Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and
by "ERDF A way of making Europe"

Petrographic dataset of the Holocene volcanism on the island of El Hierro (Canary Islands, Spain)

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Las Palmas de
Gran Canaria

ediciones

Introduction

This dataset collects the petrographic description of 64 lava flow and pyroclast samples from the Holocene eruptions investigated on the island of El Hierro (Canary Islands, Spain) in the LAJIAL Project (PGC2018-101027-B-I00). The project was developed at the University of Las Palmas de Gran Canaria, the GEO3BCN (CSIC), the University of Barcelona, and the University of La Laguna.

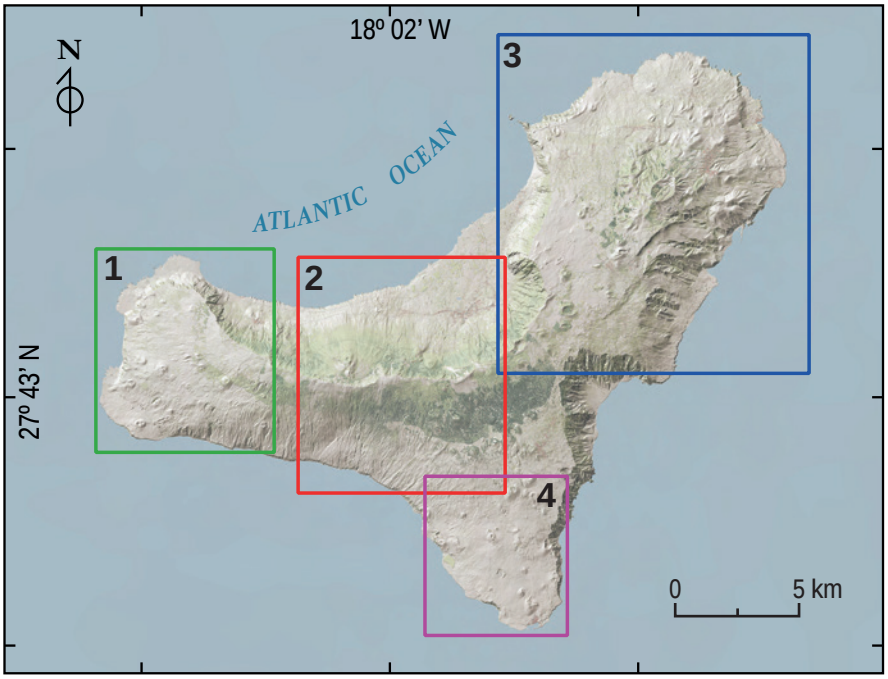
The petrographic description of each sample includes a location map of El Hierro Island, a picture of the outcrop, a general view of the thin section, and general information about the sample. The geographic location of samples in the maps on page 2 is linked to the corresponding sample petrographic data, and in turn, clicking the location of the sample on the location map accompanying the petrographic data, the user returns to the general maps on page 2.

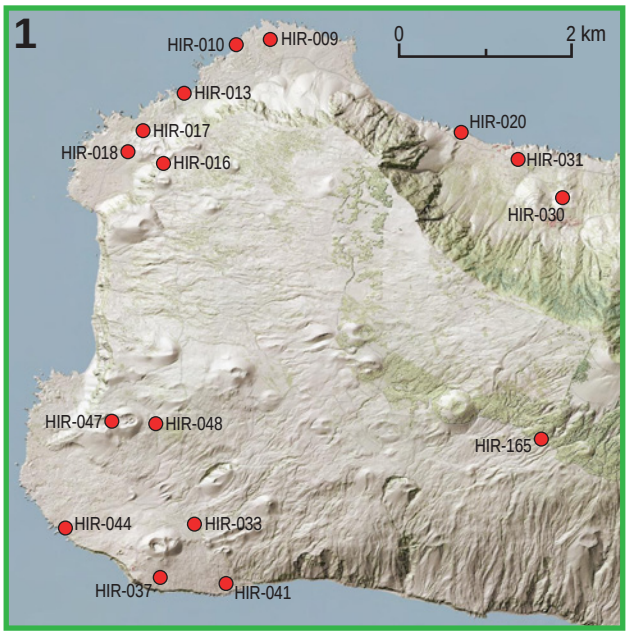
Representative microphotographs are shown for each sample. In most cases, the first microphotograph corresponds to an overall view of the sample, while the second is typically focused on a petrographic detail. The petrographic study was carried out using a Zeiss Axiophot optical microscope at the Department of Mineralogy, Petrology, and Applied Geology of the University of Barcelona. Point counting was performed for each sample to quantify the relative abundance of different components (phenocrysts, groundmass, and vesicles) and the percentage of different mineral phases. The counting was done using the JMicroVision v.1.3.4 software (Roduit, 2020) on high-resolution thin section scans. For each sample, a limit counting of 1000 points in a recursive grid was considered. Counting results are shown as component assemblage and mineral assemblage.

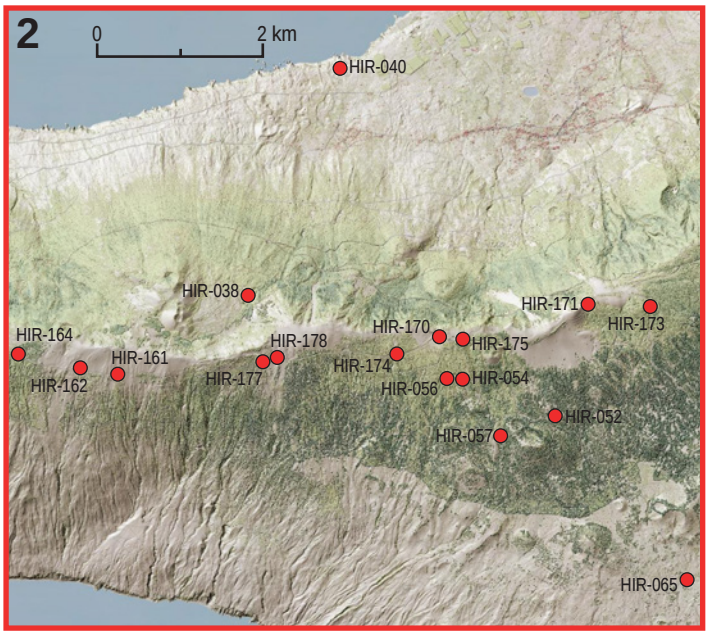
The volcanic rocks studied include 51 lavas and 13 tephras. The glass is very scarce or absent in the lava samples, making it impossible to identify under the optical microscope and nearly imperceptible under the scanning electron microscope. Therefore, all studied lavas have been classified as holocrystalline. Conversely, in the case of tephra, the presence of glass is evident in most samples, classifying them as hypocrystalline or hypohyaline, depending on their crystallinity. Up to three types of juvenile shards have been observed in tephra. Most fragments are aphyric to slightly porphyritic, highly vesicular, and with sideromelane glass, giving them a caramel to light-brown tone. These shards have been classified as Type 1 in all tephra samples, and they are the type of fragment used for component and mineral abundance quantification through point counting.

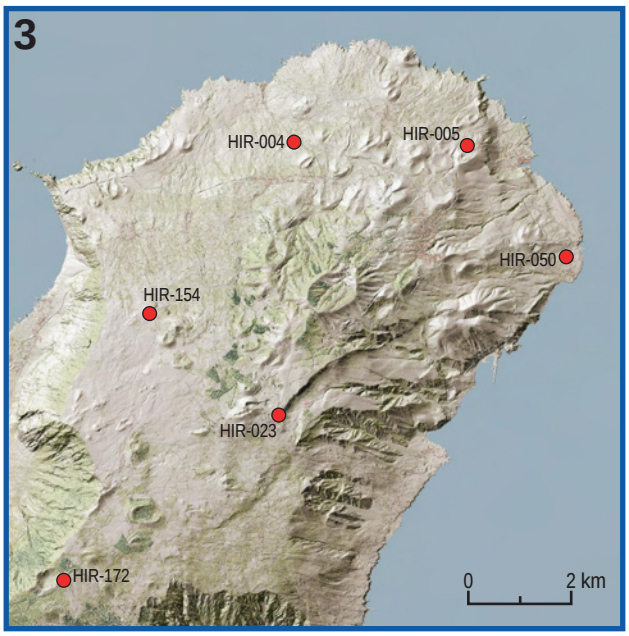
The classification is on a non-genetic basis using the total alkali-silica (TAS) diagram according to Le Bas *et al.* (1986). Abbreviations for mineral names are from Warr (2021) and the crystal terminology from Zellmer (2021). The rift and identification number (ID) of the eruption name are according to Prieto-Torrell *et al.* (2024).

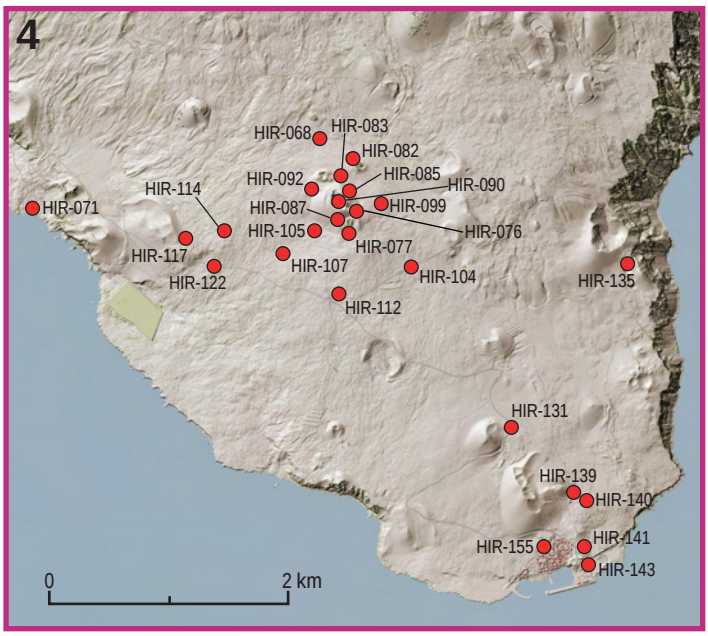
LINK TO LOCATE SAMPLE (CLICK ON THE DOT)



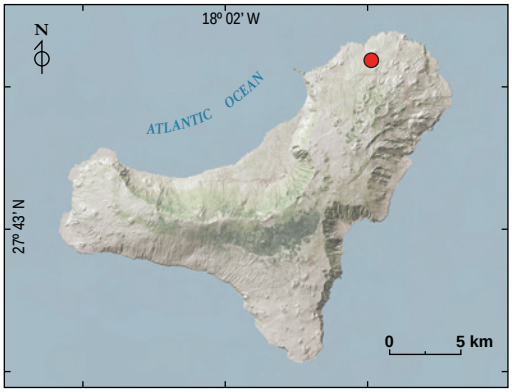






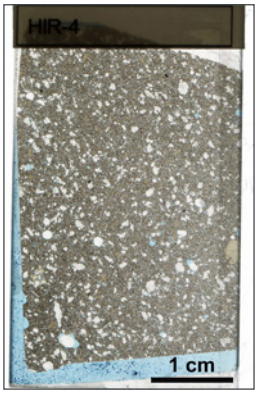


LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-004
Location (Lat/Long WGS84)	27.828749 / -17.940942
Eruption name (rift) / ID	Montaña de Aguarijo (NE) / 9
Material type	Lava
Outcrop description	Aphanitic, black in colour, vesiculated pahoehoe lava flow formed a lateral levee of a lava tube channelled into a ravine
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Pl + Ox + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.4mm; Euhedral to subhedral crystals, the latter with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

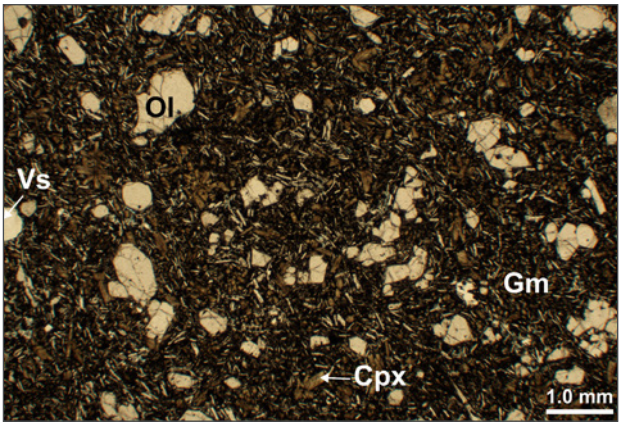
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.8mm; Subhedral crystals with strongly embayed rims; Complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Normal to reverse and sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

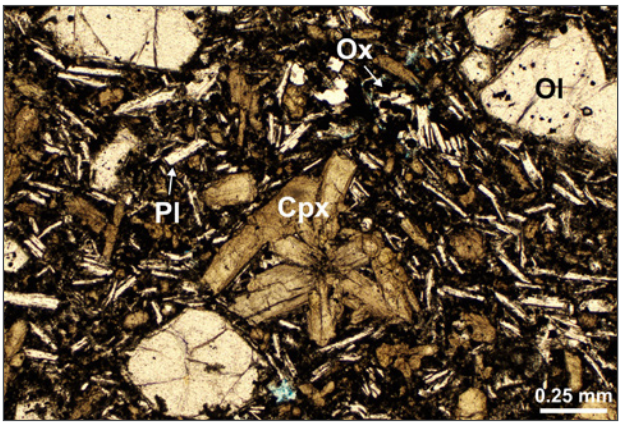
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals, the latter with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

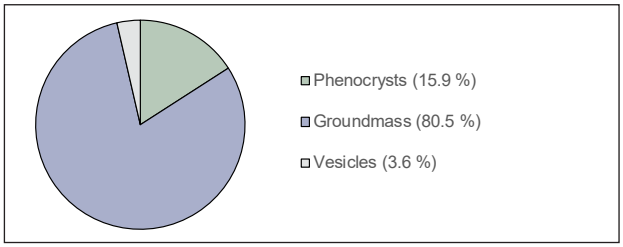
GENERAL VIEW (PPL)



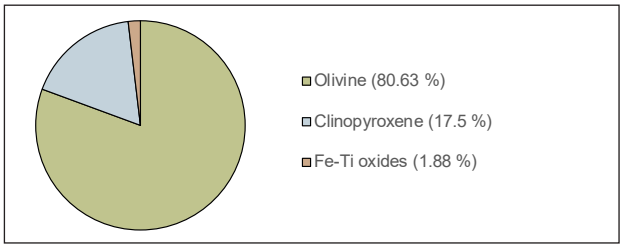
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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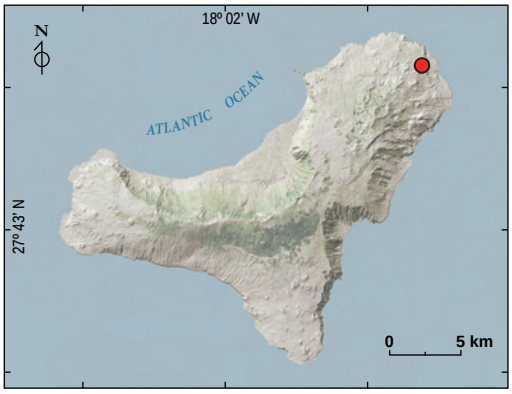
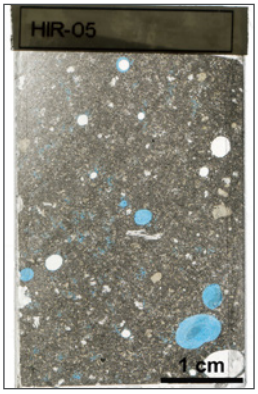
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-005
Location (Lat/Long WGS84)	27.828005 / -17.906676
Eruption name (rift) / ID	Montaña del Tesoro (NE) / 1
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, vesiculated pahoehoe lava flow in a succession of thin (<0.5m) flows
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 4mm; Subhedral crystals, some of them with slightly to strongly embayed rims and minor skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with strongly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

