

THIN SECTION LABEL ID: **371-U1506A-29R-3-W 45/48-TSB-TS02**

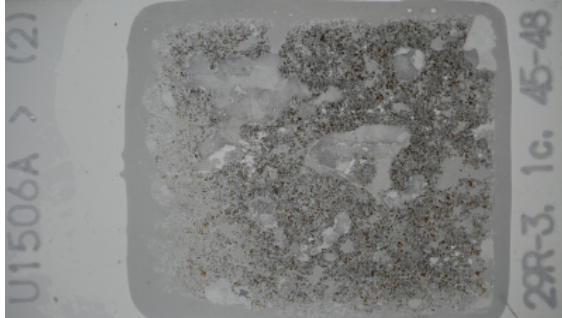
Thin section no.: 2

Observer: MG / Li

Unit/subunit: Unit II

Thin section summary: Microcrystalline ophitic basalt with plagioclase and oxides. Crystals are highly fractured. Common opaque crystals with polygonal profile and completely black in color (possible magnetite?). Common amygdaloidal carbonate filling (15%). The contact between the dominant rock and the filling is sharp, with no evidence of alteration.

Plane-polarized: 42336031



Cross-polarized: 42336051



Igneous Petrology

Lithology: basalt

Avg. grain size: microcrystalline

Texture: ophitic

Max grain size: fine grained

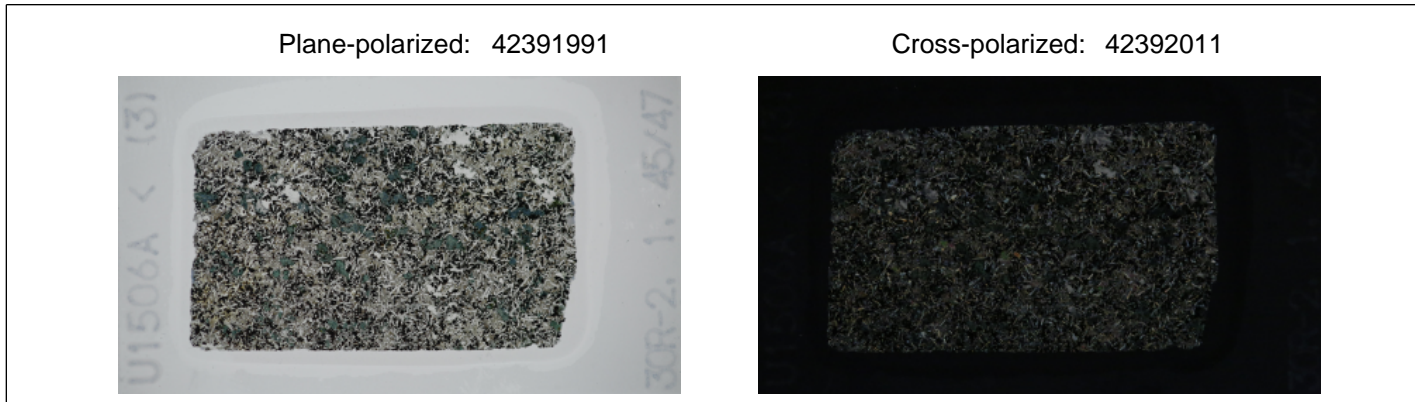
Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			50	0.5
Fe-Ti Oxide	N/A	N/A	15	0.3

Vesicles	Vesicle size (mm)	Vesicle shape
	5	irregular

Alteration

Alteration comment: Crystals are highly fractured. Common opaque crystals with polygonal profile and completely black in color (possible magnetite?). Common amygdaloidal carbonate filling (15%). The contact between the dominant rock and the filling is sharp, with no evidence of alteration.

THIN SECTION LABEL ID: **371-U1506A-30R-2-W 45/47-TSB-TS03** Thin section no.: 3
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Fine grained ophitic basalt with plagioclase, clinopyroxene and oxides. Crystals, especially pyroxene, are fractured. A pleochroic green mineral, probably chlorite, occurs frequently at the margin of the cavities, with a colloform structure. The cavities are filled with calcite or chlorite.



