

THIN SECTION LABEL ID: **391-U1576A-12R-1-W 2/2-SED-TS# 42**

Thin section no.: 42

Observer: DB

Piece no.:

Thin section thickness:

Unit/subunit: Unit II

Thin section summary: Clasts of mineralised foraminifera biomicrite (Fe-Mn or pyrite) and fresh volcanic glass. The grains were found on the surface of the core (not in situ).

Plane-polarized: 60792781

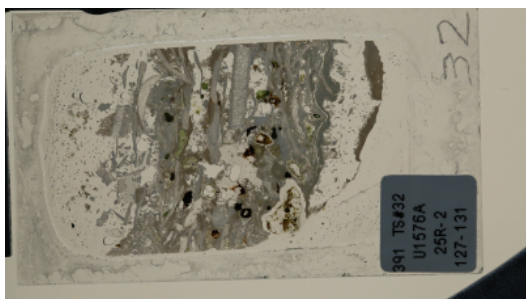


Cross-polarized: 60793521

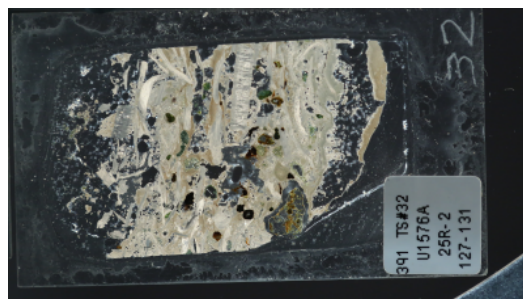


THIN SECTION LABEL ID:	391-U1576A-25R-2-W 127/131-TSB-TS# 32	Thin section no.:	32
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Subunit IIA
Thin section summary:	Bioclastic packstone with abundant shell fragments (inoceramid and others). Planktonic foraminifera are less abundant than benthic foraminifera. Volcaniclasts consists of angular to subrounded palagonized volcanic glass; some of the glass is partly fresh and brown in color. Vesicles occur in some glass fragments. Sub-rounded bioclasts attest for reworking.		

Plane-polarized: 60792641

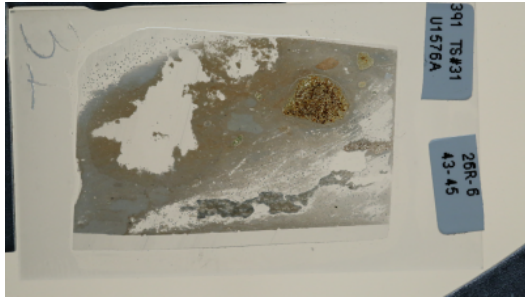


Cross-polarized: 60792661

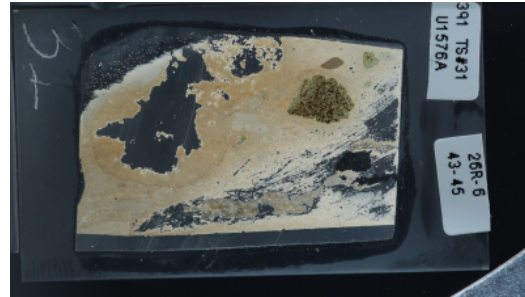


THIN SECTION LABEL ID:	391-U1576A-26R-6-W 43/45-TSB-TS# 31	Thin section no.:	31
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Subunit IIIA
Thin section summary:	Clayey chalk or biomicrite with foraminifera and altered fragments of vesicular glass. The vesicles are locally elongated or crushed. Rare fragments of inoceramid shells. The sample also includes burrows filled with micrite of distinct color. One accidental biotite grain.		

Plane-polarized: 60835261



Cross-polarized: 60835281



THIN SECTION LABEL ID: **391-U1576A-38R-2-W 65/68-TSB-TS# 33**

Thin section no.: 33

Observer: DB

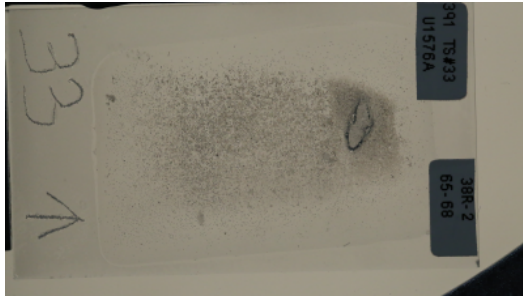
Piece no.:

Thin section thickness:

Unit/subunit: Unit IV

Thin section summary: Bioclastic sandstone with fragments of inoceramid shells, benthic foraminifera, planktonic foraminifera, and rare volcanic glass altered to zeolite. Rare chalcedony fragments. The foraminifera are typically filled by clay. The cement is zeolite.