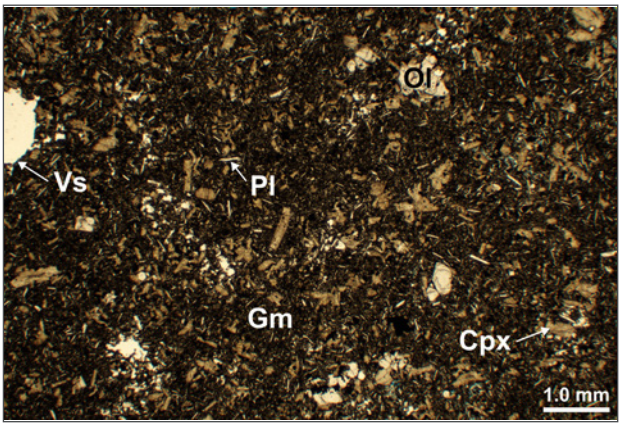
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.9mm; Euhedral crystals; Sector and oscillatory zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

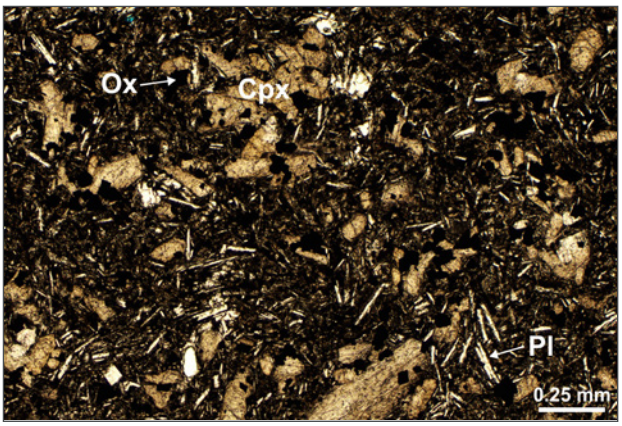
Fe-Ti oxides:
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.3mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

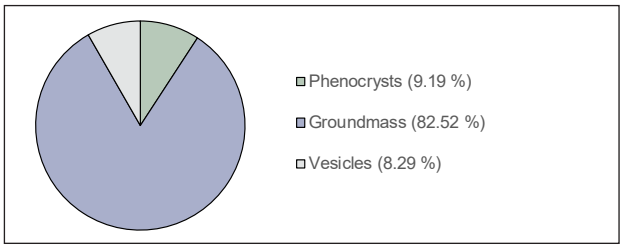
GENERAL VIEW (PPL)



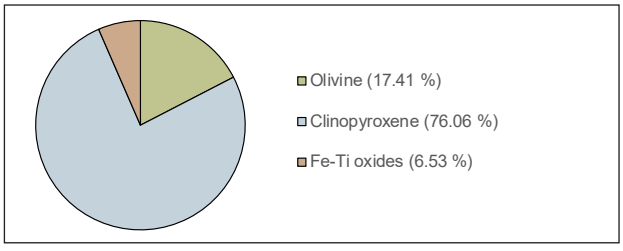
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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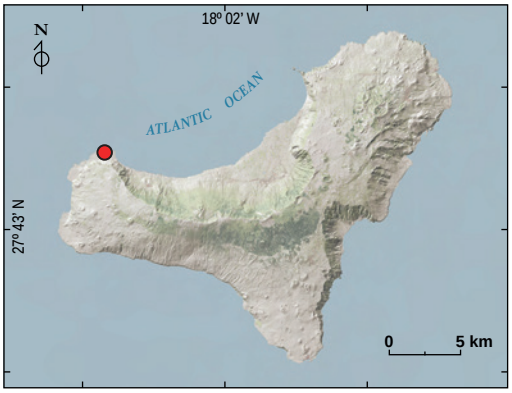
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-009
Location (Lat/Long WGS84)	27.768878 / -18.131338
Eruption name (rift) / ID	Arenas Blancas (NW) / 33
Material type	Lava
Outcrop description	Aphanitic, grey in colour, vesiculated spiny pahoehoe lava flow of ≈1m thick along a flat emerged marine platform
TAS Classification	Tephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with trachytic pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ox + Ol + Cpx
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts and groundmass phase.
Macrocrysts: Maximum size of 2mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

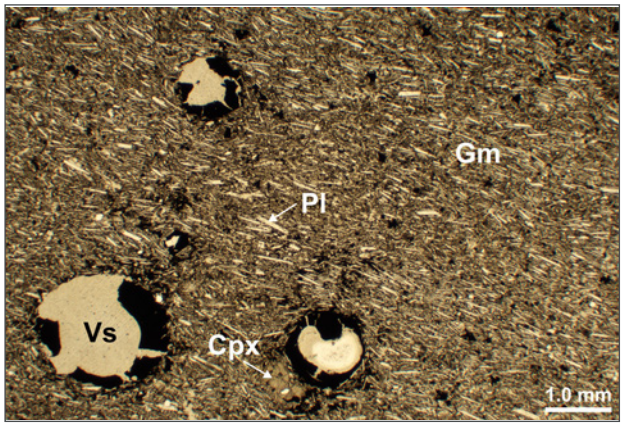
Clinopyroxene
Ocurrs as macrocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.2mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass, defining a trachytic texture.

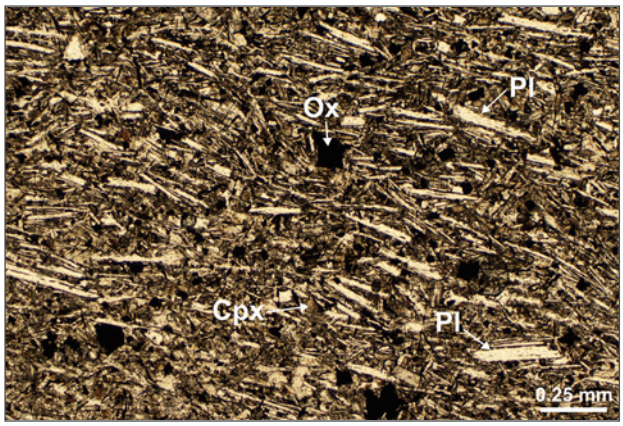
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

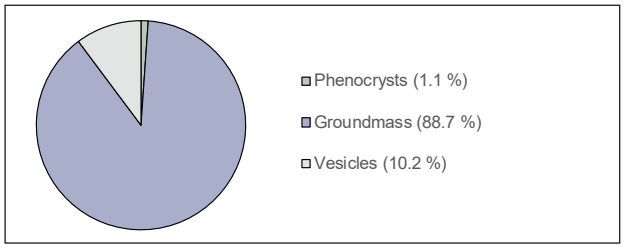
GENERAL VIEW (PPL)



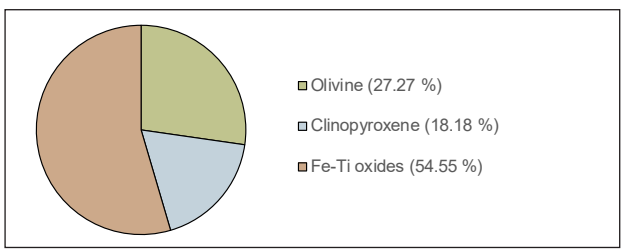
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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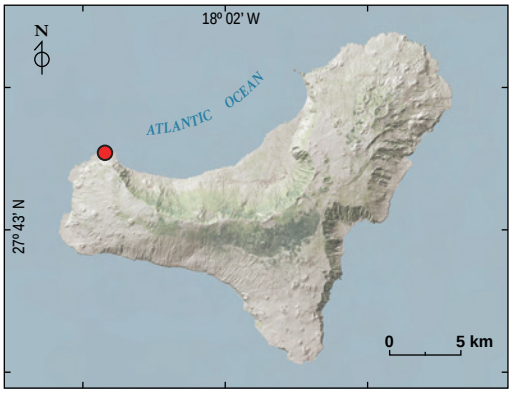
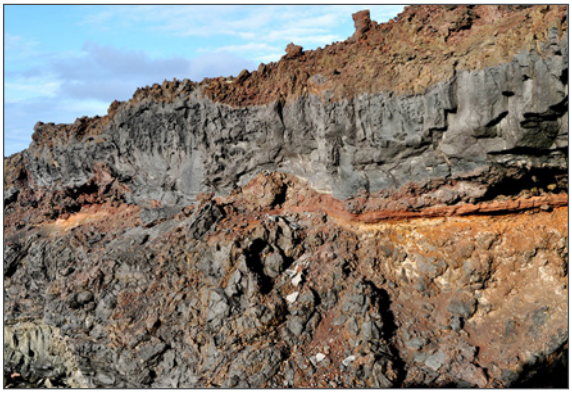
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-010
Location (Lat/Long WGS84)	27.768158 / -18.135252
Eruption name (rift) / ID	Roque de Basco (NW) / 30
Material type	Lava
Outcrop description	Aphanitic, grey in colour, a'a lava flow of ≈5m thick about volcaniclastic sequence forming an old emerged (≈15m) marine platform
TAS Classification	Phonotephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	-
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

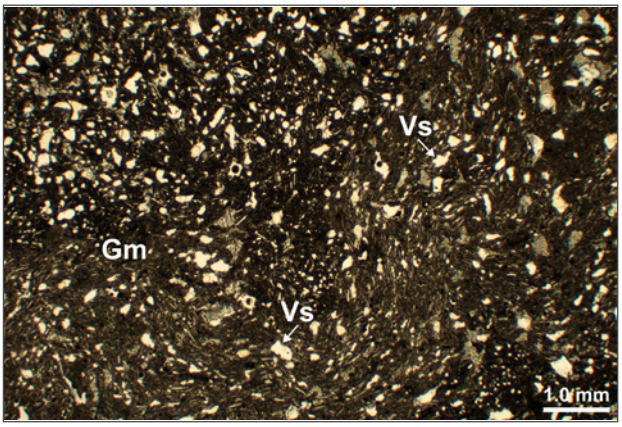
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

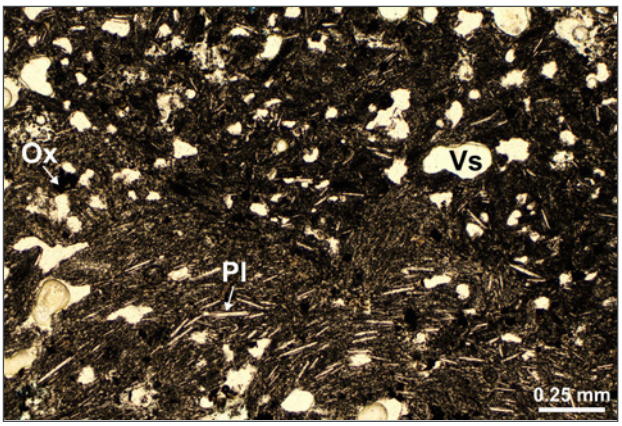
Fe-Ti oxides
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

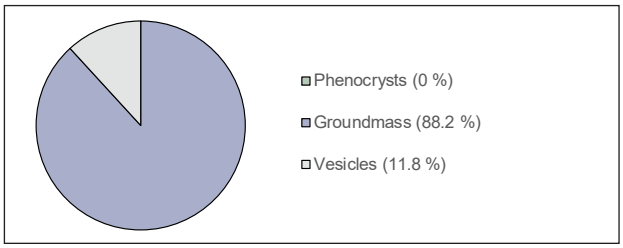
GENERAL VIEW (PPL)



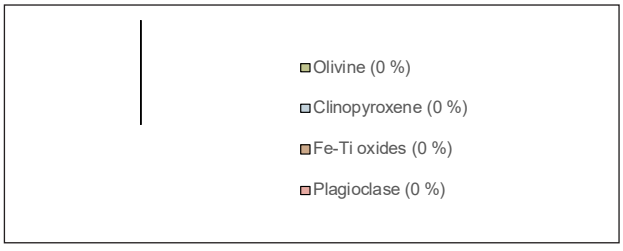
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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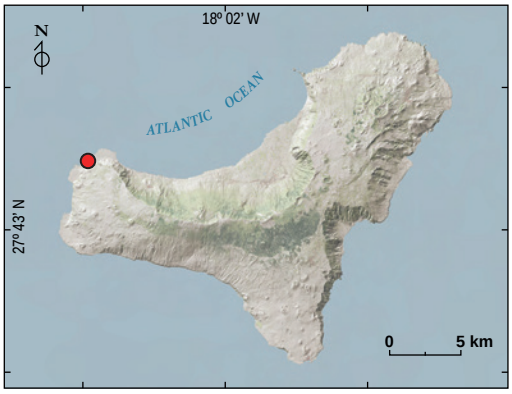
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-013
Location (Lat/Long WGS84)	27.762298 / -18.141482
Eruption name (rift) / ID	Montaña de Marcos (NW) / 23
Material type	Lava
Outcrop description	Aphanitic, grey in colour, thick (≈10m) a'a lava flow in the coastal line
TAS Classification	Hawaiite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with trachytic pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Pl + Ox
Groundmass assemblage	Pl + Ox + Cpx + Ol

Olivine
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

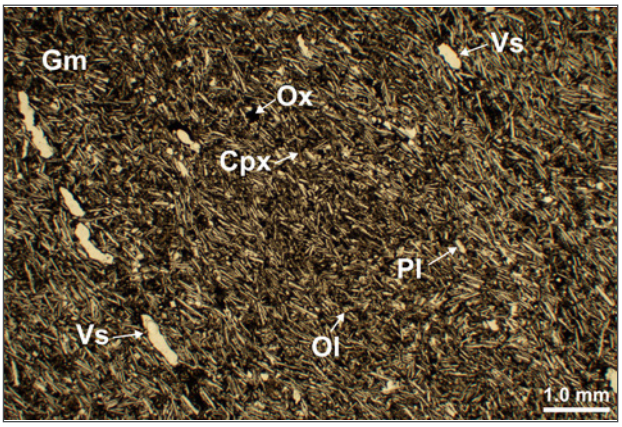
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.7mm; Euhedral crystals.
Mesocrysts: Maximum size of 0.25mm; Euhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass, definig a trachytic texture.

