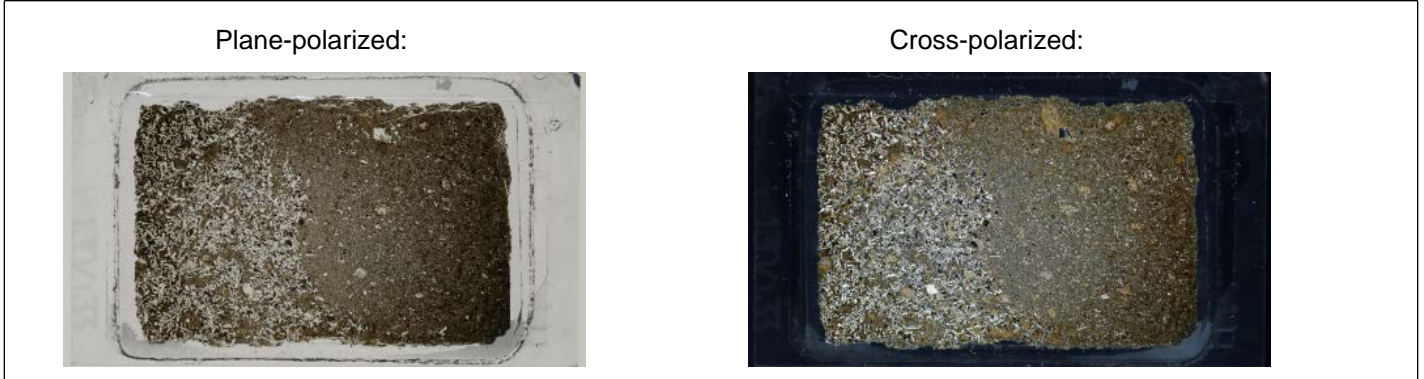


THIN SECTION LABEL ID: **392-U1580A-45R-1-W 130/133-TSB-TS 11** Thin section no.: 11
 Observer: PD Piece no.: 1
 Unit/subunit: 1

Thin section summary: Sample U1580A-45R-1W 130/133 is a highly altered basalt. Half of the sample is aphanitic and the other half is fine grained. Only plagioclase and oxides remain in the groundmass. Phenocryst pseudomorphs of potentially olivine exist in the fine grained half, these are completely replaced with phyllosilicates.



Igneous Petrology

Lithology: basalt

Groundmass grain size (avg.) fine-grained

Texture 1: microcrystalline

Texture 2:

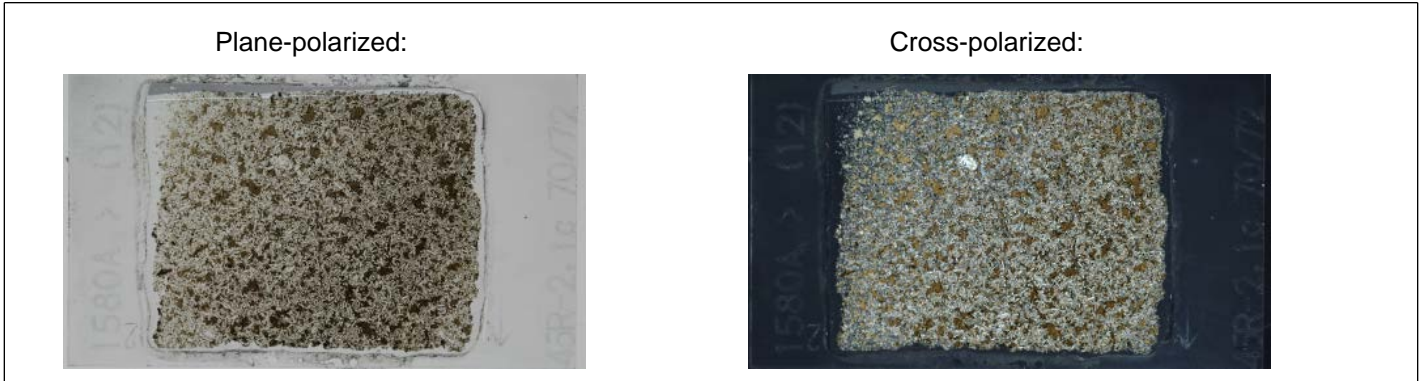
Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Olivine	5	100	1	1	subhedral	Possible olivine pseudomorphs, completely replaced

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Plagioclase	42	25	0.1	euohedral-subhedral	1/2 is ~0.2mm the other half is ~0.05mm
Opauques	8	0	0.05	subhedral	half ~0.2 and half ~0.01mm

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-45R-2-W 70/72-TSB-TS 12** Thin section no.: 12
 Observer: PD Piece no.: 1
 Unit/subunit: 1

Thin section summary: Sample U1580A-45R-2W 70/72 is a plagioclase olivine-phyric basalt. Phenocrystic olivine has been recognized only by it's pseudomorphs which are now completely replaced with clay minerals. Most of the clinopyroxene is also replaced by clay minerals. One plagioclase phenocryst is present and the groundmass plagioclase is partially altered.