Plane-polarized: 60792601

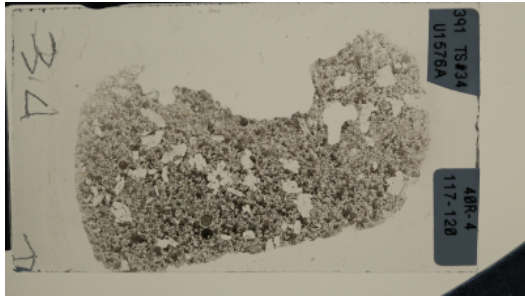


Cross-polarized: 60792621

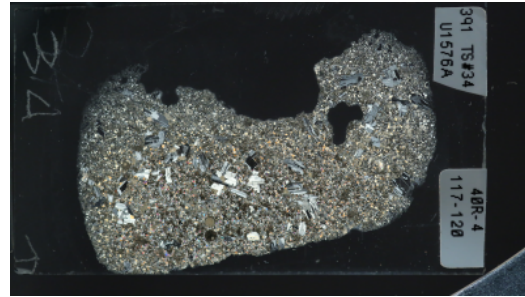


THIN SECTION LABEL ID: **391-U1576A-40R-4-W 117/120-TSB-TS# 34** Thin section no.: 34
 Observer: WN Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Glomeroporphyritic aphanitic with large plagioclase glomerocrysts and phenocrysts. Plagioclase shows a seriate texture, making it difficult to distinguish between phenocryst and groundmass crystals. Oscillatory zoning and minor internal resorption is also present. Clinopyroxene is present as phenocrysts but are noticeably smaller. Olivine is present but has been completely altered to serpentine. Fe-Ti oxides are mostly skeletal and confined to the mesostasis. Mesostasis shows patchy alteration.

Plane-polarized: 60792681



Cross-polarized: 60792701



Igneous Petrology

Lithology: moderately **plagioclase-augite-olivine phyric basalt lava flow**
Grain size distribution: bimodal **Groundmass grain size (avg.):** fine-grained
Major texture: glomeroporphyritic **Minor Texture:** aphanitic

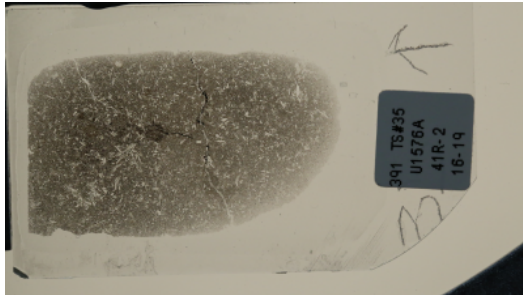
Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Olivine	3		3	0.1	0.4	subhedral	subhedral	Completely replaced by serpentine
Plagioclase	20	17	3	0.1	2.4	subhedral	tabular	Contains both phenocrysts and glomerocrysts of plagioclase. Mostly a seriate texture, making it difficult to distinguish between small phenocrysts and large groundmass crystals. Blocky crystals show mild sieve textures.
Clinopyroxene	9	8	1	0.1	0.4	subhedral	equant	No large phenocrysts - most are close to the same size. Subophitic textures.

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	20	20		0.05	0.15	subhedral	elongate	Seriate texture - difficult so separate phenocryst from groundmass
Clinopyroxene	12	11	1	0.04	0.1	anhedral	equant	
Fe-Ti oxide	3		3			anhedral	elongate	N/A
Mesostasis	33	25	8	N/A	N/A	N/A	N/A	Contains microlites of oxides and plag. Alteration causes significant discoloration

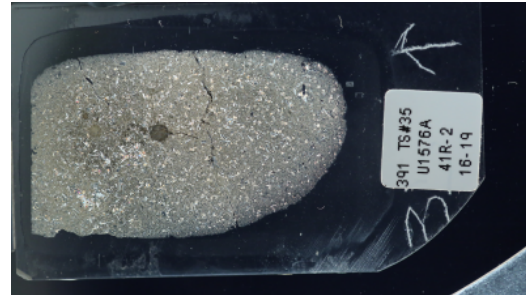
Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	2		2	0.8	1	rounded	Completely filled with radiating secondary mineral

THIN SECTION LABEL ID: **391-U1576A-41R-2-W 16/19-TSB-TS# 35** Thin section no.: 35
 Observer: MT Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Sparsely plagioclase-augite phyric basalt with an aphanitic texture. Plagioclase occurs in both phenocrysts and groundmass. Altered glass and mesostasis regions are part of the groundmass. There is also an occurrence of disseminated Fe-Ti-Oxides.