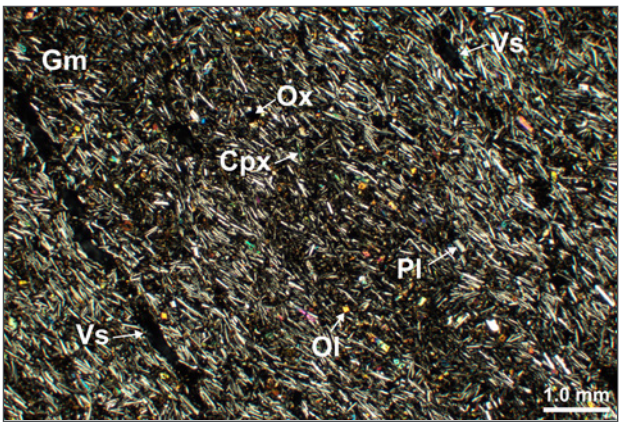
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

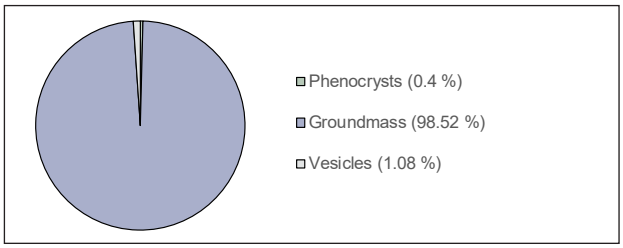
GENERAL VIEW 1 (PPL)



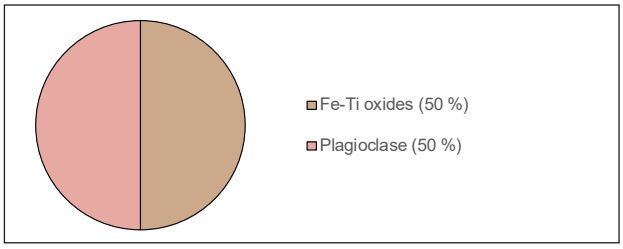
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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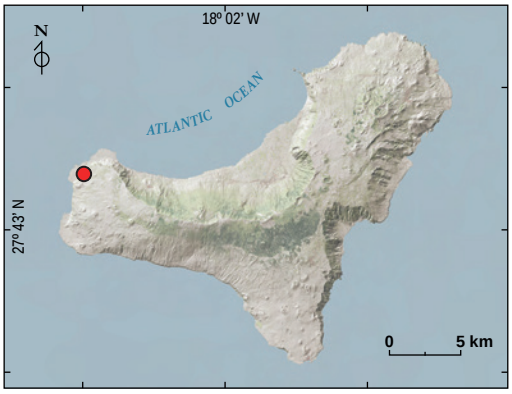
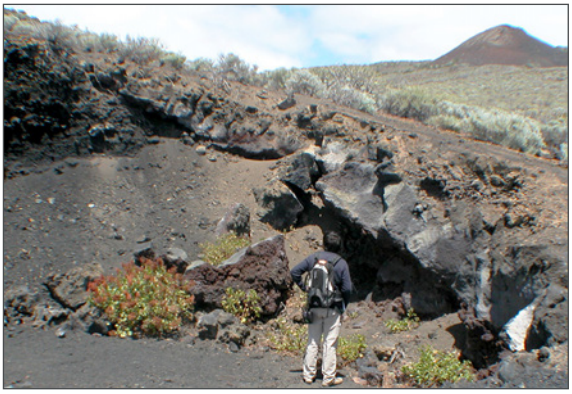
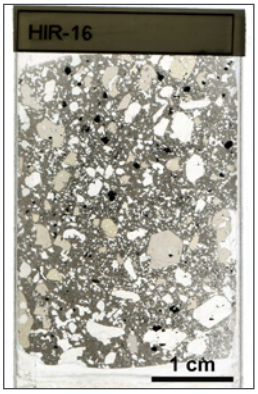
LOCATION MAP



OUTCROP



THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-016
Location (Lat/Long WGS84)	27.754223 / -18.143947
Eruption name (rift) / ID	Montaña de los Guirres (NW) / 24
Material type	Lava
Outcrop description	Massive a'a lava flow of 1.5m in thickness in a succession of two lava flows above Hoya del Verodal cone
TAS Classification	Picrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Pl + Ox + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 5.8mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

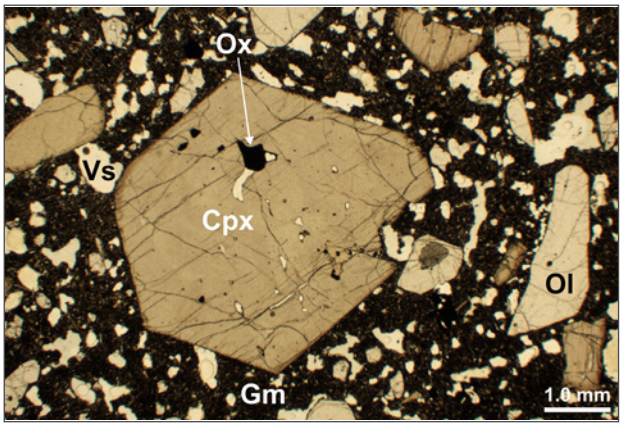
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 6.5mm; Euhedral crystals with resorbed cores; Normal to reverse and complex zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals; Normal to reverse zoning; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

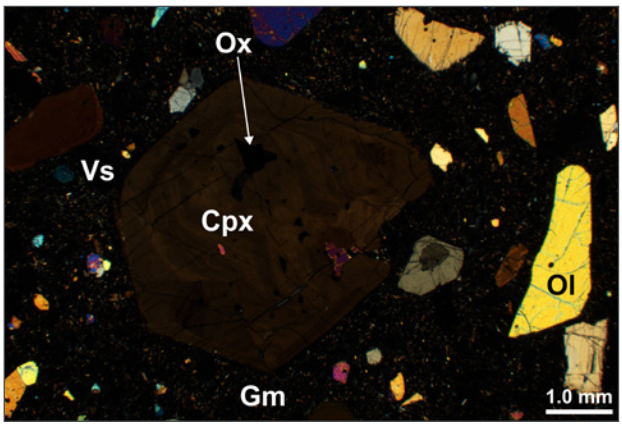
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

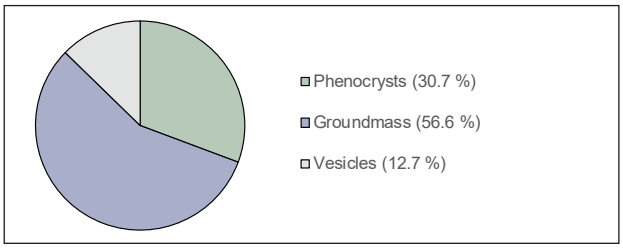
GENERAL VIEW 1 (PPL)



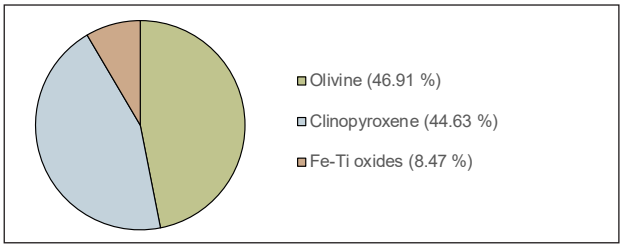
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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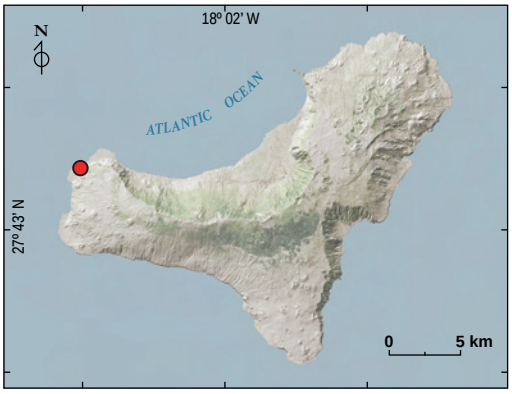
UNIÓN EUROPEA
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-017
Location (Lat/Long WGS84)	27.758020 / -18.146327
Eruption name (rift) / ID	Hoya del Verodal (NW) / 25
Material type	Lava
Outcrop description	Aphanitic, grey in colour, vesiculated a'a lava flow of ≈2m thick
TAS Classification	Tephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	-
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

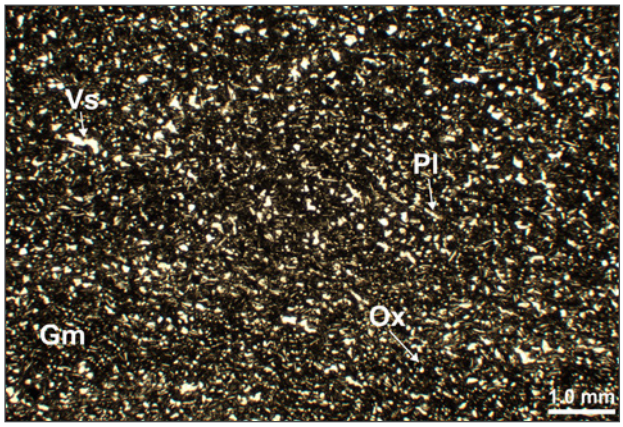
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

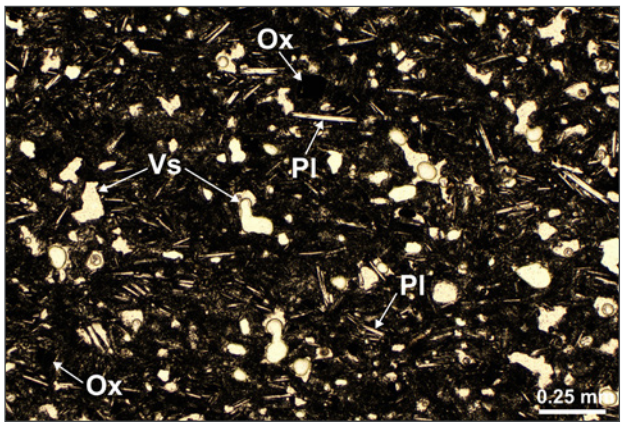
Fe-Ti oxides
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals and minor glomerocrysts in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

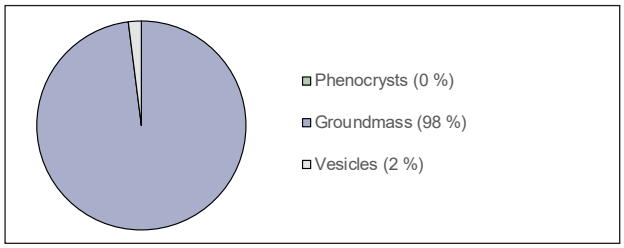
GENERAL VIEW (PPL)



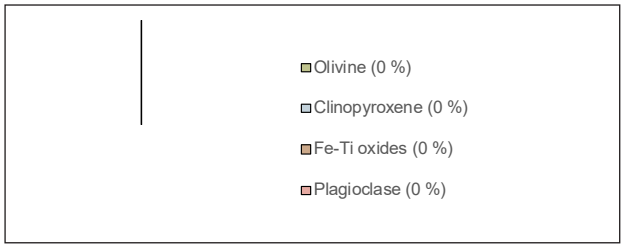
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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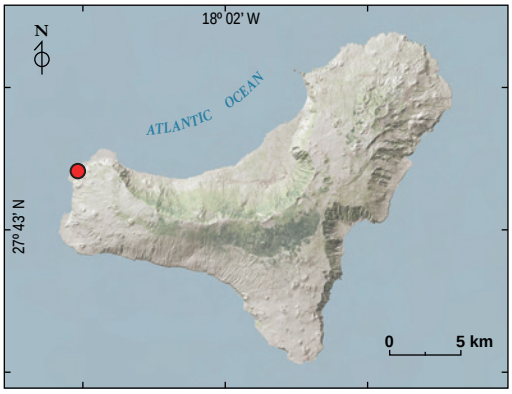
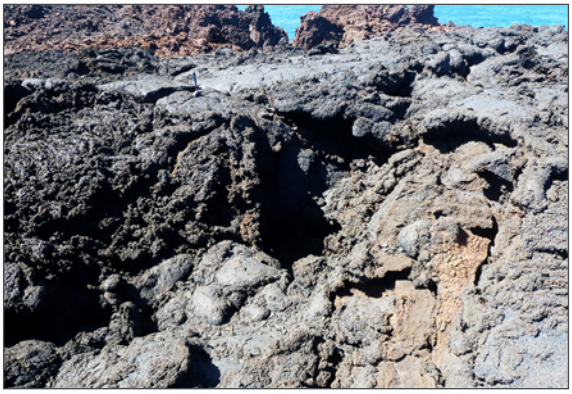
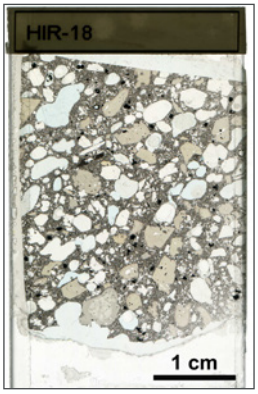
LOCATION MAP



OUTCROP



THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-018
Location (Lat/Long WGS84)	27.755660 / -18.148186
Eruption name (rift) / ID	Lomo Negro (NW) / 2
Material type	Lava
Outcrop description	Porphyritic and highly vesiculated pahoehoe lava flow, black in colour, ≈0.5m in thickness
TAS Classification	Picrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Cpx + Pl + Ox + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.4mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims, Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

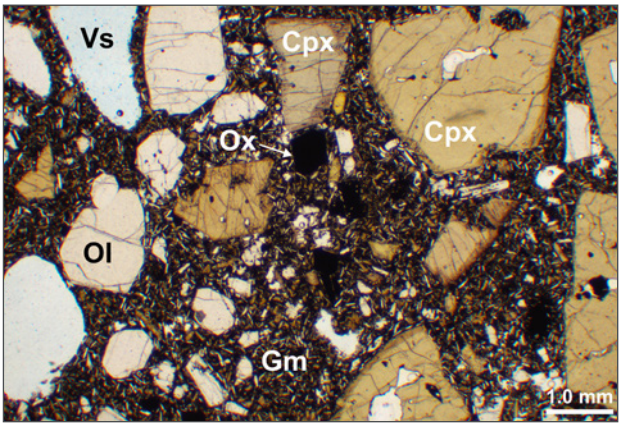
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 6.5mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims; Normal to reverse and complex zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Normal to reverse zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

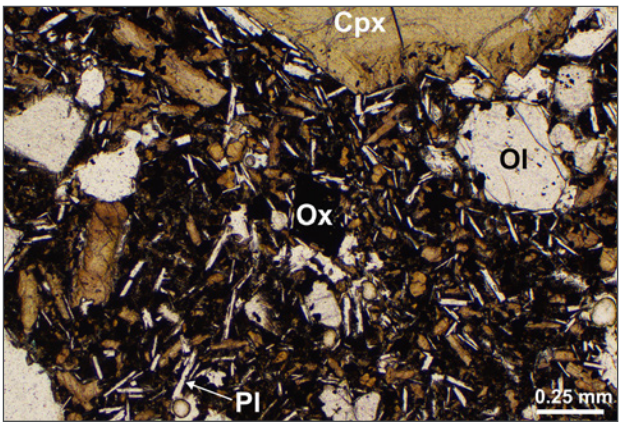
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