Igneous Petrology

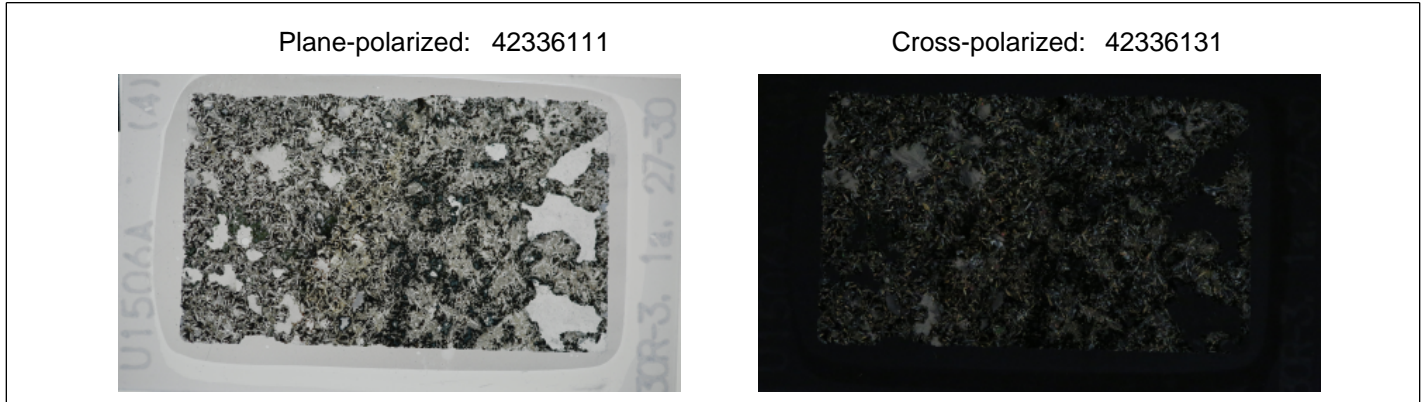
Lithology: **basalt** Avg. grain size: fine grained
 Texture: ophitic Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase	2	1.4	30	1
Clinopyroxene			25	0.5
Fe-Ti Oxide	N/A	N/A	20	0.4

Alteration

Alteration comment: Crystals, especially pyroxene, are fractured. A pleochroic green mineral, probably chlorite, occurs frequently at the margin of the cavities, with a colloform structure. The cavities are filled with calcite or chlorite.

THIN SECTION LABEL ID: **371-U1506A-30R-3-W 27/30-TSB-TS04** Thin section no.: 4
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Fine grained ophitic basalt, with plagioclase, clinopyroxene, and oxides. Crystals, especially pyroxene, are fractured. Sporadic presence of calcite (10%), possibly associated with amygdaloidal fillings. Pleochroic greenish obfuscated crystals, probably colloform chlorite, occur in part of the section.



Igneous Petrology

Lithology: **basalt** Avg. grain size: fine grained
 Texture: ophitic Max grain size: medium grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			30	1
Clinopyroxene			25	0.6
Fe-Ti Oxide	N/A	N/A	20	0.5

Vesicles	Vesicle size (mm)	Vesicle shape
	3	irregular

Alteration

Alteration comment: Vesicle layer in fresh basalt. A pleochroic green mineral, probably chlorite, occurs frequently at the margin of the cavities, with a colloform structure. The cavities are filled with calcite and, in only few cases, with a translucent material, probably of carbonate composition. Rare, pleochroic green, bad shaped crystals occur also randomly within the rock. A few large, grayish, highly fractured crystals, are present, probably calcite.

THIN SECTION LABEL ID: **371-U1506A-30R-3-W 127/129-TSB-TS05**

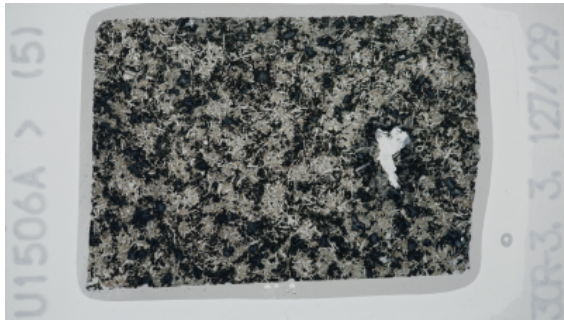
Thin section no.: 5

Observer: MG / Li

Unit/subunit: Unit II

Thin section summary: Vesicle layer in fresh basalt. Fine grained ophitic basalt with plagioclase, clinopyroxene and oxides. A pleochroic green mineral, probably chlorite, occurs frequently at the margin of the cavities, with a colloform structure. The cavities are filled with calcite and, in only few cases, with a translucent material, probably of carbonate composition. Rare, pleochroic green, bad shaped crystals occur also randomly within the rock. A few large, grayish, highly fractured crystals, are present, probably calcite.