Plane-polarized: 60792721



Cross-polarized: 60792741



Igneous Petrology

Lithology: sparsely **plagioclase-augite phyric basalt massive lava flow**
Grain size distribution: bimodal **Groundmass grain size (avg.):** microcrystalline
Major texture: glomeroporphyritic **Minor Texture:** aphanitic

Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	5	5		0.1	0.8	subhedral	elongate	Plagioclase may occur as glomerocrysts associated with augite in some instances
Clinopyroxene	3	2	1	0.08	0.2	anhedral	subequant	
Oxide Fe-Ti	10	10	0	0.04	0.4			They are randomly oriented throughout the sample

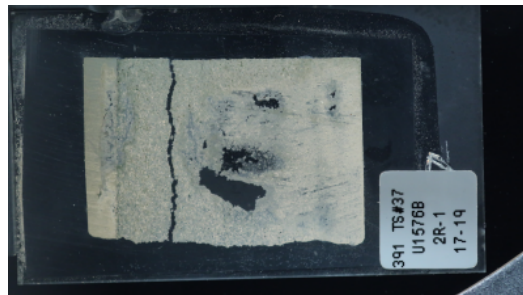
Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	5	5		0.02	0.1	subhedral	elongate	
Fe-Ti oxide	3	10				anhedral	equant	N/A
Mesostasis	38		38	N/A	N/A	N/A	N/A	
Glass	36	9	27	N/A	N/A	N/A	N/A	

THIN SECTION LABEL ID:	391-U1576B-2R-1-W 17/19-TSB-TS# 37	Thin section no.:	37
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit IV
Thin section summary:	Bioclastic sandstone with planktonic foraminifera, fragments of inoceramid shells, benthic foraminifera, and rare volcanic glass altered to zeolite. The foraminifera are typically filled by clay. Rare lithic fragments of biomicrite. The cement is zeolite. Base of a turbidite.		

Plane-polarized: 60835301



Cross-polarized: 60835321



THIN SECTION LABEL ID: 391-U1576B-4R-1-W 95/97-TSB-TS# 36	Thin section no.: 36
Observer: DB	Piece no.:
Thin section thickness:	Unit/subunit: Unit IV
Thin section summary: Biomicrite with abundant broken planktonic foraminifera and dolomite.	

Plane-polarized: 60911161



Cross-polarized: 60911181



THIN SECTION LABEL ID:	391-U1576B-4R-1-W 101/103-TSB-TS# 40	Thin section no.:	40
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit IV
Thin section summary:	Bioclastic sandstone/packstone with abundant fragments of shells (predominantly inoceramid) and foraminifera, and rare echinoderm fragments. Minor altered glass, from no to highly vesicular. The matrix is composed of micrite. The sediment additionally includes minor dolomite and fragments of biomicrite.		

Plane-polarized: 60835341

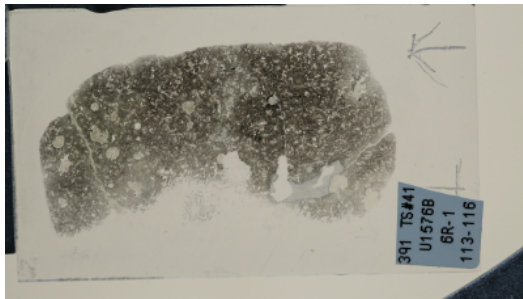


Cross-polarized: 60835361



THIN SECTION LABEL ID: **391-U1576B-6R-1-W 113/116-TSB-TS# 41** Thin section no.: 41
 Observer: JLS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Moderately plagioclase-augite phyric basalt with microlites of plagioclase and clinopyroxene. Plagioclase zoning is scarce but exhibits oscillatory patterns when present. Plagioclase labradorescence is present indicating An content of 50-70. Groundmass is microcrystalline and consists of clinopyroxene, plagioclase, and skeletal Fe-oxides. Pyrite is present in the altered groundmass, veins, and vesicles.