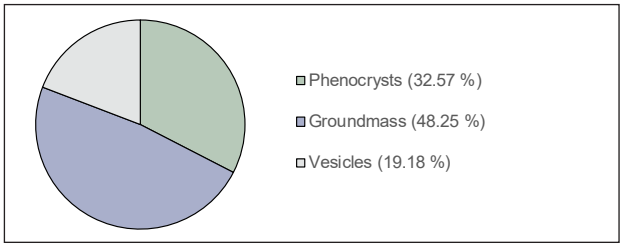
GENERAL VIEW (PPL)



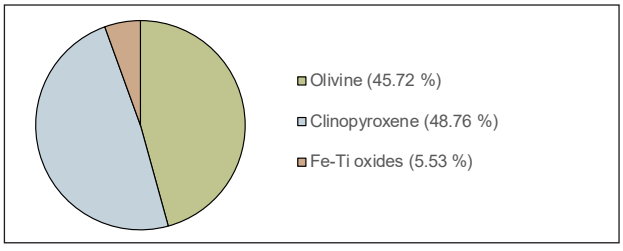
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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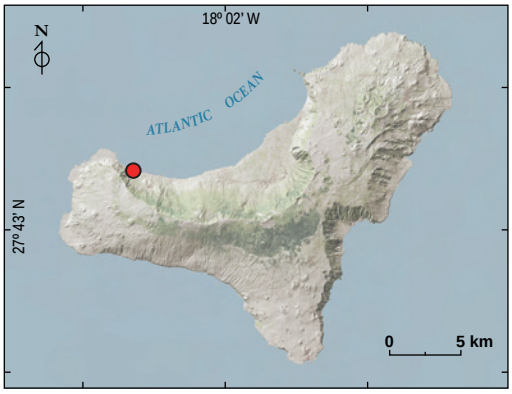
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-020
Location (Lat/Long WGS84)	27.757876 / -18.108868
Eruption name (rift) / ID	Lomo Cabras (NW) / 42
Material type	Lava
Outcrop description	Aphanitic, grey in colour, a'a lava flow of ≈2m thick about a cliff-forming lava located at ≈5m above sea level
TAS Classification	Tephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ox + Ol + (Pl)
Groundmass assemblage	Pl + Cpx + Ox + Ol

Olivine
Ocurs as macrocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.3mm; Subhedral to anhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

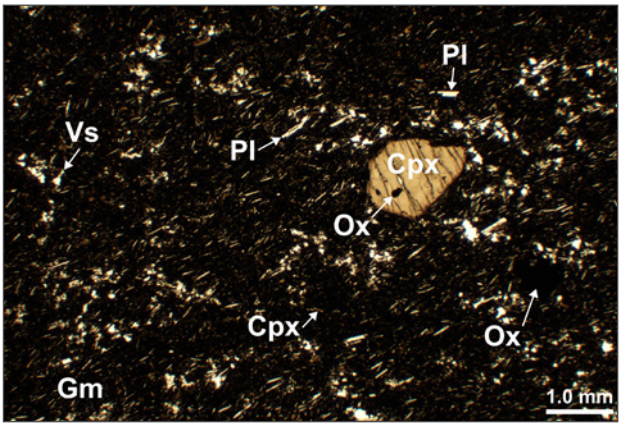
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.7mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims; Normal to reverse and sector zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals and minor glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Occurs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.32mm; Minor euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

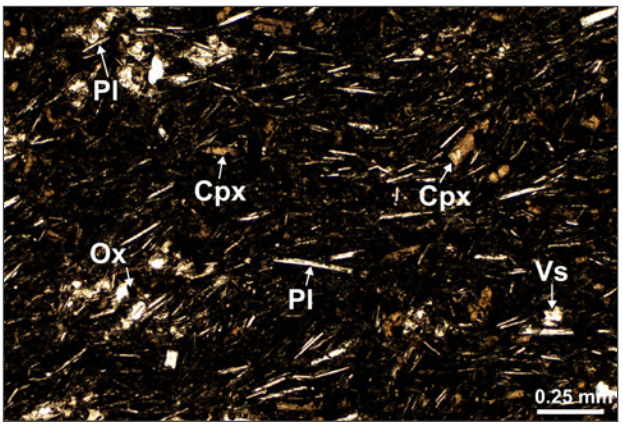
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groudmass phase.
Macrocrysts: Maximum size of 0.8mm; Subhedral to anhedral crystals, some of them with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

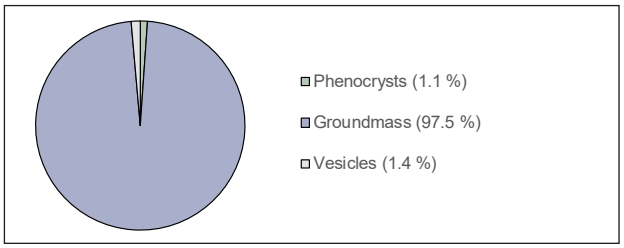
GENERAL VIEW (PPL)



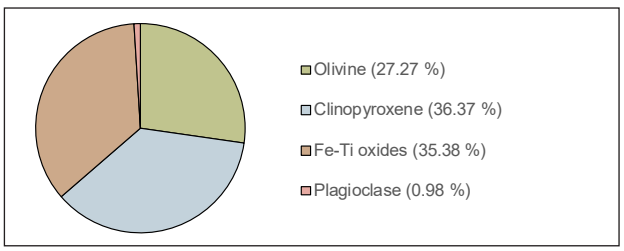
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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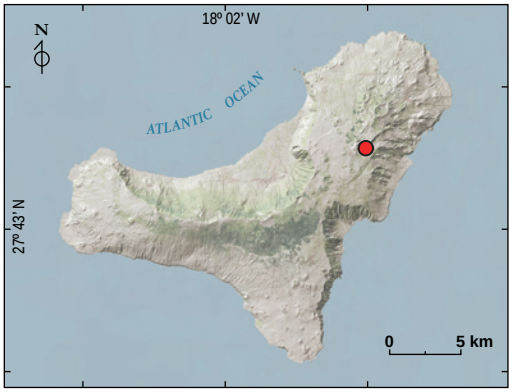
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-023
Location (Lat/Long WGS84)	27.774281 / -17.943917
Eruption name (rift) / ID	Montaña Chamuscada (NE) / 7
Material type	Lava
Outcrop description	Very thick (5 to 10m) a'a lava flow, low crystallinity, with well-developed lava channels and levees
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Ox + Cpx + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 4.8mm; Subhedral to anhedral crystals with slightly embayed rims, some of them with skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

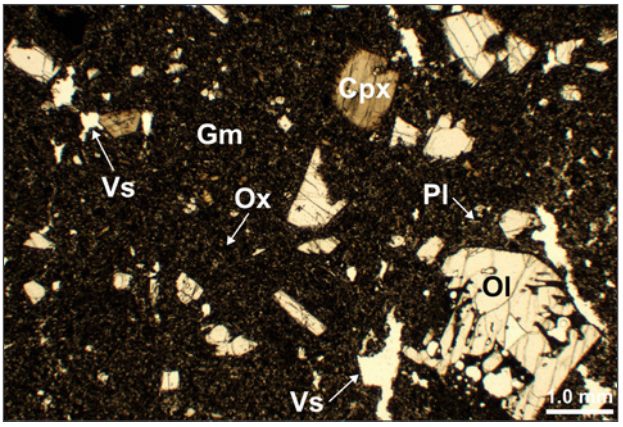
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.0mm; Euhedral crystals, some of them with resorbed cores; Normal to reverse zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals; Normal to reverse and sector zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

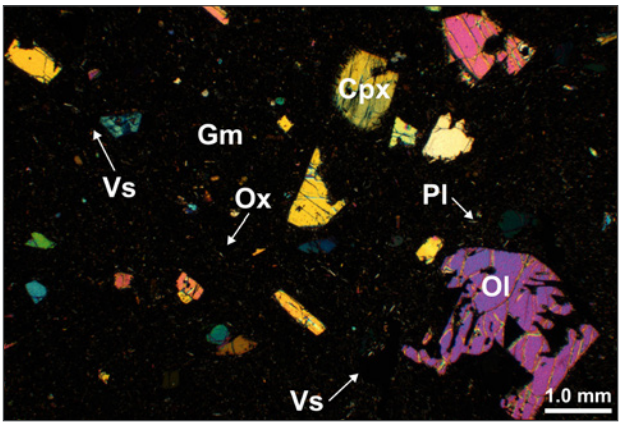
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.8mm; Subhedral crystals, some of them with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

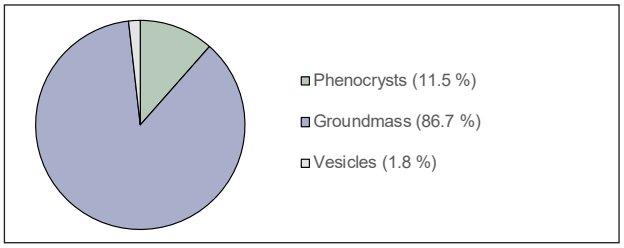
GENERAL VIEW 1 (PPL)



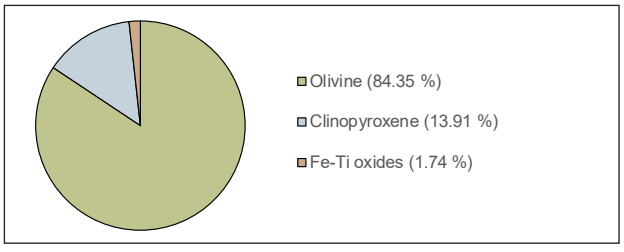
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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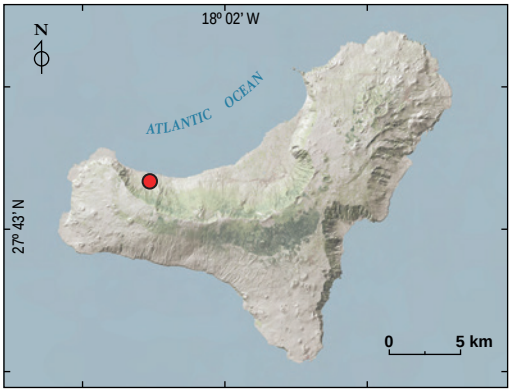
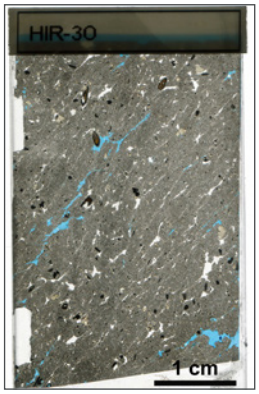
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-030
Location (Lat/Long WGS84)	27.750117 / -18.096927
Eruption name (rift) / ID	Sabinosa (NW) / 32
Material type	Lava
Outcrop description	Aphanitic and highly vesiculated scoriaceous a'a lava flow, ≈2m thick, grey in colour, close to its emission volcanic cone
TAS Classification	Hawaiite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Am + Ox + Ol
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.7mm; Euhedral crystals; Oscillatory and sector zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Oscillatory and sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

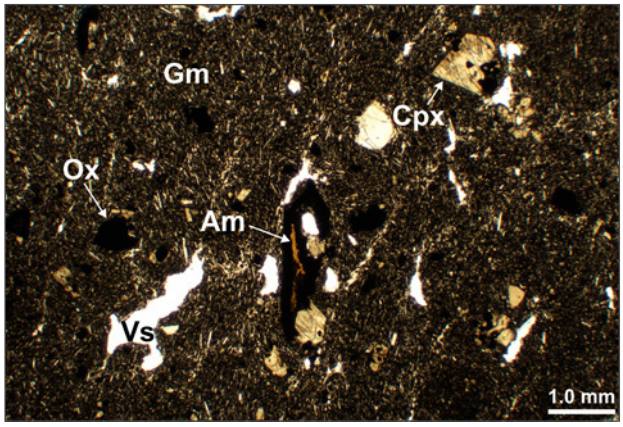
Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1mm; Euhedral to subhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass; also occurring as secondary minerals replacing amphibole.

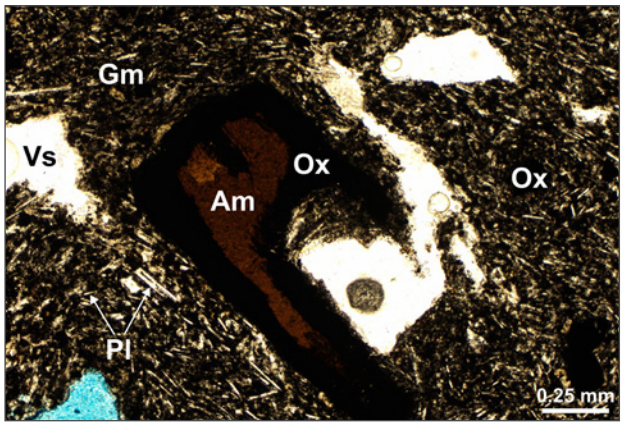
Amphibole
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 1.7mm; Anhedral crystals with slightly embayed rims; Dark reaction rims partially masking the original crystal; Reaction rims formed by fine Fe-Ti oxides.
Mesocrysts: Maximum size of 0.5mm; Anhedral crystals partially or totally replaced by secondary Fe-Ti oxides.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Am: amphibole; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

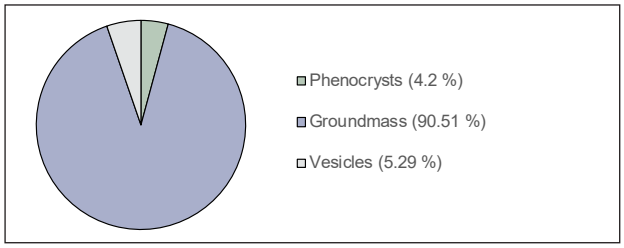
GENERAL VIEW (PPL)



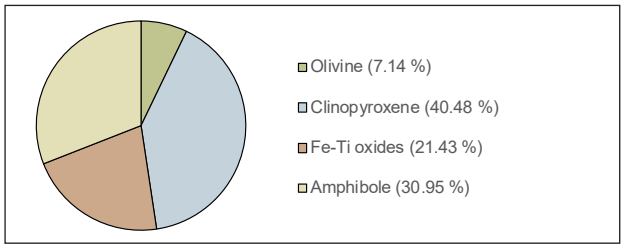
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