Igneous Petrology

Lithology: plagioclase-olivine phyric basalt

Groundmass grain size (avg.): fine-grained

Texture 1: moderately phyric

Texture 2: holocrystalline

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Olivine	8	100	1	1.5	euhedral-subhedral	
Plagioclase	1	20	1.5	1.5	euhedral	

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	25	100	0.25	subhedral	
Plagioclase	50	20	0.4	euhedral-subhedral	
Clinopyroxene	20	80	0.15	0.15	
Opagues	5	0	0.1	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-45R-3-W 66/69-TSB-TS 13**

Thin section no.: 13

Unit/Subunit:

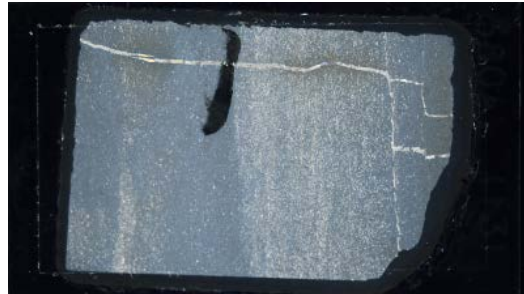
Observer: PD

Thin section summary: Sample 392-U1580A-45R-3-W 66/69-TSB-TS 13 consists of large subrounded carbonate grains in a microcrystalline silica matrix. Carbonate grains show high birefringence under cross polarized light. Opaque minerals are common.

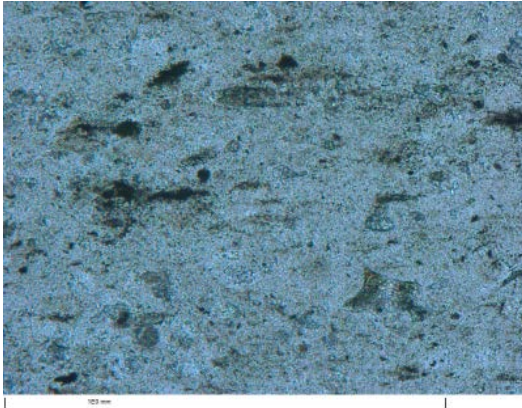
Plane-polarized:



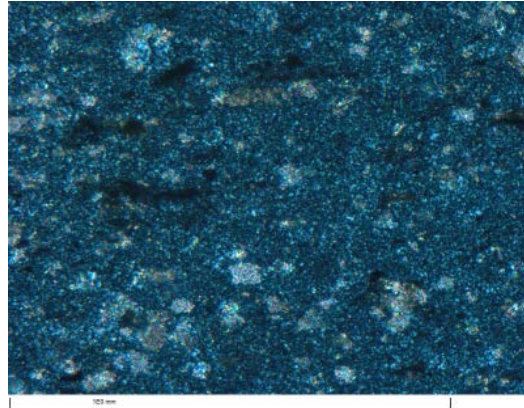
Cross-polarized:



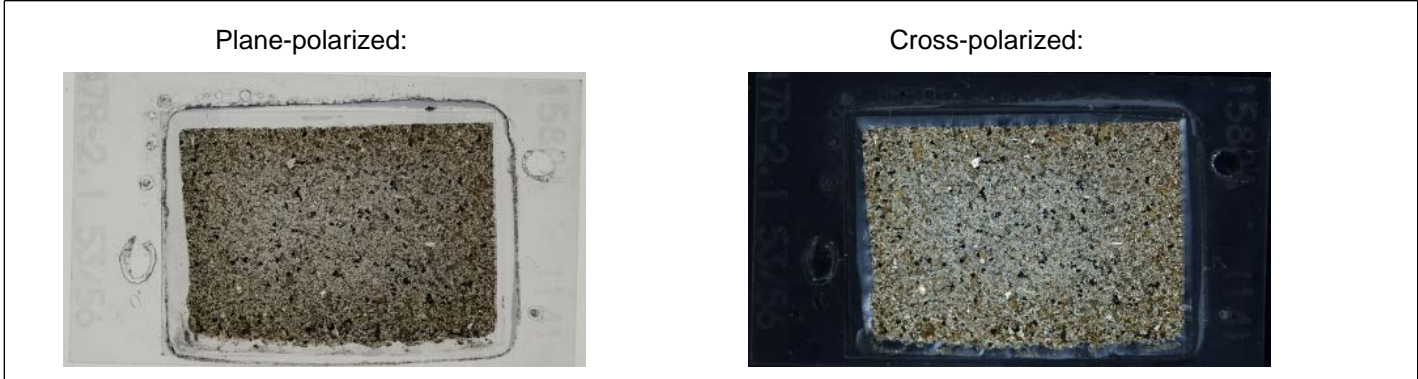
Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)



THIN SECTION LABEL ID: **392-U1580A-47R-2-W 54/57-TSB-TS 14** Thin section no.: 14
 Observer: PD Piece no.: 1
 Unit/subunit: 2
 Thin section summary: Sample U1580A-47R-2W 54/57 is an aphyric basalt. It is highly altered with only groundmass plagioclase and oxides surviving. The opaque oxides are the largest groundmass phase, larger than the plagioclase. Very little clinopyroxene in the groundmass survives, and everything else is unidentifiable alteration products.