Plane-polarized: 60835561



Cross-polarized: 60835581

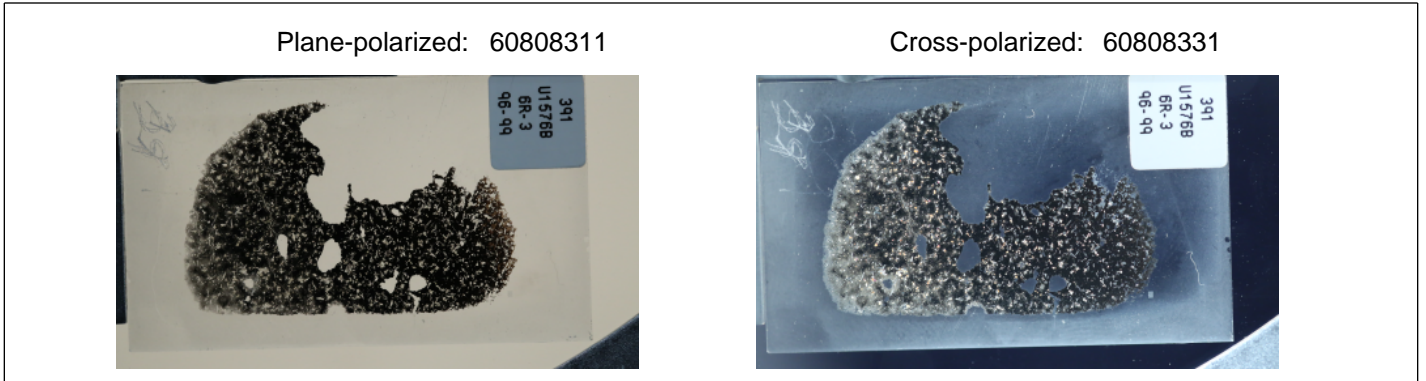


Igneous Petrology

Lithology: moderately **plagioclase-augite phyric basalt lava flow**
Grain size distribution: inequigranular **Groundmass grain size (avg.):** cryptocrystalline
Major texture: aphanitic **Minor Texture:** vitrophyric

Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	6	5	1	0.05	0.2	subhedral	tabular	Plagioclase exhibits labradorescence in reflected light.
Clinopyroxene	3	2	1	0.05	0.15	subhedral	subequant	
Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Mesostasis	50	30	20	N/A	N/A	N/A	N/A	Looks like small CPX, Plagioclase, and skeletal Fe-oxides.
Glass	39	3	36	N/A	N/A	N/A	N/A	
Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments	
Vesicle	1	0	1	0.2	2	rounded	Filled by pyrite, calcite, and zeolites.	

THIN SECTION LABEL ID: **391-U1576B-6R-3-W 96/99-TSB-TS# 39** Thin section no.: 39
 Observer: MT Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Moderately plagioclase-augite phyric basalt with an aphanitic texture. Some plagioclase grains show alteration to sericite whereas some augites show alteration along the rims or within the mineral.



Igneous Petrology

Lithology:	moderately	plagioclase-augite phyric basalt pillow lava flow
Grain size distribution:	bimodal	Groundmass grain size (avg.): glass
Major texture:	aphanitic	Minor Texture: glomeroporphyritic

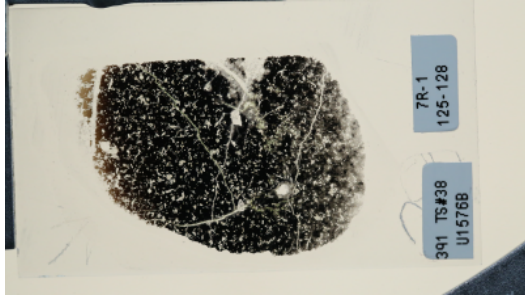
Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	8	7	1	0.04	0.5	subhedral	tabular	Some plagioclase grains altered to sericite
Clinopyroxene	4	3	1	0.04	0.3	anhedral	subequant	alteration occurs within or on mineral rims

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Glass	88	44	44	N/A	N/A	N/A	N/A	Not complete fresh glass

Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	0.5	0	0.5	0.1	0.1	rounded	vesicle consist of zeolite

THIN SECTION LABEL ID: **391-U1576B-7R-1-W 125/128-TSB-TS# 38** Thin section no.: 38
 Observer: JLS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Highly aphyric basalt pillow lava. The pillow lava contains small glomerocrysts of plagioclase and clinopyroxene in the groundmass. Glass between the groundmass crystals appears to be altered but is actually full of cryptocrystalline crystal needles of unknown composition.