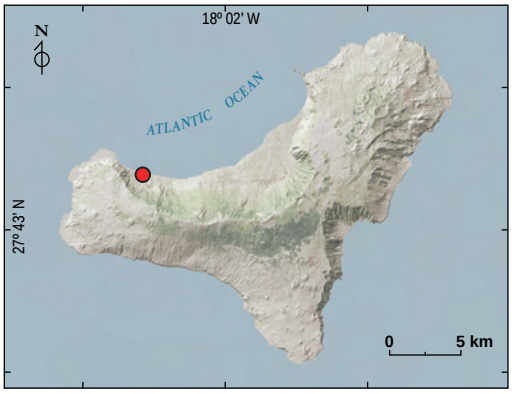


MINERAL ASSEMBLAGE

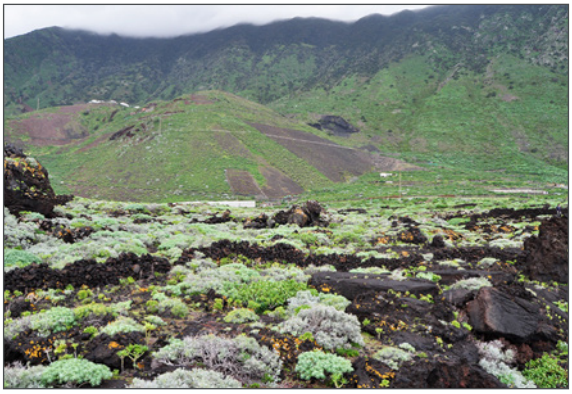


Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-031
Location (Lat/Long WGS84)	27.754697 / -18.102218
Eruption name (rift) / ID	Sabinosa (NW) / 32
Material type	Lava
Outcrop description	Aphanitic and highly vesiculated spiny pahoehoe lava flow, ≈1.5m in thickness, grey in colour, far from its emission volcanic cone
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicuar with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.8mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

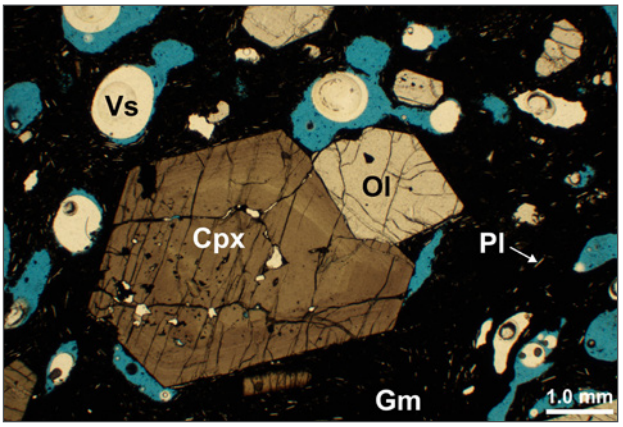
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.7mm; Euhedral to subhedral crystals, some of them with slightly resorbed cores and slightly to strongly embayed rims; Sector and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

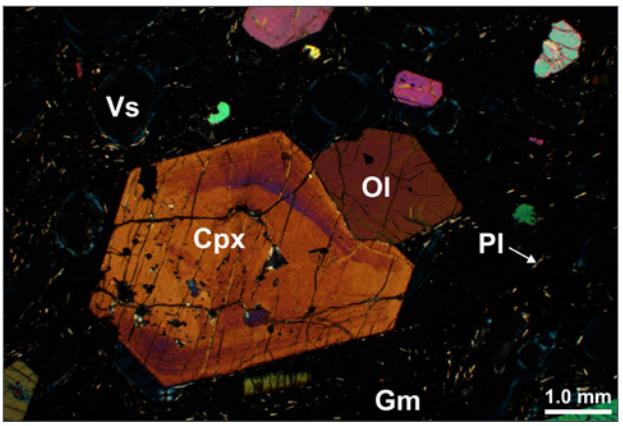
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.8mm; Subhedral to anhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

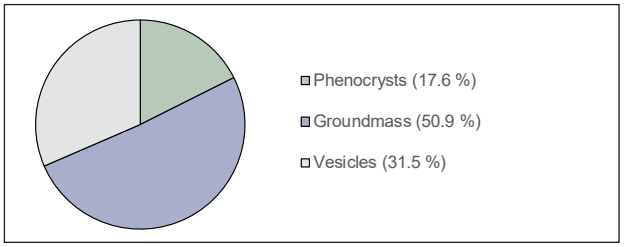
GENERAL VIEW 1 (PPL)



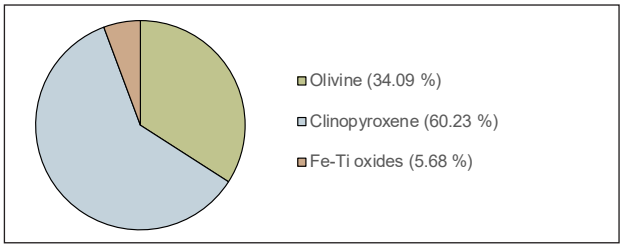
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE

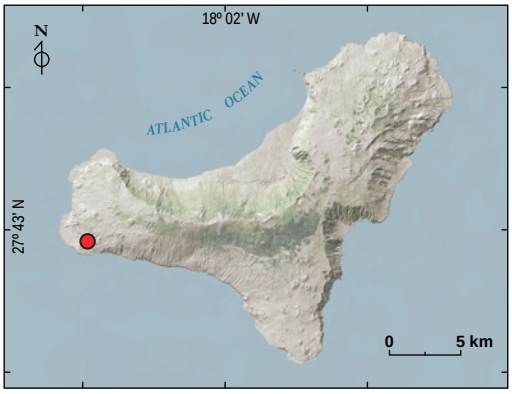


MINERAL ASSEMBLAGE



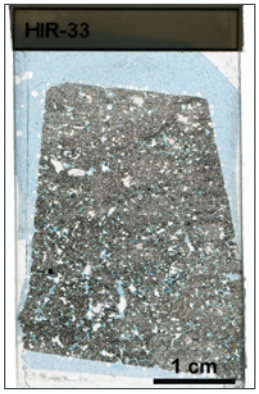
Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-033
Location (Lat/Long WGS84)	27.711716 / -18.140202
Eruption name (rift) / ID	El Estacadero (NW) / 27
Material type	Lava
Outcrop description	Aphanitic spiny pahoehoe lava flow, ≈1m thick, grey in colour, in the inner part of a levee
TAS Classification	Basalt

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with trachytic pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Pl + Ox + Ol + Cpx
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.8mm; Anhedral crystals with slightly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

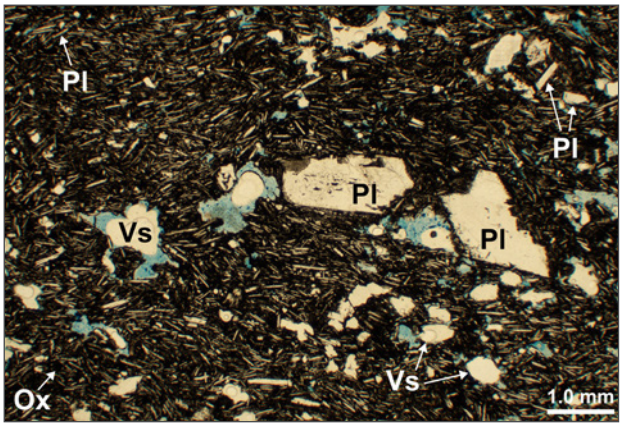
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Subhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.1mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with resorbed cores; Oscillatory zoning.
Mesocrysts: Maximum size of 0.4mm; Euhedral crystals and glomerocrysts; Oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass, definig a trachytic texture.

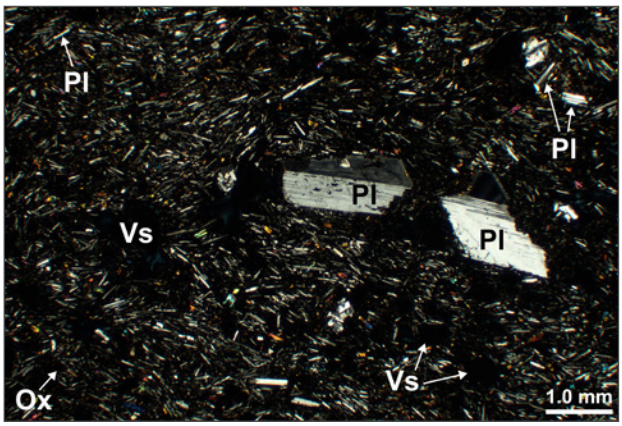
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.3mm; Subhedral crystals, some of them with strongly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

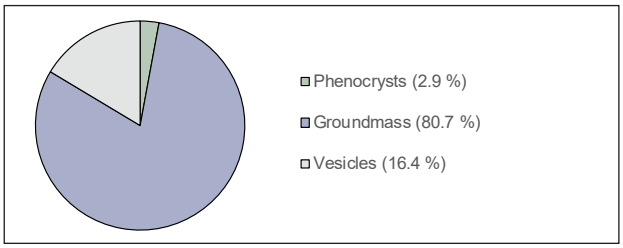
GENERAL VIEW 1 (PPL)



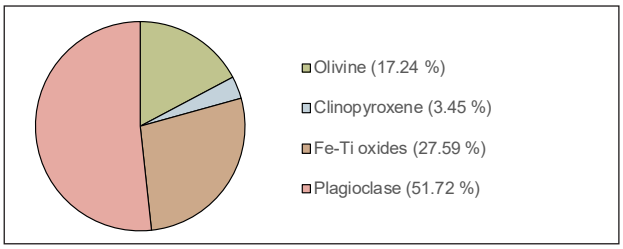
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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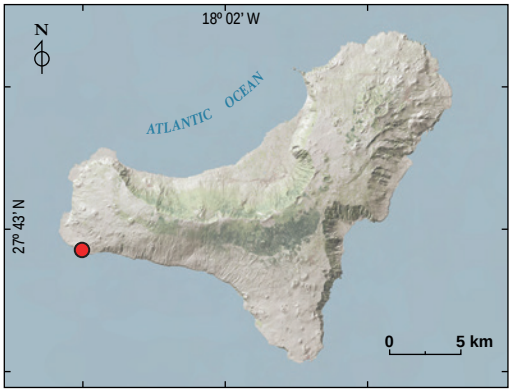
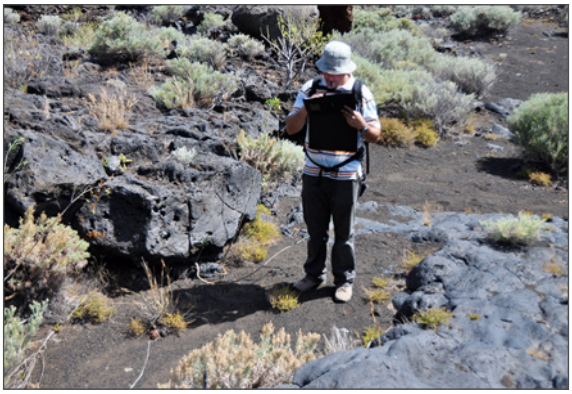
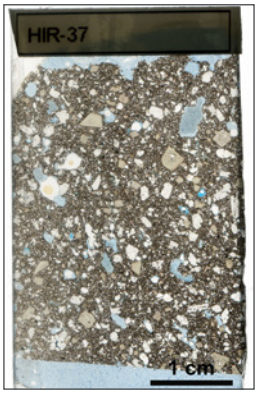
LOCATION MAP



OUTCROP



THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-037
Location (Lat/Long WGS84)	27.705484 / -18.144169
Eruption name (rift) / ID	Montaña de Orchilla (NW) / 41
Material type	Lava
Outcrop description	Porphyritic, highly vesiculated pahoehoe lava flow, black in colour, ≈1m in thickness
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox + (Pl)
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.6mm; Subhedral crystals, some of them with slightly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

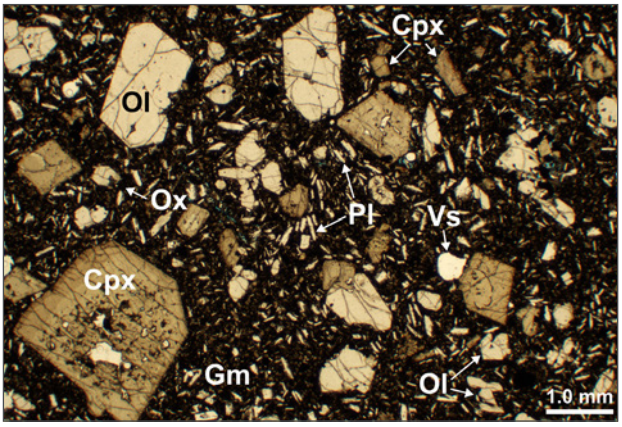
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3mm; Euhedral crystals with resorbed cores; Complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Normal to reverse zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

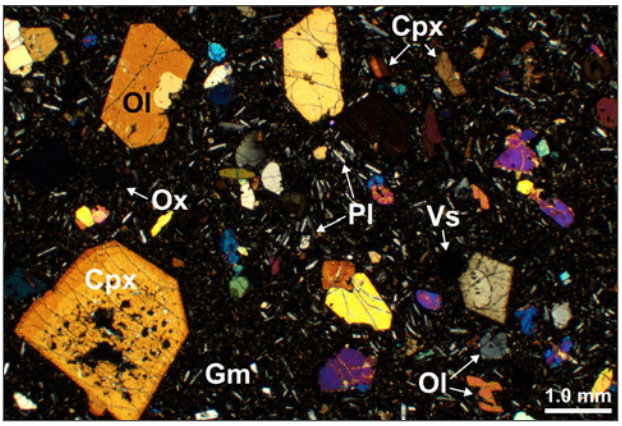
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

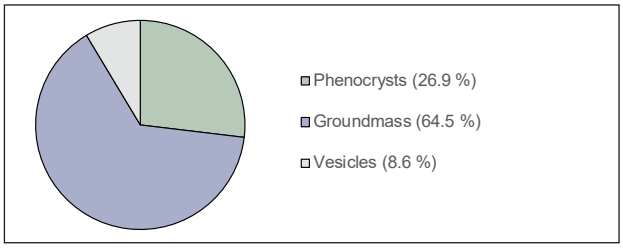
GENERAL VIEW 1 (PPL)



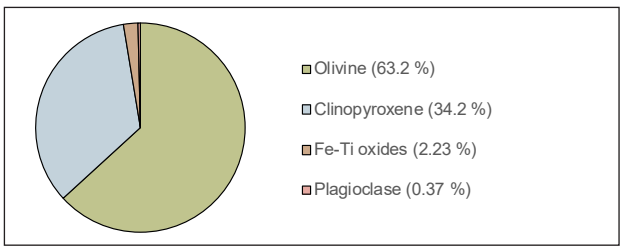
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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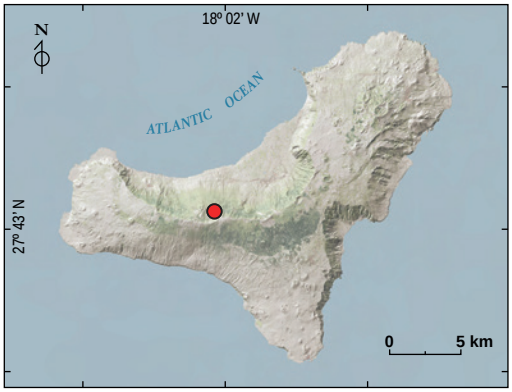
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-038
Location (Lat/Long WGS84)	27.732353 / -18.050421
Eruption name (rift) / ID	Tanganasoga (NW) / 15
Material type	Lava
Outcrop description	Aphanitic, low vesiculated, thick (≈5m) a'a lava flow, grey in colour
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ox + Ol + (Pl)
Groundmass assemblage	Ox + Pl + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.9mm; Subhedral to anhedral crystals; Minor Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