Igneous Petrology

Lithology: aphyric basalt

Groundmass grain size (avg.): fine-grained

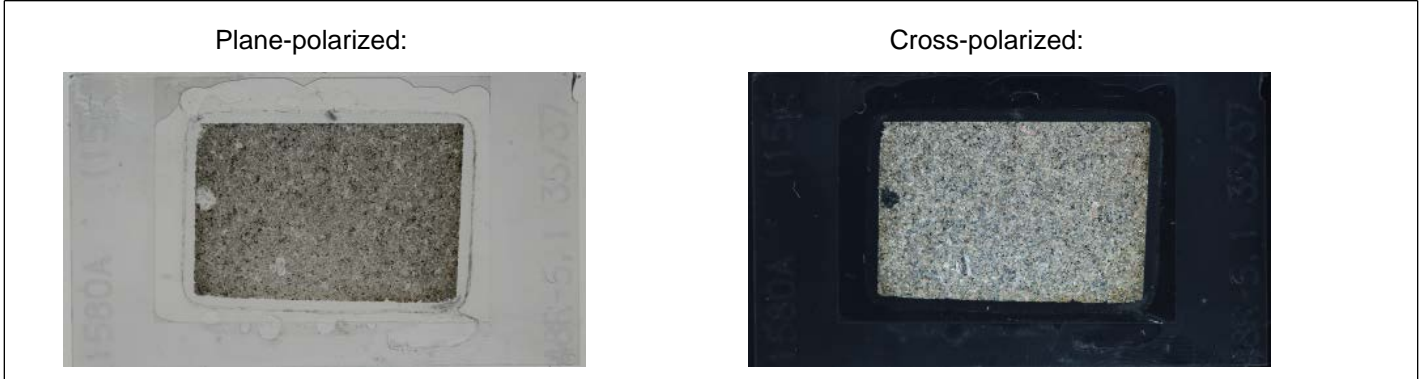
Texture 1: aphyric

Texture 2:

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Plagioclase	40	20	0.15	euhedral-subhedral	
Clinopyroxene	20	90	0.1	0.1	
Opaques	5	0	0.3	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-48R-5-W 35/37-TSB-TS 15** Thin section no.: 15
 Observer: PD Piece no.: 1
 Unit/subunit: 3
 Thin section summary: Sample U1580A-48R-5W 35/37 is a plagioclase-phyric basalt. Plagioclase phenocrysts show nice zonation and are partially altered along zones. Clinopyroxenes show evidence of subophitic texture but are heavily altered. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: aphyric basalt

Groundmass grain size (avg.) fine-grained

Texture 1: sparsely phyric

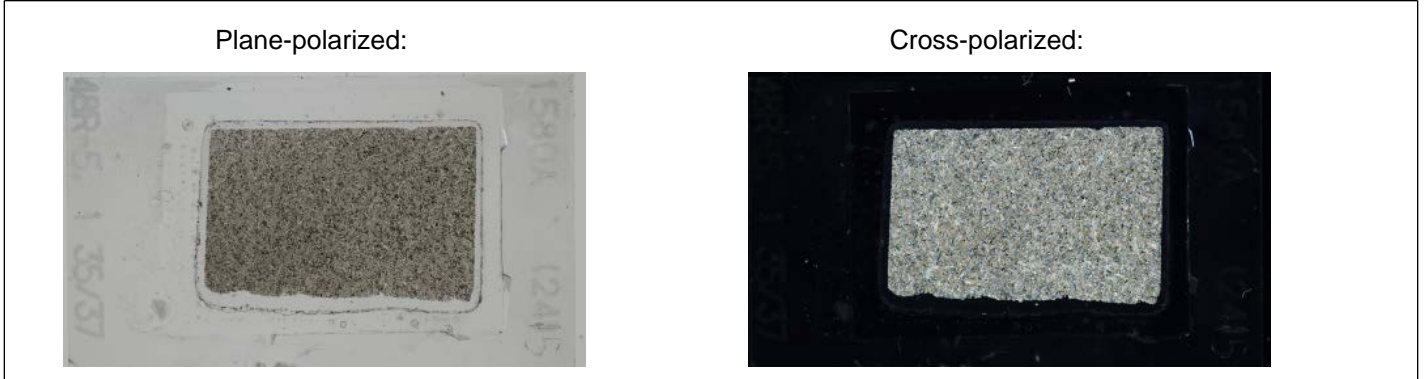
Texture 2:

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	1	20	1.5	1.5	euhedral	

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	15	100	0.3	subhedral	
Plagioclase	45	10	0.25	euhedral-subhedral	
Clinopyroxene	35	75	0.2	0.2	
Opaques	5	0	0.1	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-48R-5-W 35/37-TSB-TS 24** Thin section no.: 24
 Observer: PD Piece no.: 1
Unit/subunit: 3
 Thin section summary: Sample U1580A-48R-5W 35/37 is an aphyric basalt. Groundmass clinopyroxenes show evidence of subophitic texture but are heavily altered. Groundmass plagioclase is partially altered. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: aphyric basalt