Plane-polarized: 60863741



Cross-polarized: 60917991



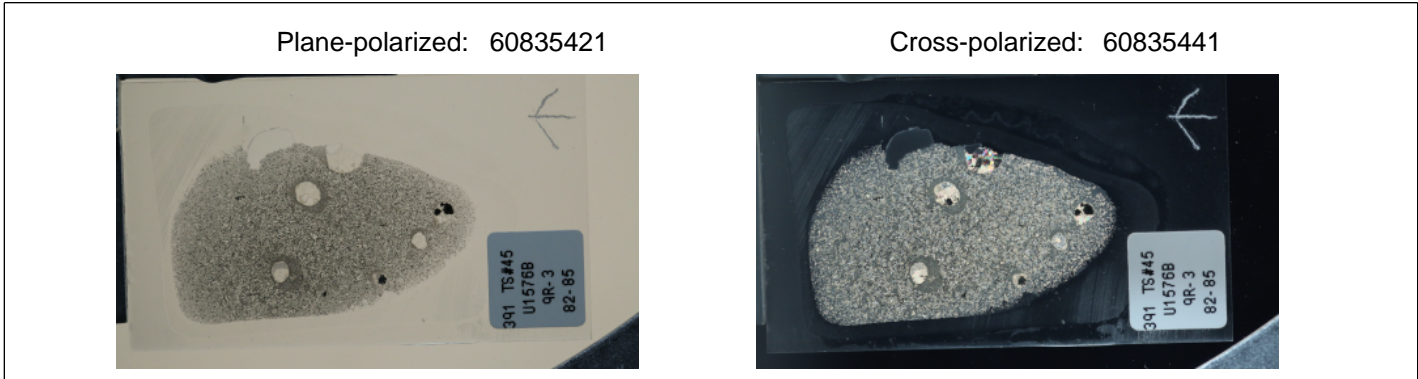
Igneous Petrology

Lithology: highly **aphyric basalt pillow lava flow**
Grain size distribution: bimodal **Groundmass grain size (avg.):** cryptocrystalline
Major texture: aphanitic **Minor Texture:** holohyaline

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	8	7	1	0.07	0.3	euhedral	tabular	Plagioclase groundmass often exhibits oscillatory zoning.
Clinopyroxene	6	3	3	0.01	0.2	subhedral	equant	
Mesostasis	60	50	10	N/A	N/A	N/A	N/A	Looks like altered glass until you use 40x objective and can see the small crystal needles.
Glass	26	10	16	N/A	N/A	N/A	N/A	

Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	1	0	1	0.05	0.1	rounded	Filled with calcite and clay.

THIN SECTION LABEL ID: **391-U1576B-9R-3-W 82/85-TSB-TS# 45** Thin section no.: 45
 Observer: JWS, JLS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Moderately aphyric basalt lava flow. The contains small glomerocrysts of plagioclase and highly altered clinopyroxene in the groundmass. Glass between the groundmass crystals is completely altered. Calcite, pyrite, zeolites, and clay fill the vesicles in the sample.



Igneous Petrology

Lithology:	moderately	aphyric basalt lava flow	
Grain size distribution:	bimodal	Groundmass grain size (avg.):	cryptocrystalline
Major texture:	aphanitic	Minor Texture:	porphyritic

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	35	30	5	0.05	0.3	euhedral	tabular	
Clinopyroxene	21	1	20	0.01	0.3	subhedral	subequant	
Fe-Ti oxide	7			0.01	0.08	anhedral	skeletal	N/A
Glass	37	0	37	N/A	N/A	N/A	N/A	Glass is completely altered.

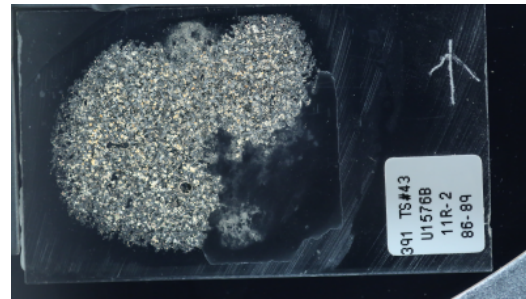
Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	3	0	3	0.2	4.2	rounded	Filled by calcite, pyrite, zeolites, and clays.

THIN SECTION LABEL ID: **391-U1576B-11R-2-W 86/89-TSB-TS# 43** Thin section no.: 43
 Observer: JWS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Euhedral plag laths set in matrix of quenched/devitrified glass. Plag-Px gloms up to 2.4 mm across. Secondary calcite in some gloms. Some isolated phenocrysts but most found in glomerpcrysts with plagioclase. Suhedral Cpx sometimes replaced by calcite. In gloms, subophitic cpx=calcite still enclosed ends of plag laths. Large skeletal magnetite grains, typically hollow with herringbone texture.

Plane-polarized: 60835381



Cross-polarized: 60835401



Igneous Petrology

Lithology: highly **plagioclase-augite phyric basalt pillow lava flow**
Grain size distribution: bimodal **Groundmass grain size (avg.):** cryptocrystalline
Major texture: porphyritic **Minor Texture:**

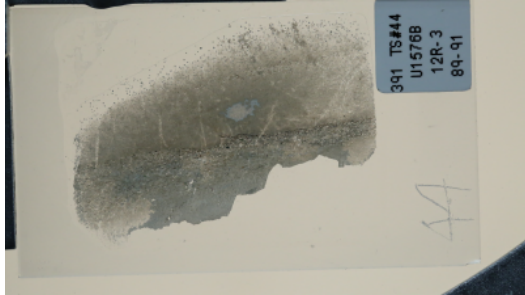
Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Olivine	0	0	0					
Plagioclase	30	30	0	0.2	1	euhedral	tabular	Euhedral plag laths set in matrix of quenched/devitrified glass. Plag-Px gloms up to 2.4 mm across. Secondary calcite in some gloms
Clinopyroxene	25	22	3	0.14	0.6	subhedral	equant	Some isolated phenocrysts but most found in glomerpcrysts with plagioclase. Suhedral Cpx sometimes replaced by calcite. In gloms, subophitic cpx=calcite still enclosed ends of plag laths.
Oxide Fe-Ti	2	2	0	0.1	0.35	subhedral	subhedral	Large skeletal magnetite grains, typically hollow with herringbone texture.