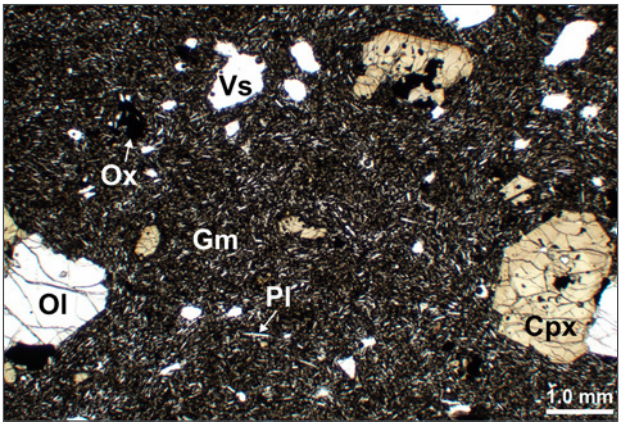
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.8mm; Euhedral crystals and minor glomerocrysts; Some of them with slightly resorbed cores; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Normal to reverse and sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

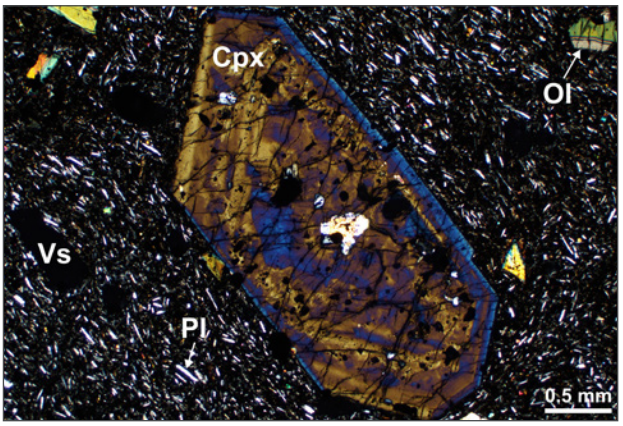
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.12mm; Subhedral to anhedral crystals, some of them with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Subhedral to anhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

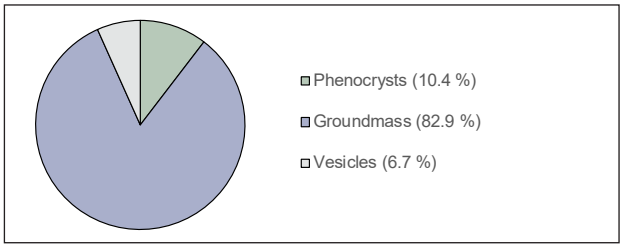
GENERAL VIEW (PPL)



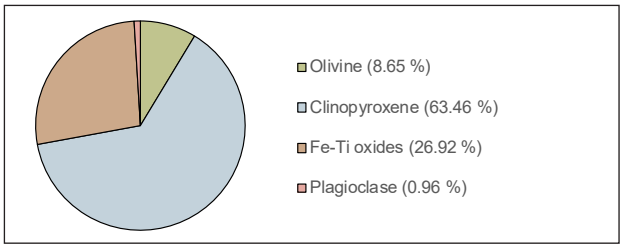
DETAILED VIEW (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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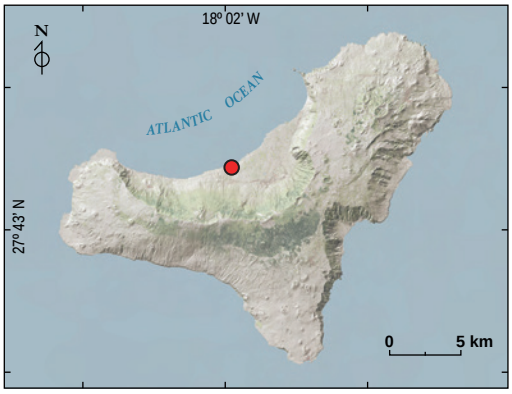
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-040
Location (Lat/Long WGS84)	27.760545 / -18.039202
Eruption name (rift) / ID	Charco Azul (NW) / 31
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, vesiculated pahoehoe lava flow, ≈1m in thickness
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic (locally trachytic) groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ox + Pl + Ol
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.11mm; Subhedral to anhedral crystals and glomerocrysts; Some of them with slightly to strongly embayed rims; Minor Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

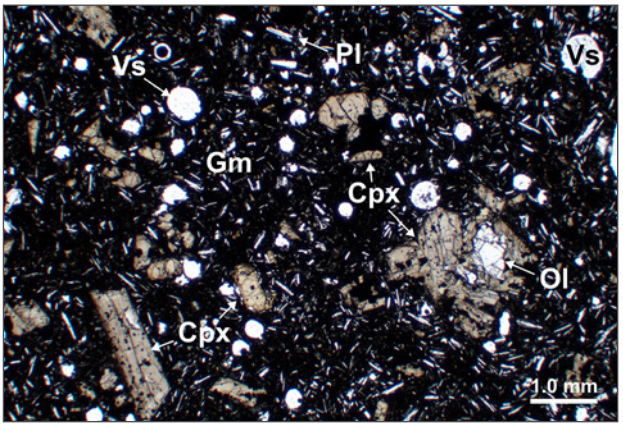
Clinopyroxene
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.16mm; Euhedral to subhedral crystals and glomerocrysts; Sector and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.98mm; Subhedral crystals; Minor Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

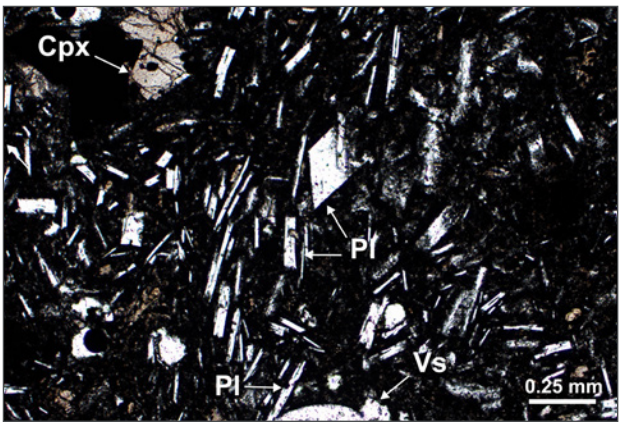
Fe-Ti oxides
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size 1.57mm; Subhedral to anhedral crystals, some of them with slightly to strongly embayed rims.
Mesocrysts: Maximum size 0.5mm; Euhedral to anhedral crystals; Some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

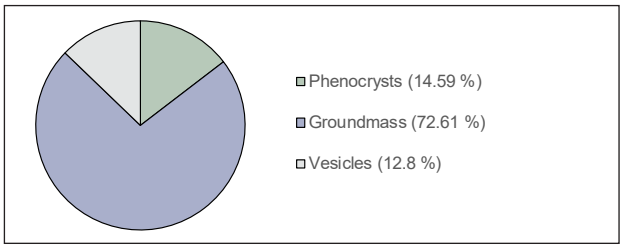
GENERAL VIEW (PPL)



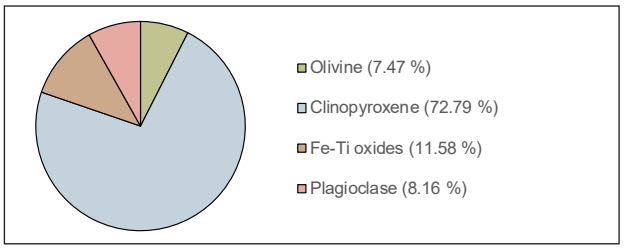
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

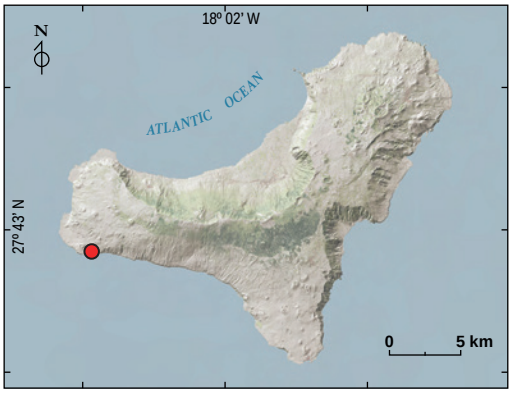


MINERAL ASSEMBLAGE

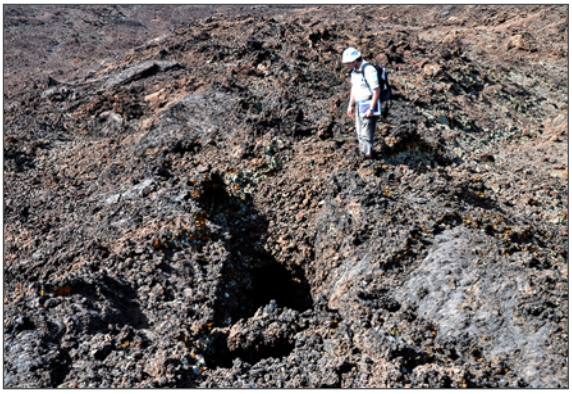


Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-041
Location (Lat/Long WGS84)	27.704619 / -18.136563
Eruption name (rift) / ID	Montañita Negra (NW) / 4
Material type	Lava
Outcrop description	Porphyritic, vesiculated spiny pahoehoe lava flow, ≈2m thick, dark grey in colour. Sample in the inner part of the lava tube
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Ox + Pl + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.0mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

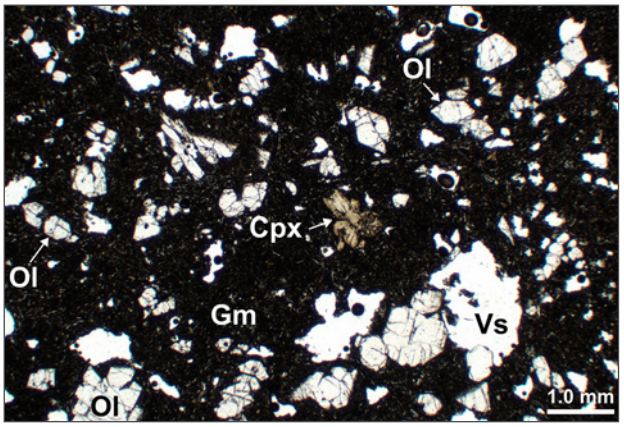
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals with resorbed cores and glomerocrysts; Normal to reverse zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

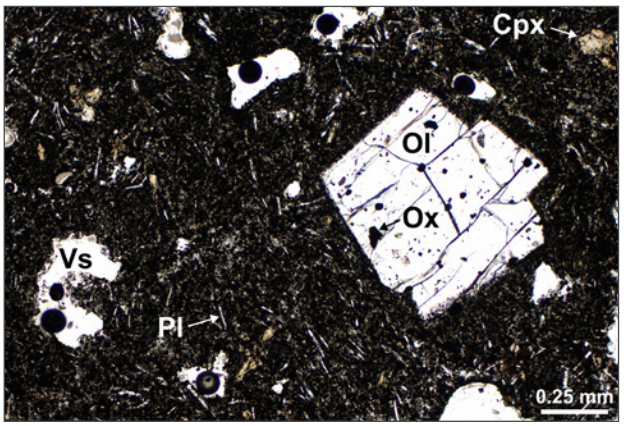
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals; Some of them with strongly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

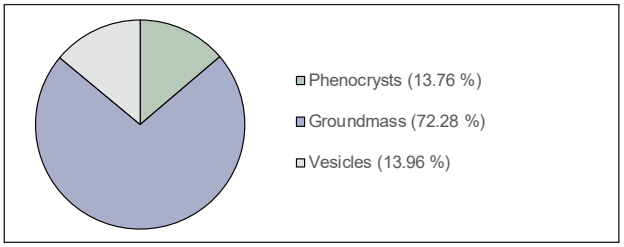
GENERAL VIEW (PPL)



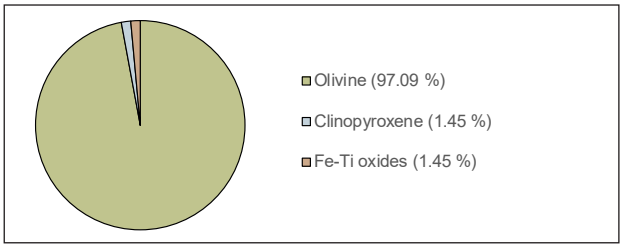
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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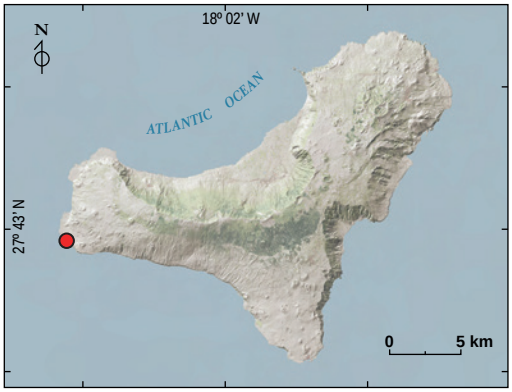
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-044
Location (Lat/Long WGS84)	27.711289 / -18.155393
Eruption name (rift) / ID	La Hoya del Faro (NW) / 29
Material type	Lava
Outcrop description	Aphanitic, black in colour, moderately vesiculated with non-filled large vesicles, a'a lava flow of ≈1.5m thickness
TAS Classification	Basalt

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Pl + Ol + Ox
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.9mm; Euhedral to subhedral crystals; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

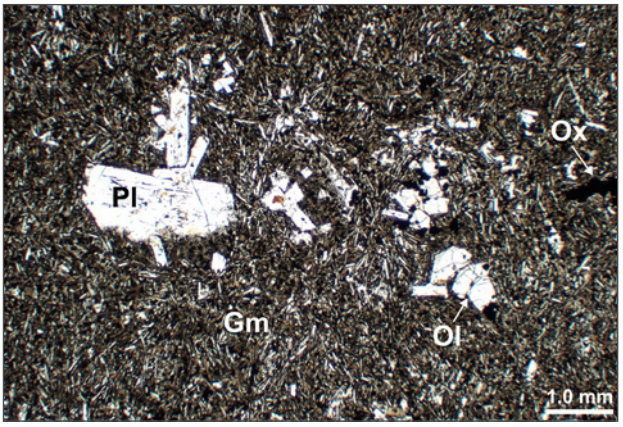
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 4mm; Euhedral to subhedral crystals with strongly resorbed cores; Oscillatory and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Oscillatory zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

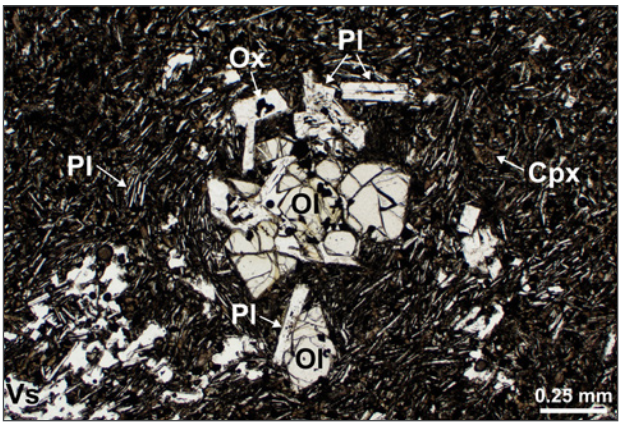
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.3mm; Anhedral crystals with skeletal texture.
Mesocrysts: Maximum size of 0.3mm; Subhedral to anhedral crystals and glomerocrysts; Some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