Groundmass grain size (avg.): fine-grained

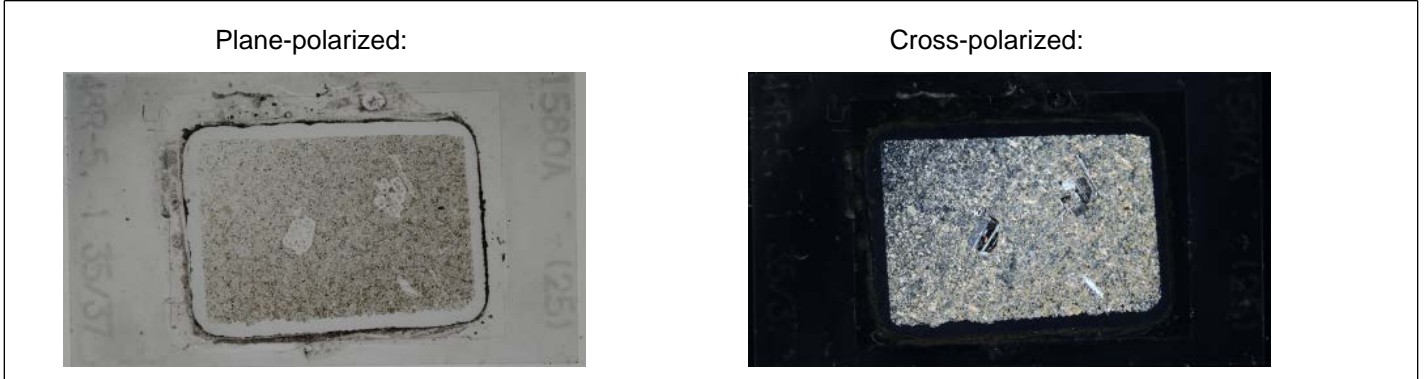
Texture 1: subophitic

Texture 2:

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	15	100	0.3	subhedral	
Plagioclase	45	10	0.25	euhedral-subhedral	
Clinopyroxene	35	75	0.2	0.2	
Opaques	5	0	0.1	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-48R-5-W 35/37-TSB-TS 25** Thin section no.: 25
 Observer: PD Piece no.: 1
 Unit/subunit: 3
 Thin section summary: Sample U1580A-48R-5W 35/37 is a plagioclase-phyric basalt. Plagioclase phenocrysts show nice zonation and are partially altered along zones. Clinopyroxenes show evidence of subophitic texture but are heavily altered. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: plagioclase phyric basalt

Groundmass grain size (avg.): fine-grained

Texture 1: moderately phyric

Texture 2:

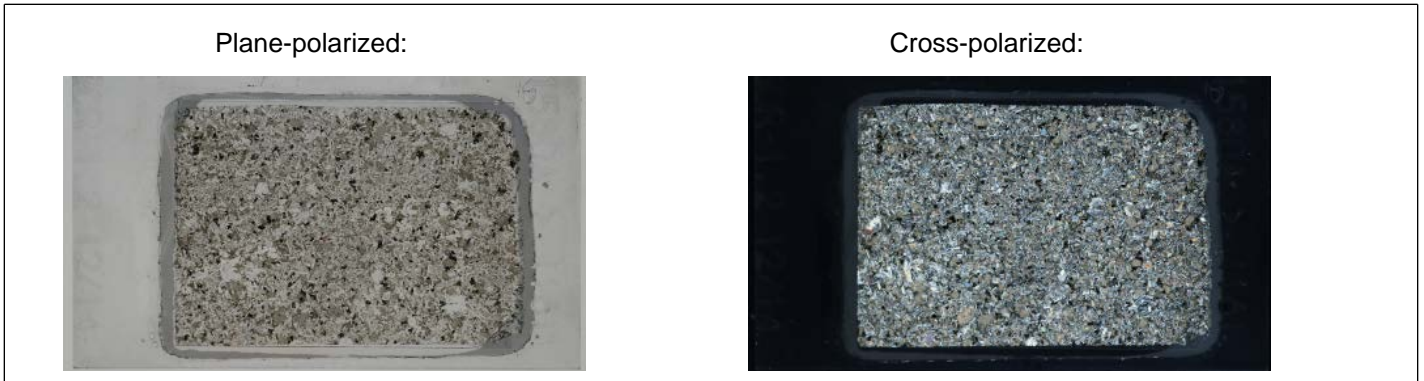
Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	8	20	3	4	euhedral	

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	15	100	0.3	subhedral	
Plagioclase	45	10	0.25	euhedral-subhedral	
Clinopyroxene	35	75	0.2	0.2	
Opaques	5	0	0.1	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-50R-1-W 12/15-TSB-TS 16** Thin section no.: 16
 Observer: PD Piece no.: 2
 Unit/subunit: 5

Thin section summary: Sample U1580A-50R-1W 12/15 is a plagioclase-olivine phyric basalt. Small plagioclase glomerocrysts up to 2mm are fresh but the olivine phenocrysts are completely altered. The altered olivine phenocrysts show nice pseudomorphs and are replaced with clay minerals. The groundmass is composed of plagioclase, clinopyroxene, oxides, and either altered olivine or altered interstitial material.