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Olivine	0	0	0					
Plagioclase	0	0	0					
Clinopyroxene	0	0	0					
Fe-Ti oxide		2	0					N/A
Mesostasis	43	40	3	N/A	N/A	N/A	N/A	Mesostasis consists of microcrystalline plag laths in clusters and plumes within microcrystalline or cryptocrystalline pyroxene, along with tiny opaques. Mesostasis appears to be quenched melt but may be devitrified glass.

Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	5	4	1	0.12	2.4	angular	Typically lined with calcite. Some rounded vesicles have calcite lining with isotropic mineral (clear UPL) and pyrite.

THIN SECTION LABEL ID:	391-U1576B-12R-3-W 89/91-TSB-TS# 44	Thin section no.:	44
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit V (S3)
Thin section summary:	Bioclastic sandstone (wackestone to packstone) with abundant foraminifera and subordinate fragments of shells (mostly inoceramid). Rare fragments of echinoderm and altered volcanic glass. The matrix is composed of micrite and clay; foraminifera chambers are often filled by clay. Rare dolomite also occurs.		

Plane-polarized: 60863761



Cross-polarized: 60863781

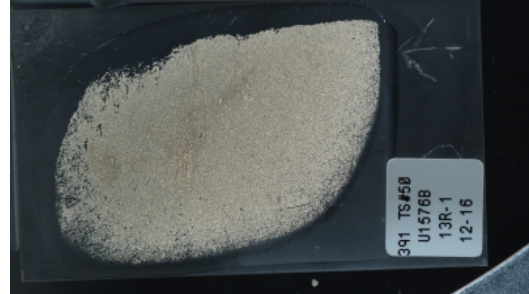


THIN SECTION LABEL ID:	391-U1576B-13R-1-W 12/16-TSB-TS# 50	Thin section no.:	50
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit V (S3)
Thin section summary:	Biomicrite with sparse planktonic foraminifera and abundant dolomite.		

Plane-polarized: 60863961

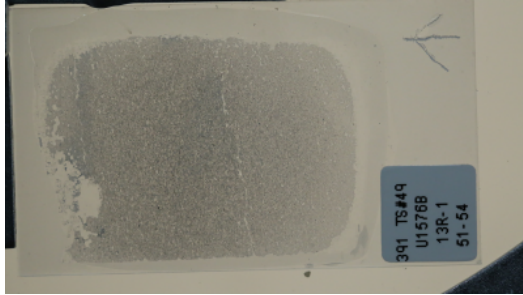


Cross-polarized: 60863981



THIN SECTION LABEL ID:	391-U1576B-13R-1-W 51/54-TSB-TS# 49	Thin section no.:	49
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit V (S3)
Thin section summary:	Bioclastic sandstone / packstone with abundant fragments of shells (mostly inoceramid) and subordinate planktonic foraminifera. Minor spicules of calcareous sponge. Shell fragments are concentrated at the base of the graded sandstone bed.		

Plane-polarized: 60863921

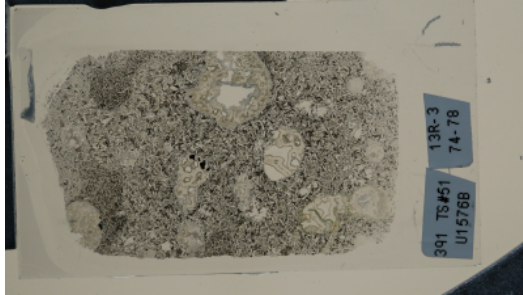


Cross-polarized: 60863941

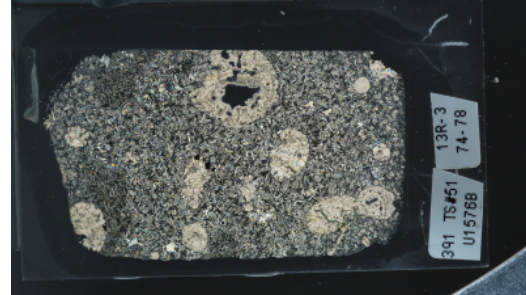


THIN SECTION LABEL ID: **391-U1576B-13R-3-W 74/78-TSB-TS# 51** Thin section no.: 51
 Observer: JLS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Moderately plagioclase-augite phyric basalt that has been moderately altered. Clinopyroxene phenocrysts and groundmass have almost been completely altered. Fe-oxides exhibit anhedral growth. Pyrite visible in altered regions and observed in vesicles. Vesicles primarily filled with calcite and clay.