Plane-polarized: 42440131



Cross-polarized: 42440181



Igneous Petrology

Lithology: basalt

Avg. grain size: fine grained

Texture: ophitic

Max grain size: medium grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase	15	2	30	1
Clinopyroxene			20	0.6
Fe-Ti Oxide	N/A	N/A	15	0.4

Alteration

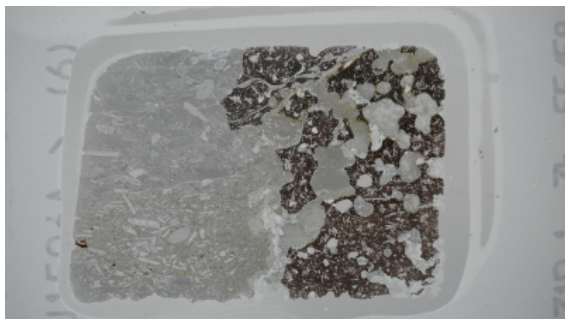
Alteration comment: Crystals, especially pyroxene, are fractured. Sporadic presence of calcite (10%), possibly associated with amygdaloidal fillings. Pleochroic greenish obfuscated crystals, probably colloform chlorite, occur in part of the section.

THIN SECTION LABEL ID: **371-U1506A-31R-1-W 55/58-TSB-TS06** Thin section no.: 6

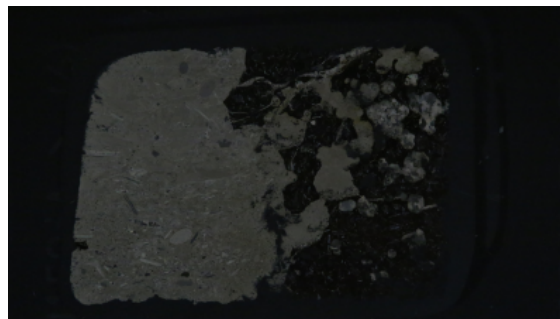
Observer: MG / Li Unit/subunit: Unit II

Thin section summary: Microcrystalline porphyritic basalt, with plagioclase and oxides. Few plagioclase phenocrysts are present and amygdaloidal calcite. Contact with a bioclastic packstone. Red algae, bryozoans, brachiopods, and small foraminifera are recognizable among a variety of bioclasts. Few extraclasts are also present. Grain size ranges from <1mm to several mm. Although many bioclasts are recrystallized, the micritic matrix looks well preserved. A small part towards the margin of the section shows cement instead of matrix.

Plane-polarized: 42440201



Cross-polarized: 42440221



Igneous Petrology

Lithology: **basalt** Avg. grain size: microcrystalline

Texture: porphyritic / porphyry Max grain size: fine grained

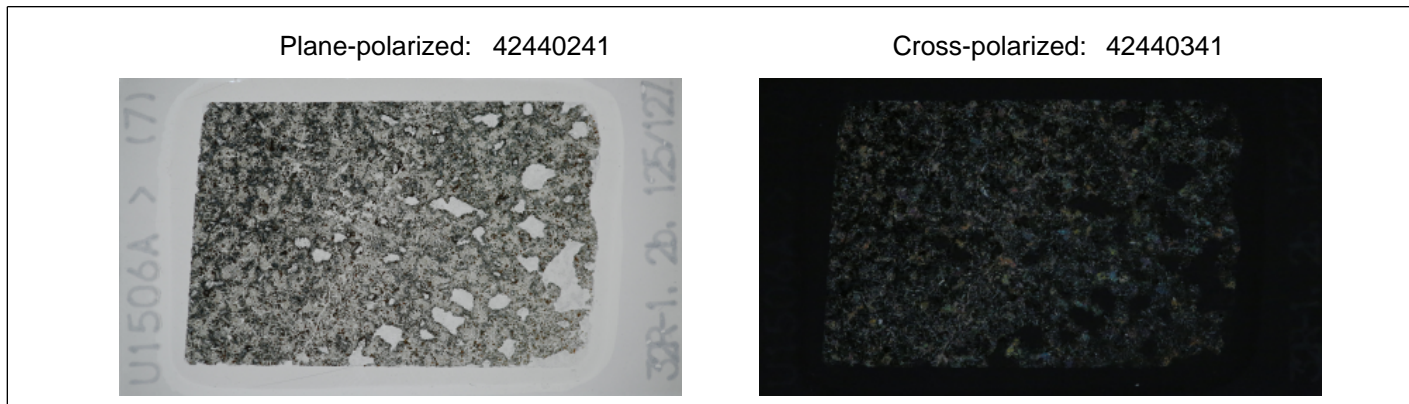
Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase	10	0.8	40	0.4
Fe-Ti Oxide	N/A	N/A	25	0.2