Igneous Petrology

Lithology: plagioclase-olivine phyric basalt

Groundmass grain size (avg.): medium-grained

Texture 1: moderately phyric

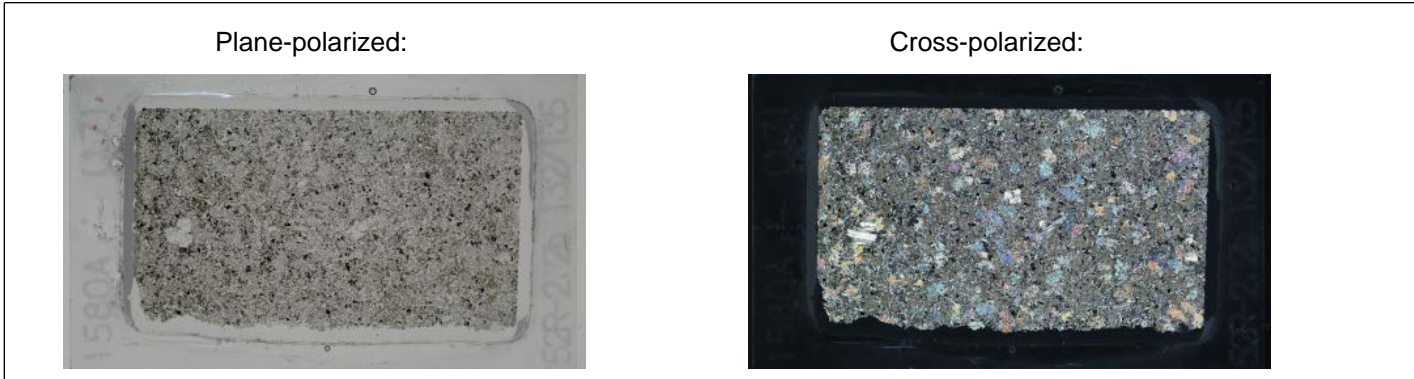
Texture 2: glomeroporphyritic

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Olivine	7	100	1	2	euhedral	Nice pseudomorphs completely replaced
Plagioclase	5	5	1.5	2	euhedral-subhedral	glomerocrysts

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	100	0.25	subhedral	
Plagioclase	45	5	0.5	euhedral-subhedral	
Clinopyroxene	20	30	0.25	0.25	
Opagues	5	0	0.2	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-52R-2-W 132/135-TSB-TS 17** Thin section no.: 17
 Observer: PD Piece no.: 2
 Unit/subunit: 7
 Thin section summary: Sample U1580A-52R-2W 132/135 is a plagioclase-phyric basalt. Two plagioclase phenocrysts are present and show well-defined zonation. Large clinopyroxenes show subophitic texture enclosing plagioclase laths. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: plagioclase phyric basalt

Groundmass grain size (avg.): medium-grained

Texture 1: subophitic

Texture 2: sparsely phyric

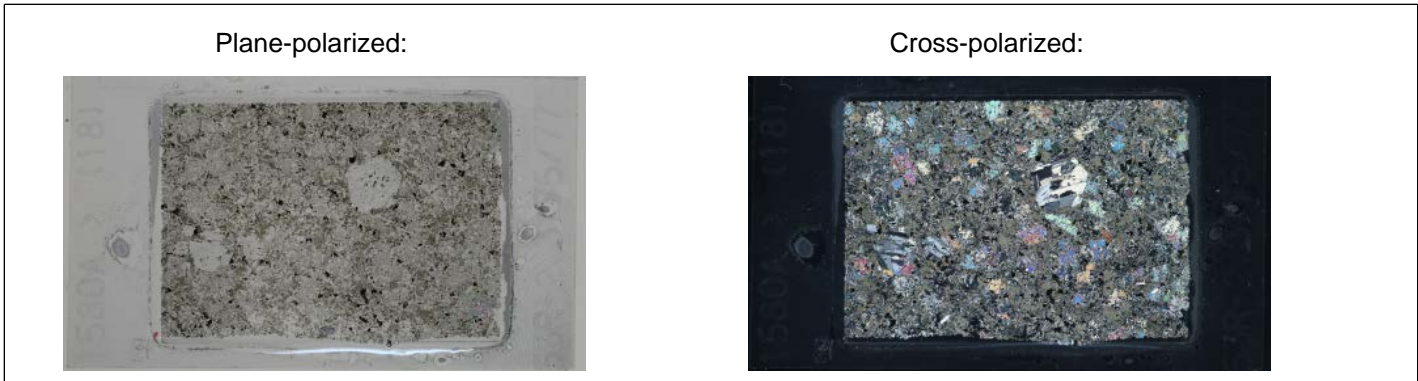
Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	2	5	3	3	euhedral	

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	20	100	0.4	subhedral	
Plagioclase	40	5	0.5	euhedral-subhedral	
Clinopyroxene	35	10	1.5	1.5	subophitic texture
Opaques	5	0	0.2	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-53R-2-W 75/77-TSB-TS 18** Thin section no.: 18
 Observer: PD Piece no.: 3
 Unit/subunit: 7

Thin section summary: Sample U1580A-53R-2W 75/77 is a plagioclase-phyric basalt. Two large plagioclase phenocrysts are present and show glomerocryst-like texture though they also appear to have a single crystal habit. Large clinopyroxenes show subophitic texture enclosing plagioclase laths. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: plagioclase phyric basalt