Plane-polarized: 60913111



Cross-polarized: 60913131



Igneous Petrology

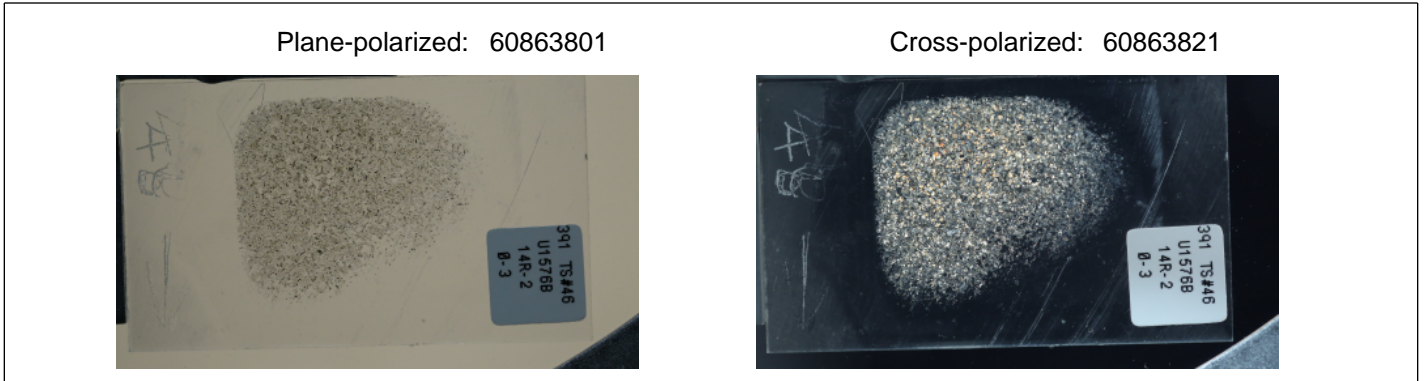
Lithology: moderately plagioclase-augite phyric basalt lava flow
Grain size distribution: seriate **Groundmass grain size (avg.):** fine-grained
Major texture: glomeroporphyritic **Minor Texture:** ophitic

Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	6	5	1	0.5	1.5	euohedral	tabular	Euohedral plagioclase laths
Clinopyroxene	4	3	1	0.3	0.8	subhedral	subequant	Clinopyroxene nucleates off of plagioclase.

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	17	17	0	0.1	0.4	euohedral	tabular	
Clinopyroxene	15	5	10	0.05	0.2	subhedral	equant	
Fe-Ti oxide	7			0.005	0.05	anhedral	elongate	N/A
Mesostasis	40	30	10	N/A	N/A	N/A	N/A	
Glass	10.9	1	9.9	N/A	N/A	N/A	N/A	Mostly altered palagonite.

Vesicle	Original (%)	Empty (%)	Filled (%)	Size min. (mm)	Size max. (mm)	Shape	Comments
Vesicle	3	0	3	1	7	subangular	Typically filled with calcite and clay.

THIN SECTION LABEL ID: **391-U1576B-14R-2-W 0/3-TSB-TS# 46** Thin section no.: 46
 Observer: JLS Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Highly plagioclase-augite-phyric basalt with subophitic and intersertal textures. No clear groundmass phase - most crystals are phenocrysts. Altered glass is present between phenocryst crystals. Fe-Ti oxides are large enough to be considered phenocrysts.



Igneous Petrology

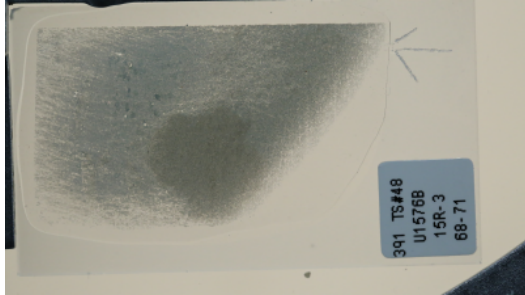
Lithology:	highly	plagioclase-augite phyric basalt lava flow
Grain size distribution:	seriate	Groundmass grain size (avg.): fine-grained
Major texture:	intersertal	Minor Texture: ophitic

Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	26	25	1	0.4	2	subhedral	tabular	
Clinopyroxene	35	30	5	0.4	1	subhedral	equant	subophitic textures are common
Oxide Fe-Ti	5	5	0	0.1	0.3	subhedral	subhedral	Large skeletal oxides form between silicate phenocrysts.