Vesicles	Vesicle size (mm)	Vesicle shape
	5	irregular

Alteration

Alteration comment: Amygdaloidal calcite (10%). Contact with a bioclastic packstone. Red algae, bryozoans, brachiopods, and small foraminifera are recognizable among a variety of bioclasts. Few extraclasts are also present. Grain size ranges from <1 mm to several mm. Although many bioclasts are recrystallized, the micritic matrix looks well preserved. A small part towards the margin of the section shows cement instead of matrix.

THIN SECTION LABEL ID: **371-U1506A-32R-1-W 125/127-TSB-TS07** Thin section no.: 7
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Fine grained ophitic basalt with plagioclase, clinopyroxene, and oxides. Crystals, especially pyroxene, are fractured. A pleochroic greenish mineral, probably chlorite, occurs preferentially around the oxides. Common cavities filled with dark, blurry material. Sporadic cavities filled with calcite, in a case turning into chlorite.



Igneous Petrology

Lithology: **basalt** Avg. grain size: fine grained
 Texture: ophitic Max grain size: fine grained

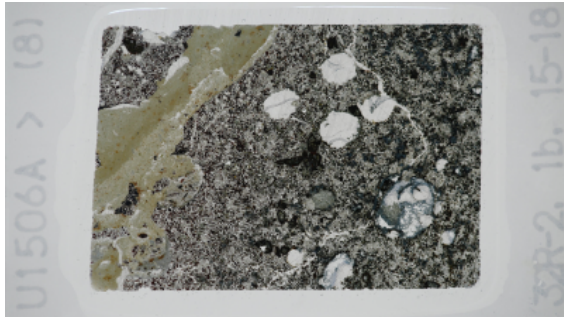
Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase	2	1	25	0.4
Clinopyroxene			25	0.6
Fe-Ti Oxide	N/A	N/A	20	0.2

Alteration

Alteration comment: Crystals, especially pyroxene, are fractured. A pleochroic greenish mineral, probably chlorite, occurs preferentially around the oxides. Common cavities filled with dark, blurry material. Sporadic cavities filled with calcite, in a case turning into chlorite.

THIN SECTION LABEL ID: **371-U1506A-32R-2-W 15/18-TSB-TS08** Thin section no.: 8
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Fine grained ophitic basalt, with plagioclase, clinopyroxene, and oxides. Altered pyroxene crystals and few phenocrystals of probably alkaline feldspars are still observable. Crystals are highly fractured. Amygdaloidal calcite present (5%). The contact between the dominant rock and the filling is sharp, with no evidence of alteration, although a replaced colloform structure is observed in one of the cavities. A 0.5cm wide fracture filled with micritic carbonate is observable in the upper part of the section

Plane-polarized: 42440361



Cross-polarized: 42440381



Igneous Petrology

Lithology: **basalt** Avg. grain size: fine grained
 Texture: ophitic Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			35	0.8
Clinopyroxene			15	0.7
Fe-Ti Oxide	N/A	N/A	20	0.5

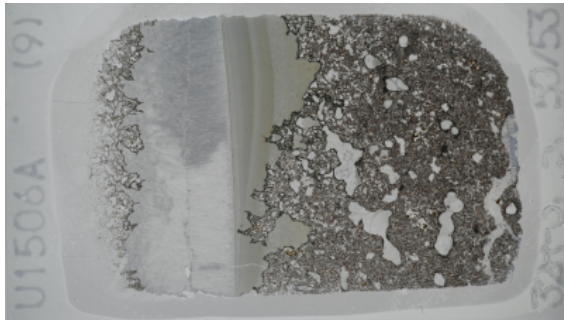
Vesicles	Vesicle size (mm)	Vesicle shape
	4	rounded