Groundmass grain size (avg.): medium-grained

Texture 1: subophitic

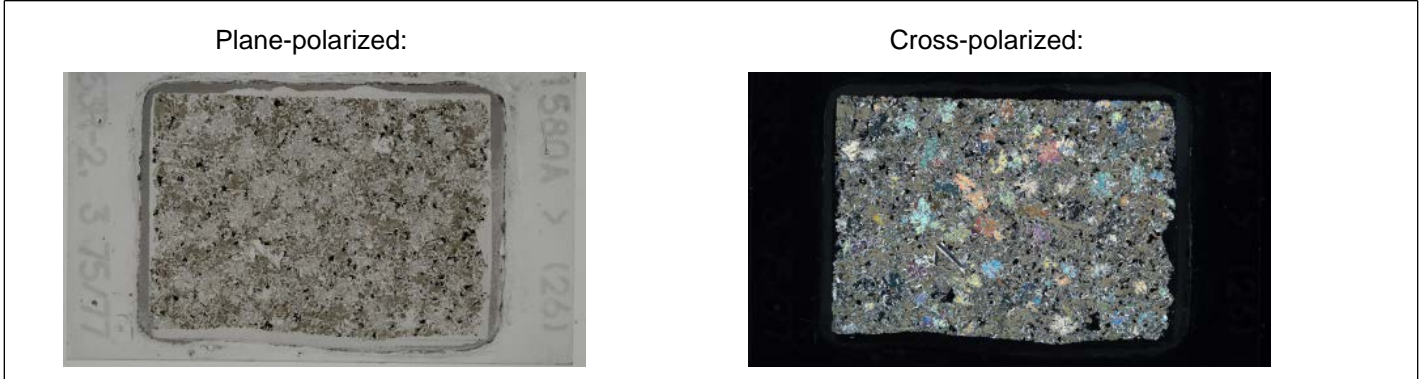
Texture 2: moderately phyric

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	6	0	4.5	5	euohedral-subhedral	Shows glomerocryst-like texture though has a nice and singular habit

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	100	1	subhedral	
Plagioclase	35	5	0.6	euohedral-subhedral	
Clinopyroxene	30	10	2.5	2.5	subophitic texture
Opauques	5	0	0.4	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-53R-2-W 75/77-TSB-TS 26** Thin section no.: 26
 Observer: PD Piece no.: 3
 Unit/subunit: 7
 Thin section summary: Sample U1580A-53R-2W 75/77 is a plagioclase-phyric basalt. One plagioclase phenocryst is present with nice shape and fresh appearance. Large clinopyroxenes show subophitic texture enclosing plagioclase laths. Olivine was likely also a groundmass phase but is completely replaced by clay minerals.



Igneous Petrology

Lithology: plagioclase phyric basalt

Groundmass grain size (avg.) medium-grained

Texture 1: subophitic

Texture 2: sparsely phyric

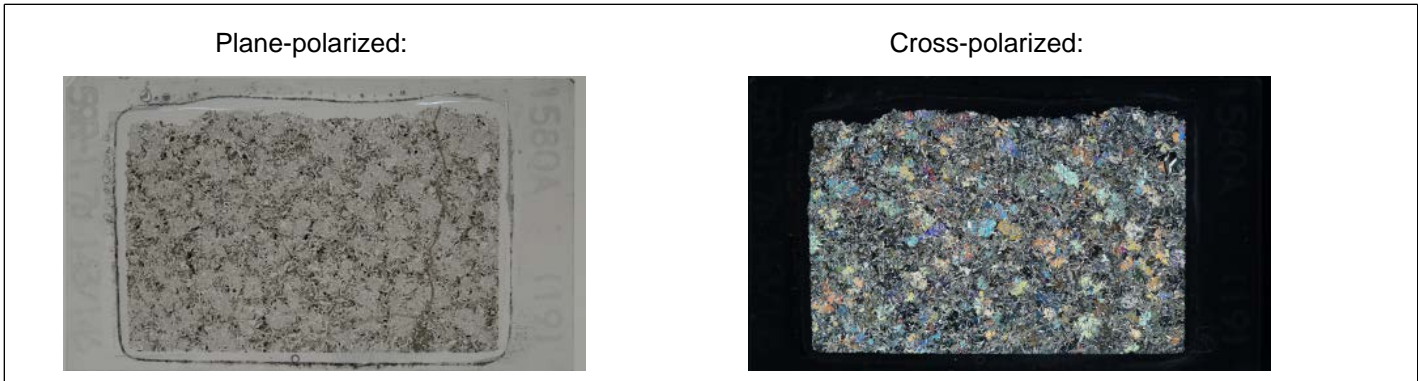
Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	2	0	3	3	euhedral	

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	100	1	subhedral	
Plagioclase	35	5	0.6	euhedral-subhedral	
Clinopyroxene	30	10	2.5	2.5	subophitic texture
Opaques	5	0	0.4	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-59R-1-W 143/146-TSB-TS 19** Thin section no.: 19
 Observer: PD Piece no.: 7
 Unit/subunit: 8

Thin section summary: Sample U1580A-59R-1W 143/146 is a subophitic basalt. Large clinopyroxenes display nice subophitic texture, enclosing and partially enclosing groundmass plagioclase laths. Olivine pseudomorphs are apparent in places, and may also display some subophitic texture but are nearly entirely altered. Some of the original material only survives in patches within larger crystals.



