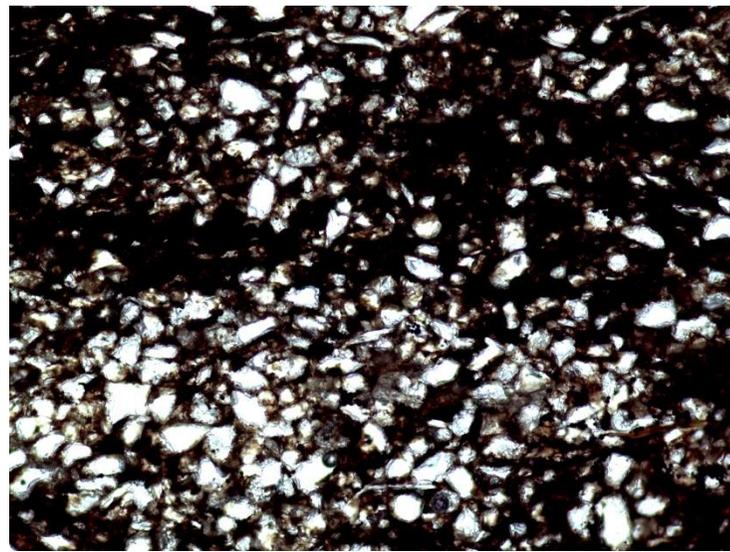
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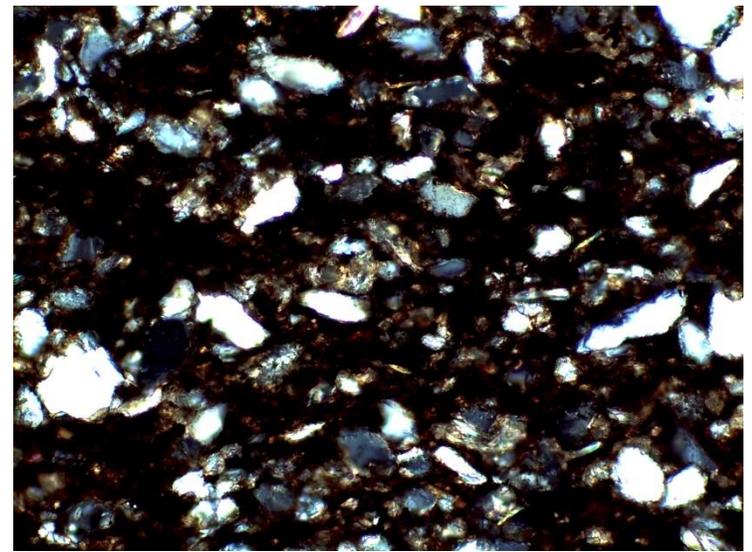
PPL



XPL



PPL



XPL

Thin section preparation: Durham University

All scale bars = 500 μ m