Alteration

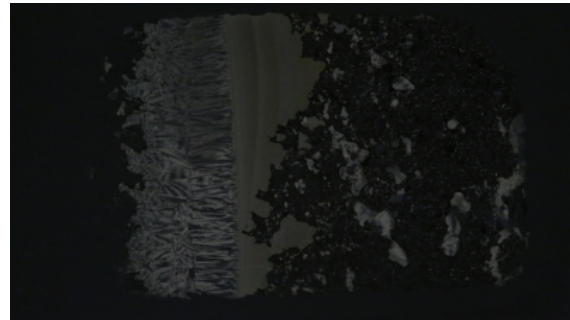
Alteration comment: Altered pyroxene crystals and few phenocrystals of probably alkaline feldspars are still observable. Crystals are highly fractured. Amygdaloidal calcite present (5%). The contact between the dominant rock and the filling is sharp, with no evidence of alteration, although a replaced colloform structure is observed in one of the cavities. A 0.5cm wide fracture filled with micritic carbonate is observable in the upper part of the section

THIN SECTION LABEL ID: **371-U1506A-32R-3-W 50/53-TSB-TS09** Thin section no.: 9
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Microcrystalline ophitic basalt, with plagioclase, clinopyroxene, and oxides. Altered pyroxene crystals and few probably calcite replaced olivine are still observable. Crystals are highly fractured. Amygdaloidal calcite present (15%). The contact between the dominant rock and the filling is sharp, with a very thin alteration rim. Half of the section displays a 1cm wide fracture filled with laminated micritic carbonate in the lower part and fibrous calcite crystals in the upper part.

Plane-polarized: 42440401



Cross-polarized: 42440421



Igneous Petrology

Lithology: basalt
 Texture: ophitic

Avg. grain size: microcrystalline
 Max grain size: microcrystalline

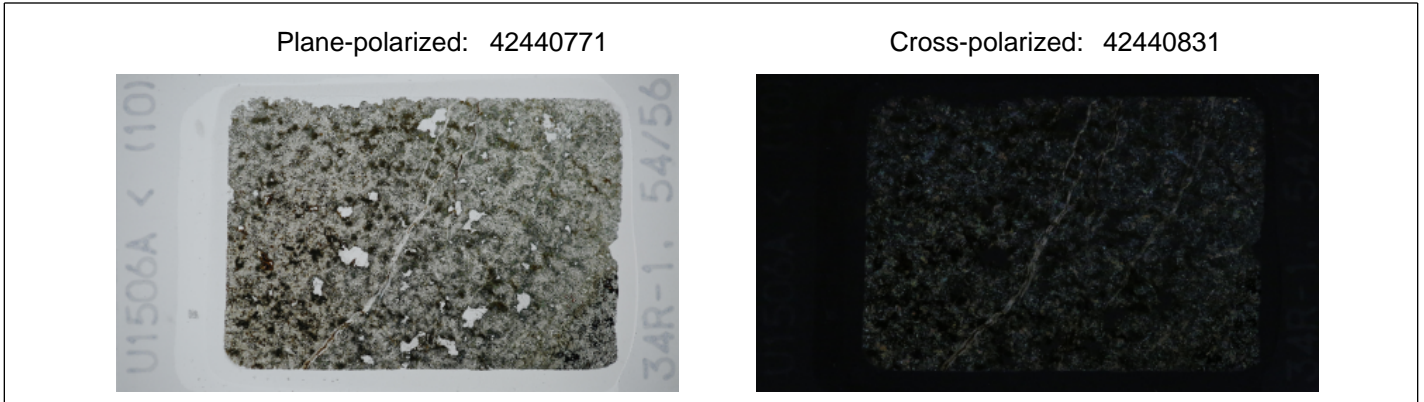
Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			35	0.3
Clinopyroxene			10	0.3
Fe-Ti Oxide	N/A	N/A	25	0.2

Vesicles	Vesicle size (mm)	Vesicle shape
	8	irregular

Alteration

Alteration comment: Altered pyroxene crystals and few probably calcite replaced olivine are still observable. Crystals are highly fractured. Amygdaloidal calcite present (15%). The contact between the dominant rock and the filling is sharp, with a very thin alteration rim. Half of the section displays a 1cm wide fracture filled with laminated micritic carbonate in the lower part and fibrous calcite crystals in the upper part.