Igneous Petrology

Lithology: aphyric basalt

Groundmass grain size (avg.): medium-grained

Texture 1: subophitic

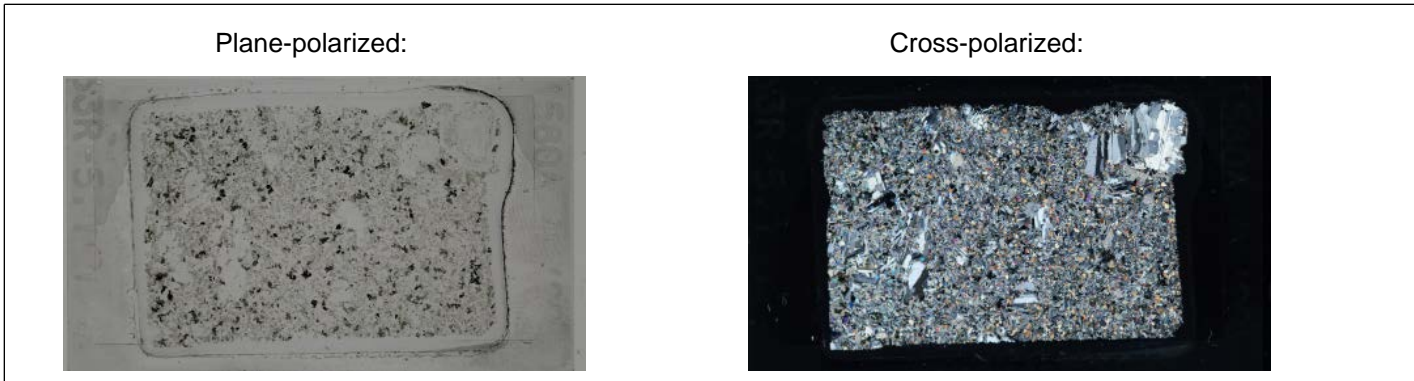
Texture 2:

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	25	95	0.2	subhedral	
Plagioclase	35	0	0.4	euhedral-subhedral	
Clinopyroxene	35	0	2	2	subophitic texture
Opaques	5	0	0.15	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-63R-5-W 1/4-TSB-TS 20** Thin section no.: 20
 Observer: PD Piece no.: 1
 Unit/subunit: 10a

Thin section summary: Sample U1580A-63R-5W 1/4 is a plagioclase glomerophyric basalt. Plagioclase glomerocrysts are fresh and reach up to 6mm in size. Groundmass olivine is completely replaced with chlorite showing well-defined pseudomorphs. The plagioclase, clinopyroxene, and oxides in the groundmass are unaltered but the interstitial material is completely altered.



Igneous Petrology

Lithology: plagioclase phyric basalt

Groundmass grain size (avg.): medium-grained

Texture 1: glomeroporphyritic

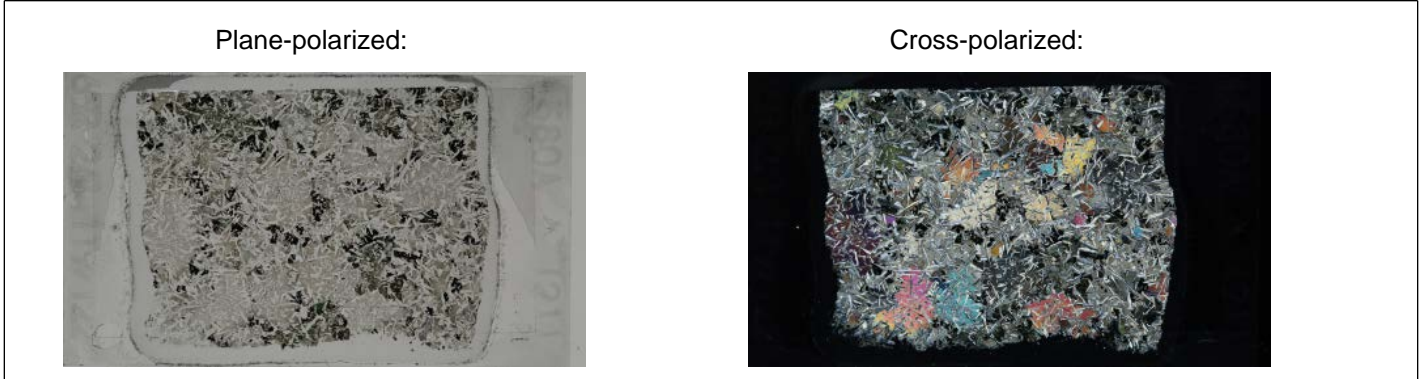
Texture 2:

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	8	0	4	6	subhedral	glomerocrysts

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	10	100	0.2	euhedral	
Plagioclase	45	0	0.6	euhedral-subhedral	
Clinopyroxene	25	0	0.2	0.2	
Opaques	5	0	0.2	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-65R-2-W 119/122-TSB-TS 21** Thin section no.: 21
 Observer: PD Piece no.: 1
 Unit/subunit: 10c
 Thin section summary: Sample U1580A-65R-2W 119/122 is a subophitic basalt. Large clinopyroxene crystals show subophitic texture partially enclosing plagioclase laths. The sample is coarse grained and moderately altered. All groundmass olivine as well as all interstitial material is replaced.