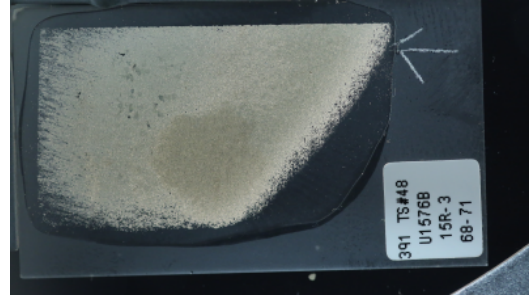
Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	6	5	1	0.05	0.4	subhedral	elongate	
Clinopyroxene	8	5	3	0.03	0.4	subhedral	equant	
Fe-Ti oxide		5						N/A
Glass	20		20	N/A	N/A	N/A	N/A	altered to palagonite

THIN SECTION LABEL ID:	391-U1576B-15R-3-W 68/71-TSB-TS# 48	Thin section no.:	48
Observer:	DB	Piece no.:	
Thin section thickness:		Unit/subunit:	Unit V (S6)
Thin section summary:	Micrite with dolomite. No fossil seen, probably nannofossil ooze with diagenetic overprint.		

Plane-polarized: 60863881

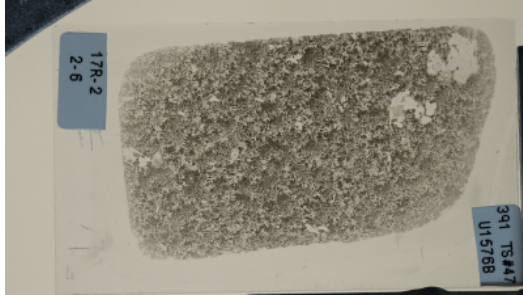


Cross-polarized: 60863901

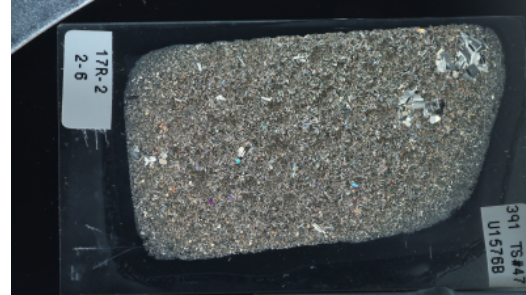


THIN SECTION LABEL ID: **391-U1576B-17R-2-W 2/6-TSB-TS# 47** Thin section no.: 47
 Observer: JLS, WN Piece no.:
 Thin section thickness: Unit/subunit:
 Thin section summary: Highly glomerophorphic/porphyritic with aphanitic mesostasis laden with skeletal plagioclase and Fe-Ti oxides. Plagioclase >> Clinopyroxene = olivine. Plagioclase and clinopyroxene show oscillatory zoning (mostly bimodal) with mild resorption in the cores. Olivine is partially replaced with a serpentine/saponite mineral.

Plane-polarized: 60863841



Cross-polarized: 60863861



Igneous Petrology

Lithology: moderately

plagioclase-augite-olivine phyric basalt lava flow

Grain size distribution: bimodal

Groundmass grain size (avg.): microcrystalline

Major texture: porphyritic

Minor Texture: dendritic or skeletal

Phenocrysts	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Olivine	5	2	3	0.2	1	subhedral	subhedral	Many grains with olivine shape, pale green color completely replaced by low birefringence phase (serpentine?) plus carbonate. Similar grains in groundmass. Unaltered grains might be Cpx. Intergrown with plag in one place, single phenocryst in others.
Plagioclase	3	3	0	0.4	2.4	euhedral	tabular	Euhedral plag laths, commonly in plag-only or plag-dominant glomerocrysts up to 5 mm across. No zoning or minor oscillatory zoning in cores, with major step to outermost rim seen in almost all big plag phenocrysts. Similar step seen in Cpx.
Clinopyroxene	2	2	0	0.2	0.4	subhedral	elongate	Some isolated phenocrysts but most found in glomerocrysts with plagioclase. Subhedral Cpx sometimes replaced by calcite. In gloms, subophitic cpx=calcite still enclosed ends of plag laths.

Groundmass	Original (%)	Present (%)	Replaced (%)	Size min. (mm)	Size max. (mm)	Shape	Habit	Comments
Plagioclase	18	15	3	0.1	0.3	euhedral	elongate	Long, slender plag grains randomly oriented throughout the groundmass. Most display skeletal growth with visible hollow interiors (recorded as "swallow tails" or hollow rectangles)
Clinopyroxene	7	7	0	0.05	0.17	subhedral	equant	
Fe-Ti oxide	5		3	0.02	0.2	subhedral	elongate	N/A
Mesostasis	50	40	10	N/A	N/A	N/A	N/A	Was once melt but rapid growth during eruption prevented true glass formation. Mostly "fresh" but contains patches of alteration.
Glass	0	0		N/A	N/A	N/A	N/A	

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