THIN SECTION LABEL ID:	371-U1506A-34R-1-W 54/56-TSB-TS10	Thin section no.:	10
Observer:	MG / Li	Unit/subunit:	Unit II
Thin section summary:	Fine grained ophitic basalt, with plagioclase, clinopyroxene, and oxides. Altered part in fresh basalt. Altered pyroxene crystals are still observable. Crystals are highly fractured. Few small vesicles, empty or with amygdaloidal carbonate filling. The contact between the dominant rock and the filling is sharp, sometimes with a very thin alteration rim. Pleochroic greenish crystals, probably chlorite, occur throughout the section. The lithology is crossed by thin sinuous veins filled with fibrous calcite.		



Igneous Petrology

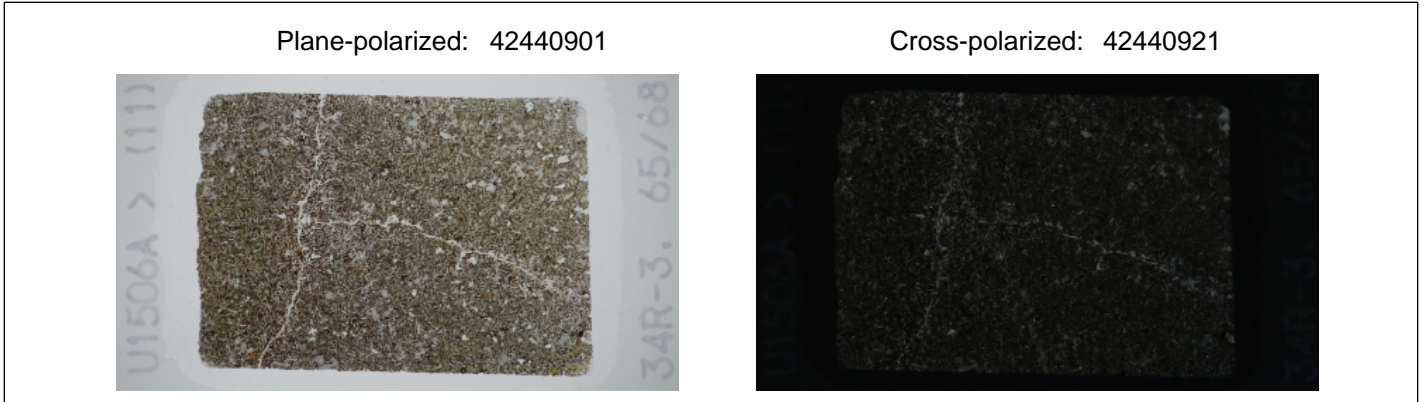
Lithology:	basalt	Avg. grain size:	fine grained
Texture:	ophitic	Max grain size:	fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			35	0.8
Clinopyroxene			20	0.6
Fe-Ti Oxide	N/A	N/A	20	0.4

Alteration

Alteration comment: Altered part in fresh basalt. Altered pyroxene crystals are still observable. Crystals are highly fractured. Few small vesicles, empty or with amygdaloidal carbonate filling. The contact between the dominant rock and the filling is sharp, sometimes with a very thin alteration rim. Pleochroic greenish crystals, probably chlorite, occur throughout the section. The lithology is crossed by thin sinuous veins filled with fibrous calcite.

THIN SECTION LABEL ID: **371-U1506A-34R-3-W 65/68-TSB-TS11** Thin section no.: 11
 Observer: MG / Li Unit/subunit: Unit II
 Thin section summary: Microcrystalline ophitic basalt, with plagioclase and oxides. Rock with microlithic texture, composed dominantly by plagioclase and ox-hydroxides, probably derived from alteration of pyroxenes. No pyroxene crystals still observable. Crystals are highly fractured. Few vesicles and veins filled with blocky calcite. The contact between the dominant rock and the filling is sharp, sometimes with a very thin alteration rim.



Igneous Petrology

Lithology: **basalt** Avg. grain size: microcrystalline
 Texture: ophitic Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			50	0.7
Fe-Ti Oxide	N/A	N/A	40	0.3