Igneous Petrology

Lithology: doleritic basalt

Groundmass grain size (avg.) coarse-grained

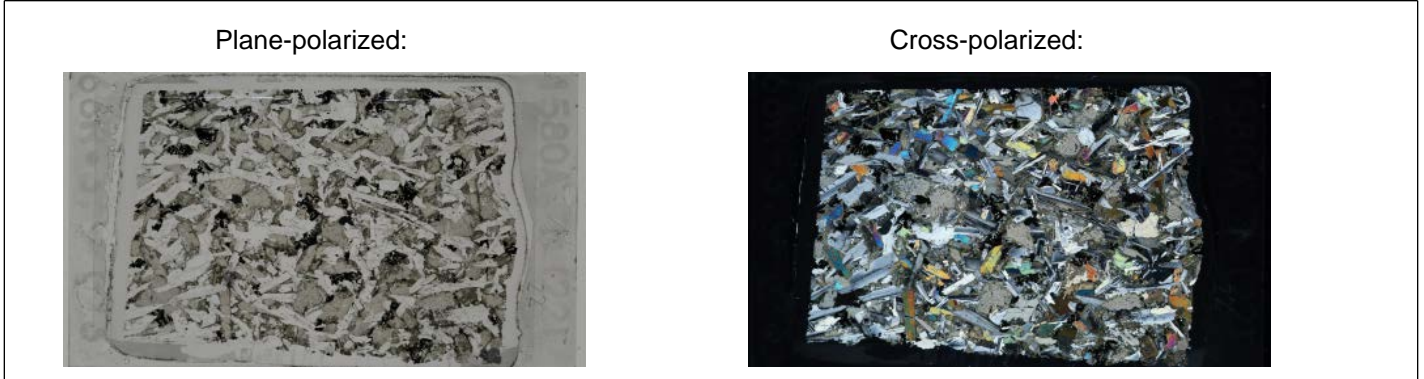
Texture 1: subophitic

Texture 2:

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	10	90	0.4	anhedral	
Plagioclase	30	20	1	euhedral-subhedral	
Clinopyroxene	40	5	8	8	
Opaques	5	0	0.4	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-66R-3-W 0/3-TSB-TS 22** Thin section no.: 22
 Observer: PD Piece no.: 1
Unit/subunit: 10b
 Thin section summary: Sample U1580A-66R-3W 0/3 is a doleritic basalt. It is coarse grained with plagioclase laths averaging 2.5mm and clinopyroxene and olivines averaging 2mm. Olivines are completely replaced but show nice pseudomorphs replaced with clay minerals. The interstitial material is also completely altered.



Igneous Petrology

Lithology: dolerite

Groundmass grain size (avg.): coarse-grained

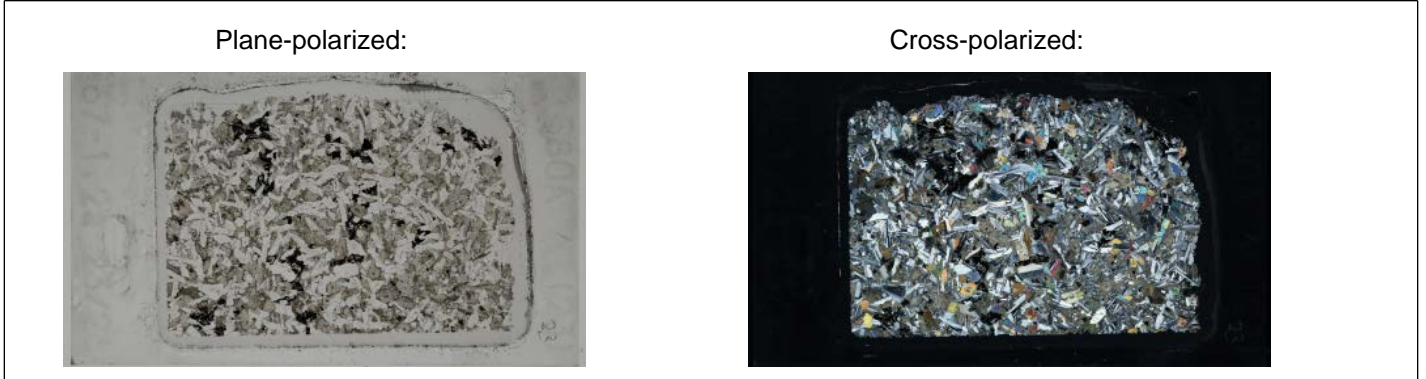
Texture 1: equigranular

Texture 2: aphyric

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	20	100	2	euhedral-subhedral	
Plagioclase	35	5	2.5	subhedral	
Clinopyroxene	25	25	2	2	
Opaques	8	0	1.5	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1580A-67R-1-W 23/26-TSB-TS 23** Thin section no.: 23
 Observer: PD Piece no.: 2
 Unit/subunit: 10b
 Thin section summary: Sample U1580A-67R-1W 23/26 is a doleritic basalt. It is coarse grained and moderately altered. Plagioclase is fresh and the laths average 2mm. Oxides in the groundmass are quite large averaging about 1.5mm. The clinopyroxenes are somewhat altered. All olivine is completely altered as is the interstitial material.



Igneous Petrology

Lithology: dolerite

Groundmass grain size (avg.) coarse-grained

Texture 1: equigranular

Texture 2: aphyric

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	5	100	0.6	anhedral	
Plagioclase	40	5	2	subhedral	
Clinopyroxene	25	20	1.5	1.5	
Opaques	5	0	1.5	subhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					