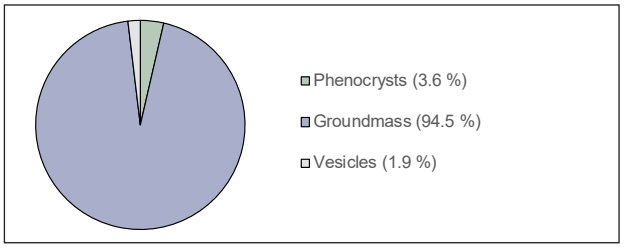
GENERAL VIEW (PPL)



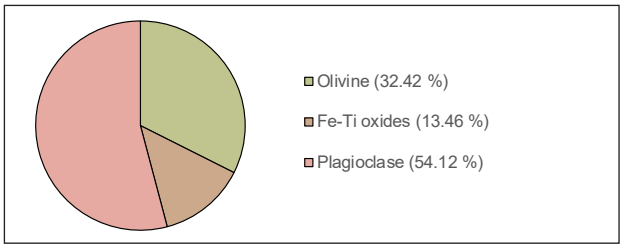
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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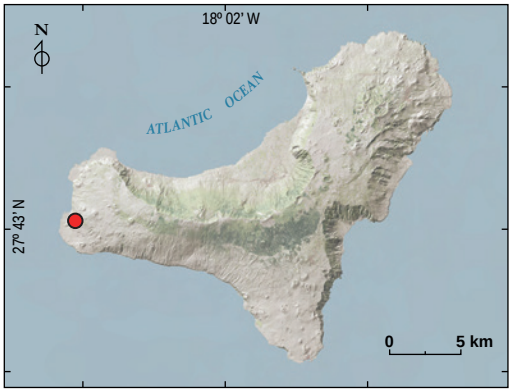
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-047
Location (Lat/Long WGS84)	27.723861 / -18.149957
Eruption name (rift) / ID	Montaña de las Calcosas (NW) / 28
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, moderately vesiculated, a'a lava flow that formed a lava channel in the crater's interior of its emission volcanic cone
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Pl + Ox + Ol

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2mm; Subhedral to anhedral crystals with slightly embayed rims, some of them with skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Subhedral to anhedral crystals and minor glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

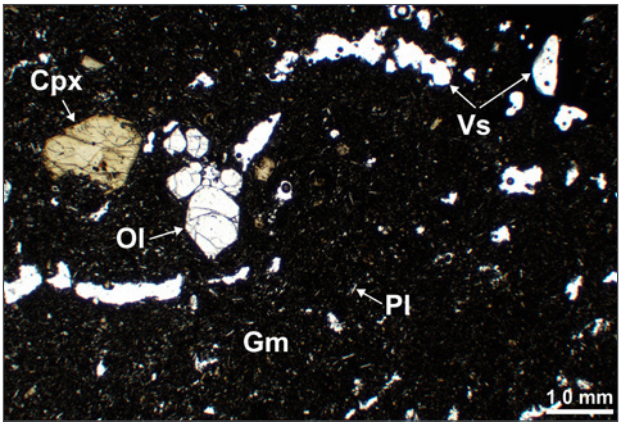
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.6mm; Subhedral crystals; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

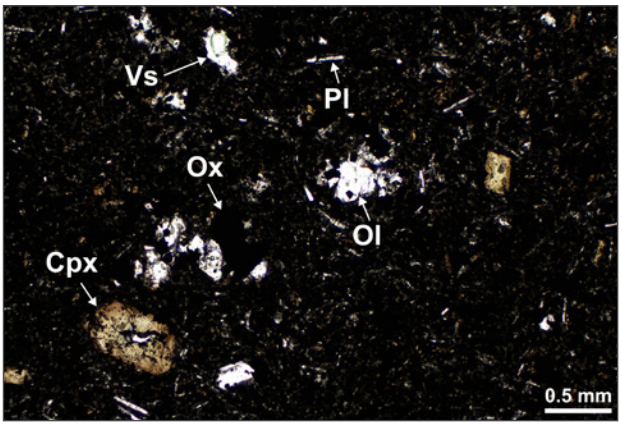
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.2mm; Subhedral crystals with strongly embayed rims.
Mesocrysts: Maximum size of 0.3mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

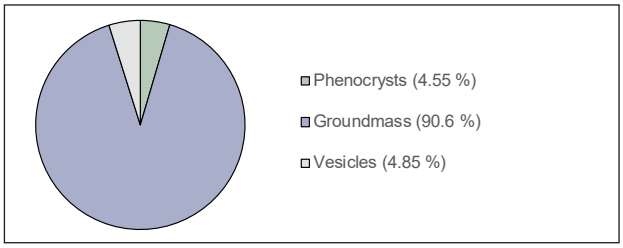
GENERAL VIEW (PPL)



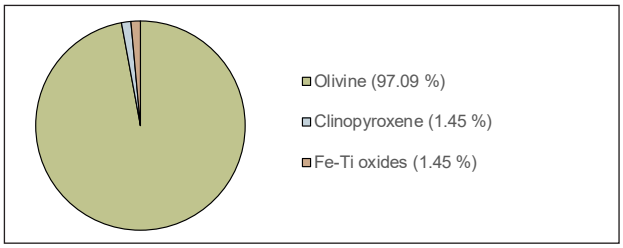
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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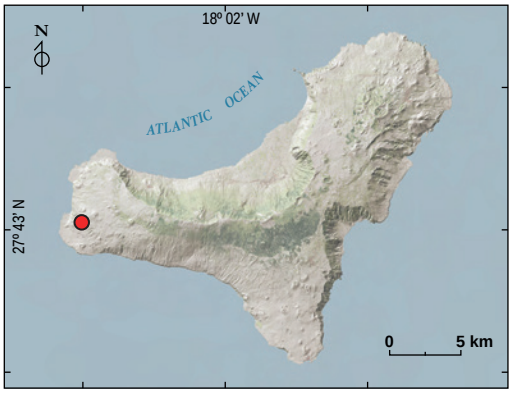
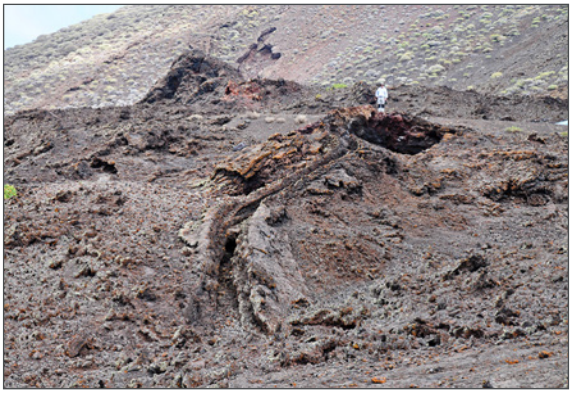
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-048
Location (Lat/Long WGS84)	27.723436 / -18.144836
Eruption name (rift) / ID	El Meridiano (NW) / 16
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, moderately vesiculated, spiny pahoehoe along a lava tube close to its emission centre *(hornito)*
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.7mm; Euhedral to subhedral crystals, the latter with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, the latter with slightly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

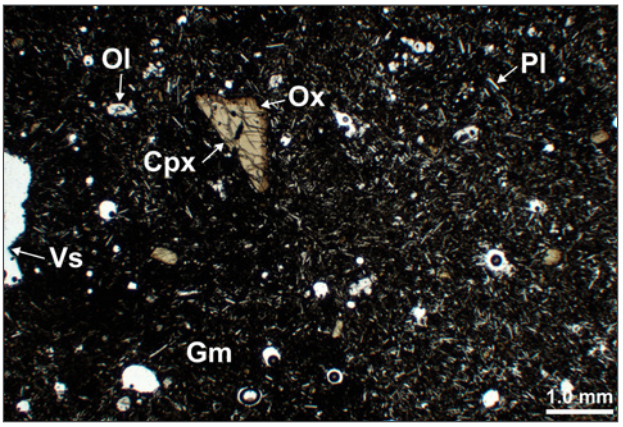
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.46mm; Euhedral crystals; Normal to reverse zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals; Normal to reverse zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

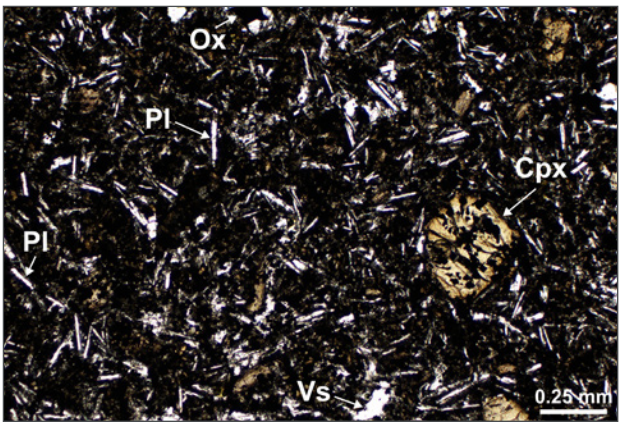
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Subhedral to anhedral crystals with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

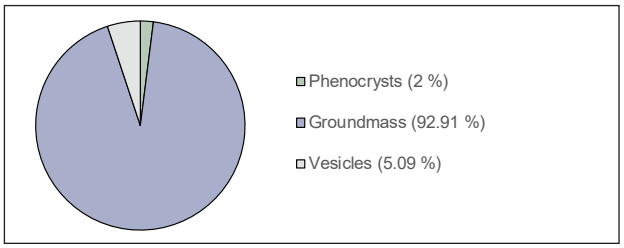
GENERAL VIEW (PPL)



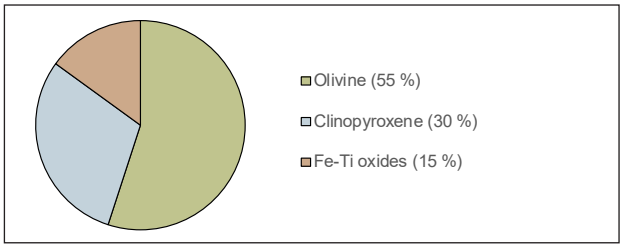
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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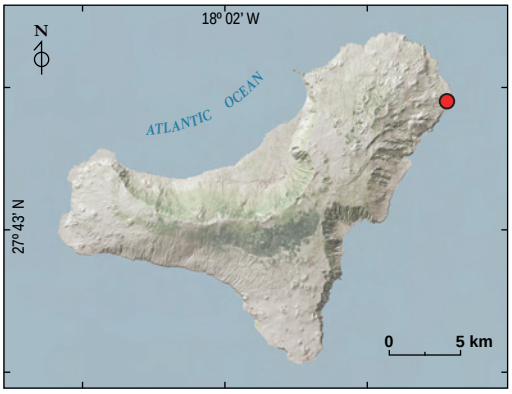
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-050
Location (Lat/Long WGS84)	27.805701 / -17.886664
Eruption name (rift) / ID	La Caleta (NE) / 8
Material type	Lava
Outcrop description	Porphyritic, highly vesiculated pahoehoe lava flow, dark grey in colour, ≈1m thick in a sequence of several pahoehoe flows with a thickness >4m
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Pl + Ox + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.4mm; Subhedral to anhedral crystals, some of them with slightly to strongly embayed rims and minor skeletal texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly to strongly embayed rims and minor skeletal texture.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

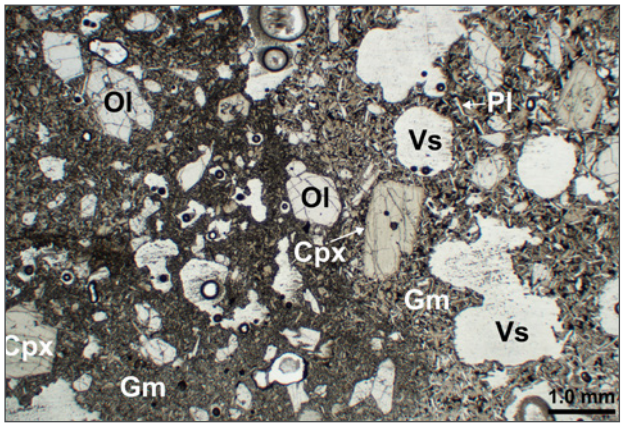
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 5.0mm; Euhedral crystals and minor glomerocrysts; Normal to reverse, sector and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

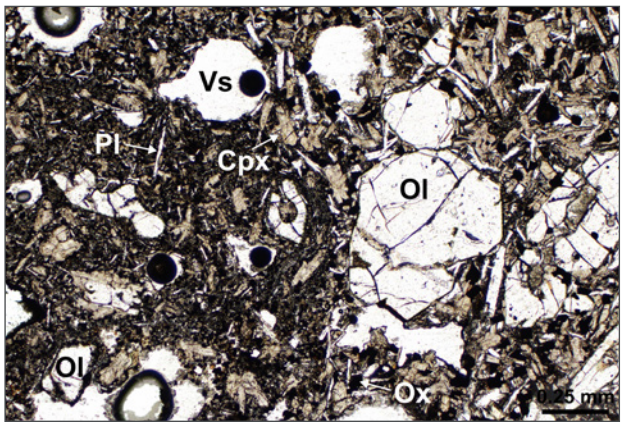
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

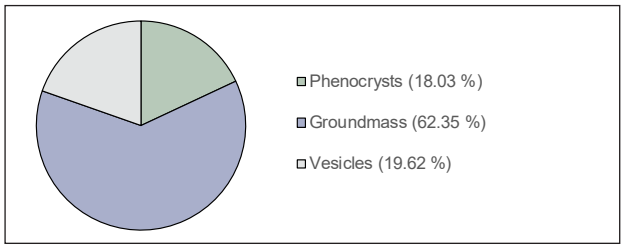
GENERAL VIEW (PPL)



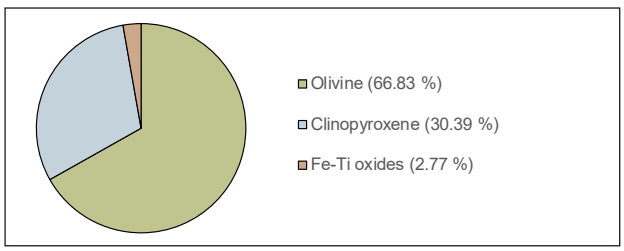
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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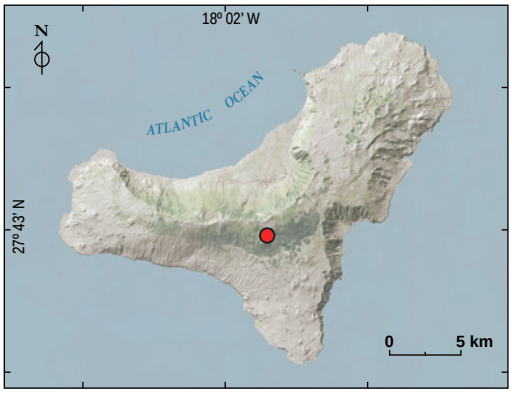
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-052
Location (Lat/Long WGS84)	27.717531 / -18.012616
Eruption name (rift) / ID	Montaña del Cepón (S) / 12
Material type	Lava
Outcrop description	Porphyritic, low vesicularity, thick (≈3m) a'a lava flow in a lava channel
TAS Classification	Picrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Ox + Cpx + (Ol) + (Pl)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.4mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with strongly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