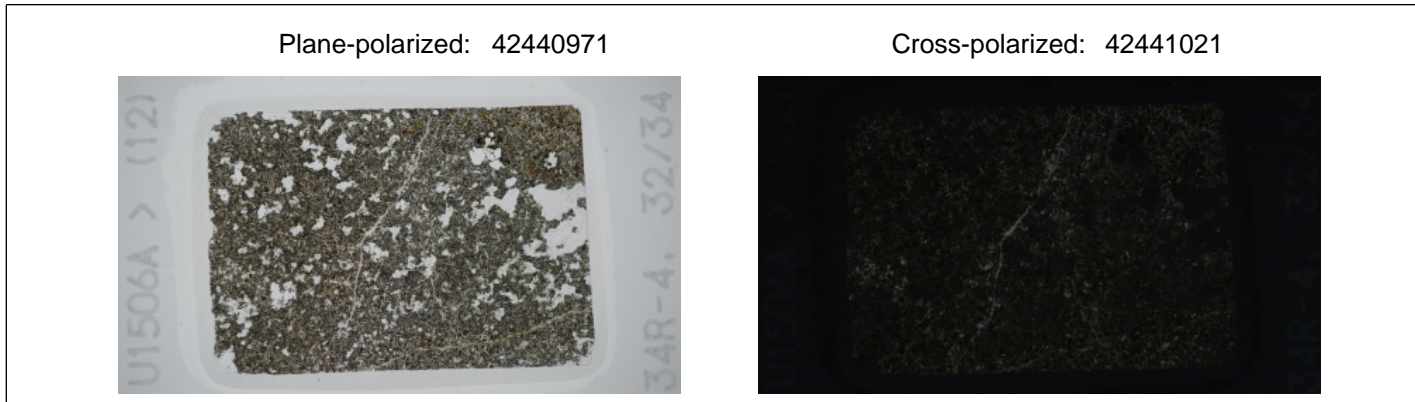
Alteration

Alteration comment: Rock with microlithic texture, composed dominantly by plagioclase and ox-hydroxides, probably derived from alteration of pyroxenes. No pyroxene crystals still observable. Crystals are highly fractured. Few vesicles and veins filled with blocky calcite. The contact between the dominant rock and the filling is sharp, sometimes with a very thin alteration rim.

THIN SECTION LABEL ID: **371-U1506A-34R-4-W 32/34-TSB-TS12** Thin section no.: 12

Observer: MG / Li Unit/subunit: Unit II

Thin section summary: Fine grained ophitic basalt, with plagioclase, clinopyroxene, and oxides. Ox-hydroxides are generally dark brown, barely transparent, but also orange in some cases. Small relics of pyroxene crystals are still observable. Crystals are highly fractured. Few small cavities are present, and a sinuous thin vein filled with calcite.



Igneous Petrology

Lithology: **basalt** Avg. grain size: Fine grained

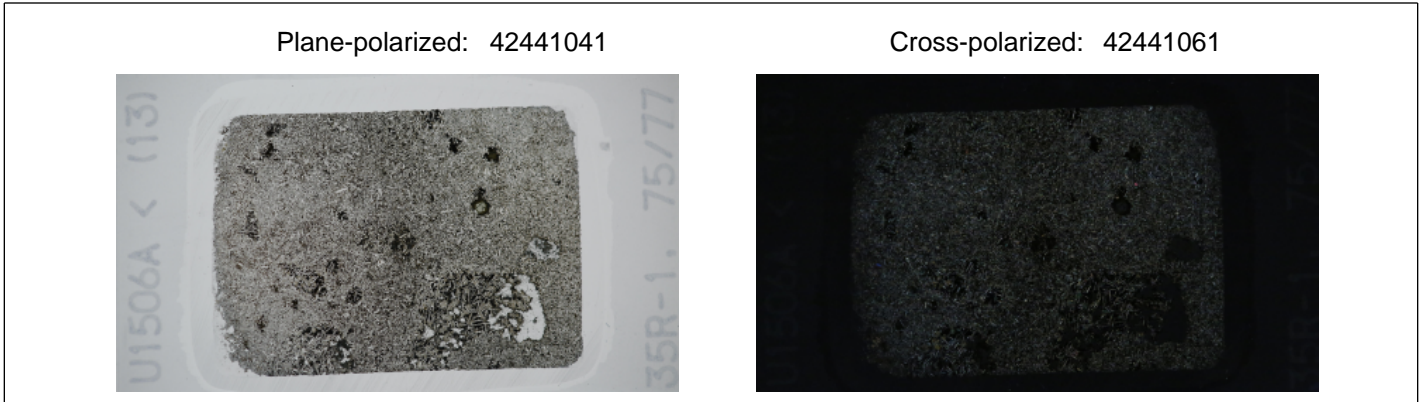
Texture: **ophitic** Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			50	0.8
Clinopyroxene			10	0.6
Fe-Ti Oxide	N/A	N/A	30	0.5

Alteration

Alteration comment: Ox-hydroxides are generally dark brown, barely transparent, but also orange in some cases. Small relics of pyroxene crystals are still observable. Crystals are highly fractured. Few small cavities are present, and a sinuous thin vein filled with calcite.

THIN SECTION LABEL ID: **371-U1506A-35R-1-W 75/77-TSB-TS13** Thin section no.: 13
 Observer: **MG / Li** Unit/subunit: Unit II
 Thin section summary: **Microcrystalline ophitic basalt, with plagioclase and oxides. Altered pyroxene crystals are still observable. Crystals are highly fractured. Large (>1mm) rounded cavities filled with oxides and plagioclase are present, possible replacement of phenocrysts.**



Igneous Petrology

Lithology: **basalt** Avg. grain size: microcrystalline
 Texture: **ophitic** Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			50	0.4
Clinopyroxene			10	0.3
Fe-Ti Oxide	N/A	N/A	30	0.3

Alteration

Alteration comment: **Altered pyroxene crystals are still observable. Crystals are highly fractured. Large (>1mm) rounded cavities filled with oxides and plagioclase are present, possible replacement of phenocrysts.**

THIN SECTION LABEL ID: **371-U1506A-35R-3-W 83/85-TSB-TS14**

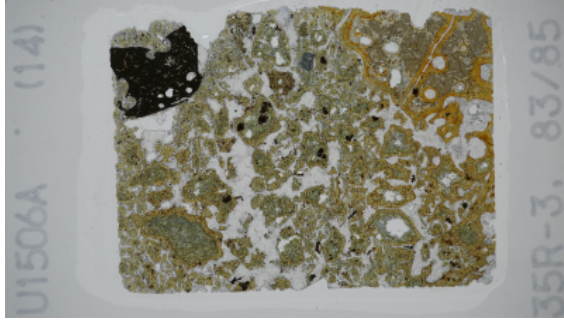
Thin section no.: 14

Observer: MG / Li

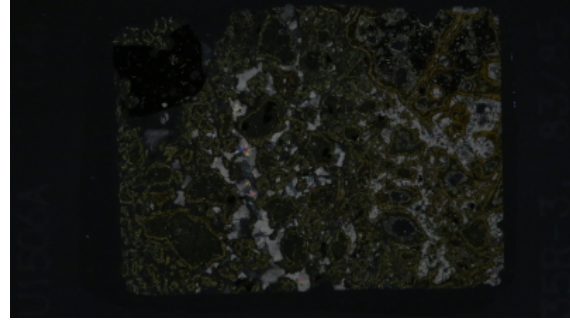
Unit/subunit: Unit II

Thin section summary: Highly altered rock composed of yellowish to brownish-orange oxidized groundmass, with just few original plagioclase crystals visible. Sporadic dark brown and opaque crystals are also present. Pervasive large (several mm) and irregular cavities, filled with second-generation calcite replacing the original isopach filling.

Plane-polarized: 42441111



Cross-polarized: 42441161



Alteration

Alteration comment:

Highly altered rock composed of yellowish to brownish-orange oxidized groundmass, with just few original plagioclase crystals visible. Sporadic dark brown and opaque crystals are also present. Pervasive large (several mm) and irregular cavities, filled with second-generation calcite replacing the original isopach filling.

THIN SECTION LABEL ID: **371-U1506A-36R-2-W 10/12-TSB-TS15**

Thin section no.: 15

Observer: MG / Li

Unit/subunit: Unit II

Thin section summary: Microcrystalline ophitic basalt, with plagioclase and oxides. Altered pyroxene crystals are still observable. Crystals are highly fractured. Few cavities with irregular shape, highly oxidized rim, and filled with carbonate or empty.

Plane-polarized: 42441231



Cross-polarized: 42441251



Igneous Petrology

Lithology: basalt

Avg. grain size: microcrystalline

Texture: ophitic

Max grain size: fine grained

Mineralogy	Phenocrysts (%)	Phenocryst size (mm)	Groundmass (%)	Groundmass size (mm)
Plagioclase			50	0.4
Clinopyroxene			10	0.3
Fe-Ti Oxide	N/A	N/A	30	0.3

Alteration

Alteration comment: Altered pyroxene crystals are still observable. Crystals are highly fractured. Few cavities with irregular shape, highly oxidized rim, and filled with carbonate or empty.