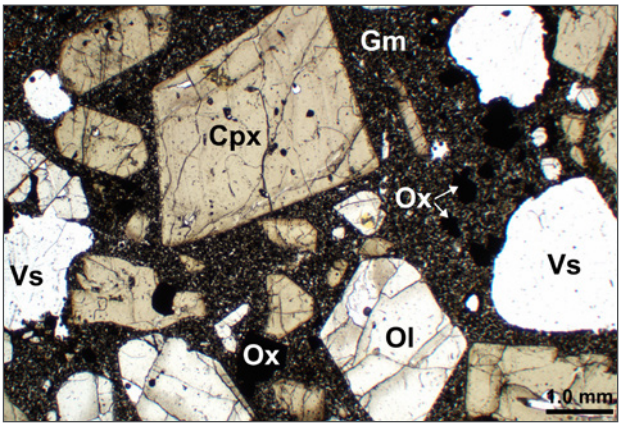
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 6.7mm; Euhedral to subhedral crystals, the latter with strongly embayed rims; Some of them with resorbed cores; Normal to reverse and complex zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

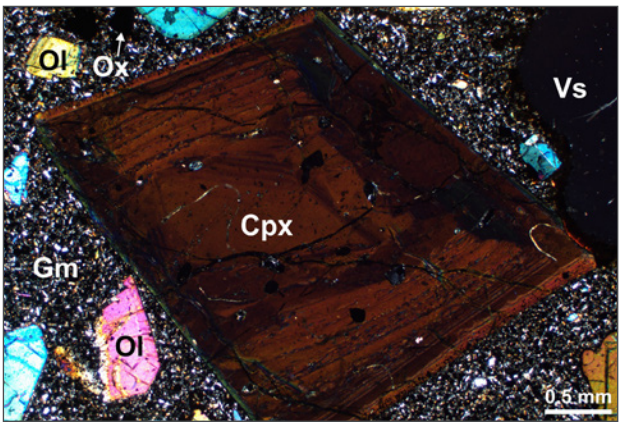
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.1mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

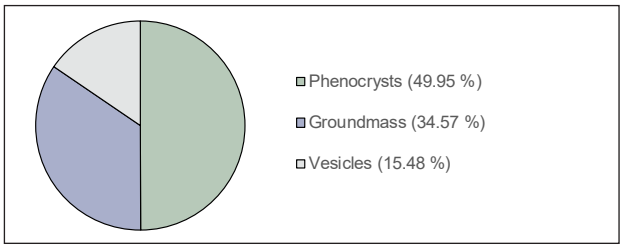
GENERAL VIEW (PPL)



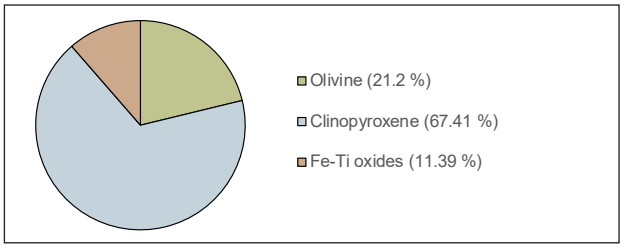
DETAILED VIEW (XPL)



COMPONENT ASSEMBLAGE

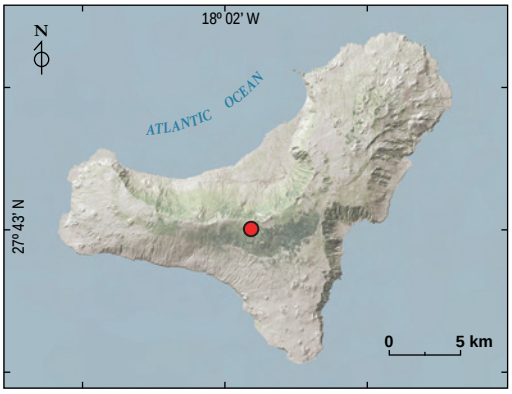


MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-054
Location (Lat/Long WGS84)	27.721981 / -18.024041
Eruption name (rift) / ID	Morro de las Sanjoras (S) / 19
Material type	Lava
Outcrop description	Aphanitic, massive dyke, dark grey in colour, ≈0.5m of thickness
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox + (Ol)

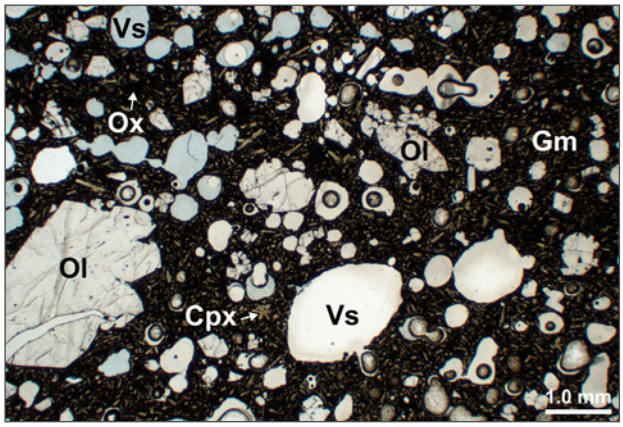
Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.2mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.34mm; Euhedral crystals forming glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

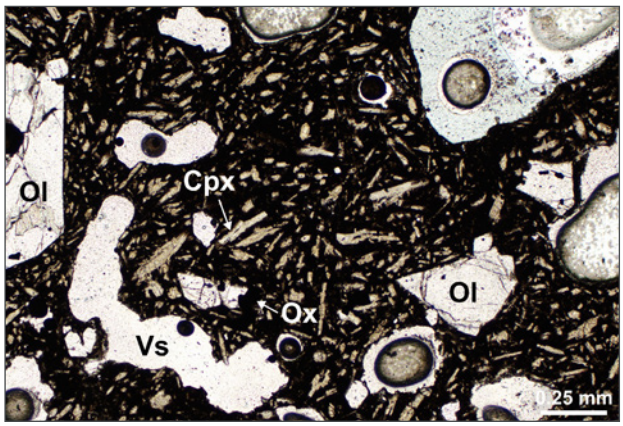
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.3mm; Minor anhedral crystals with slightly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

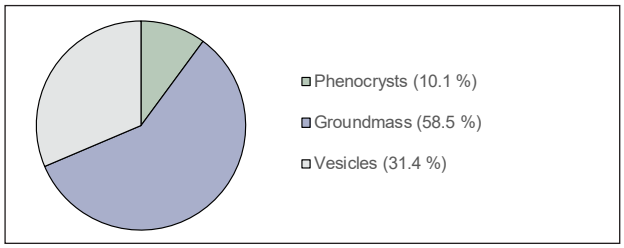
GENERAL VIEW (PPL)



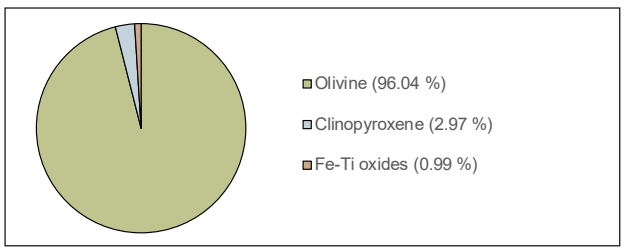
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

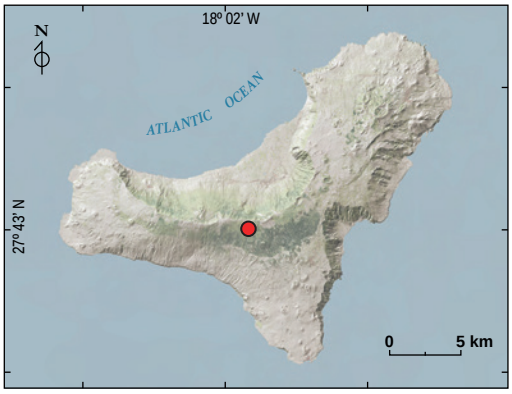


MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-056
Location (Lat/Long WGS84)	27.722050 / -18.025867
Eruption name (rift) / ID	El Brezal (S) / 17
Material type	Lava
Outcrop description	Aphanitic, low vesicularity, grey in colour, 1-2m thick, a'a lava flow
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox

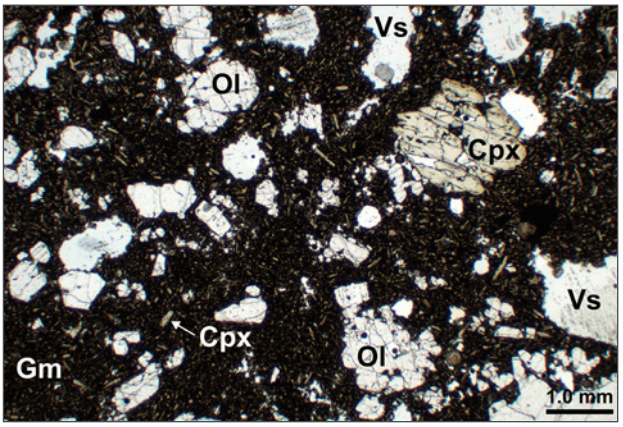
Olivine
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 2.4mm; Euhedral to anhedral crystals, some of them with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.5mm; Subhedral to anhedral crystals with slightly to strongly embayed rims; Some of them with resorbed cores; Normal to reverse zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals and minor glomerocrysts; Normal to reverse and sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

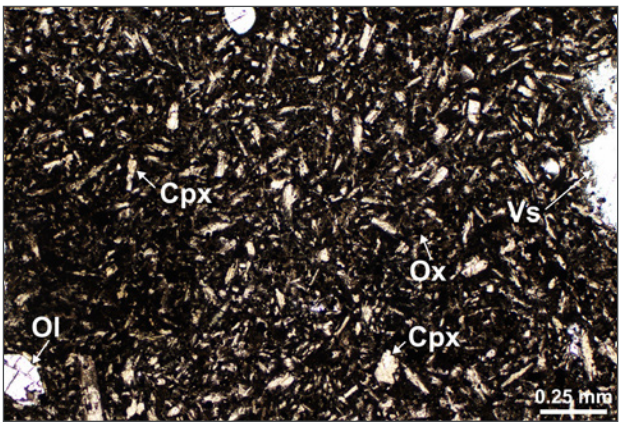
Fe-Ti oxides
Ocurrs as macrocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.6mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

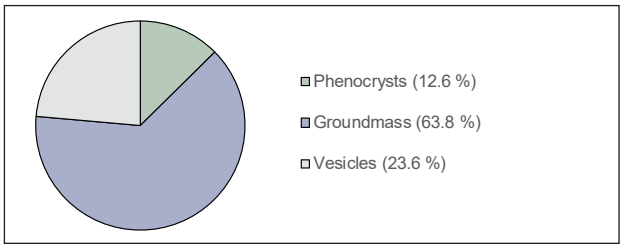
GENERAL VIEW (PPL)



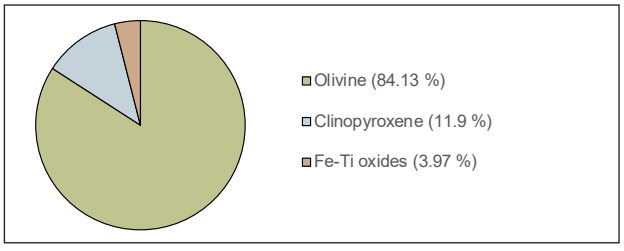
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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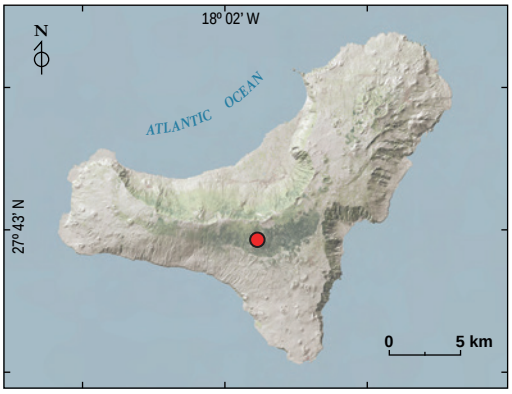
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-057
Location (Lat/Long WGS84)	27.715137 / -18.019382
Eruption name (rift) / ID	Montañita del Guanche de Abajo (S) / 14
Material type	Lava
Outcrop description	Aphanitic, low vesicularity, grey in colour, 2-3m thick, a'a lava flow
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox

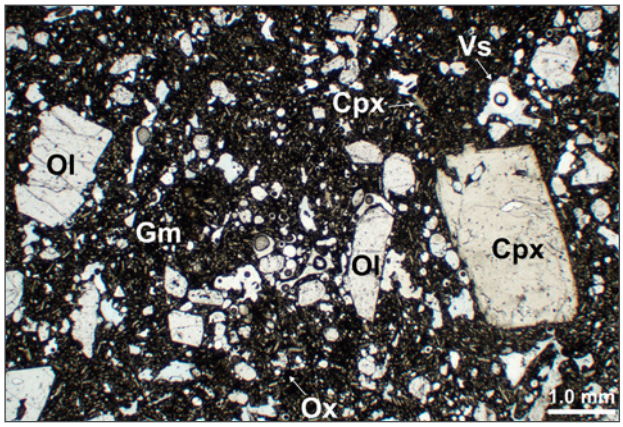
Olivine
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 2.5mm; Euhedral to subhedral crystals, some of the latter with strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals, some of them with slightly to strongly embayed rims.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.3mm; Euhedral to subhedral crystals, some of the latter with resorbed cores; Normal to reverse and complex zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and minor glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

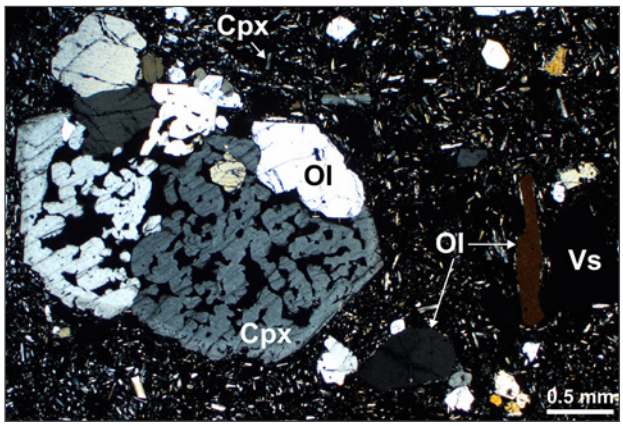
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Minor subhedral crystals with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

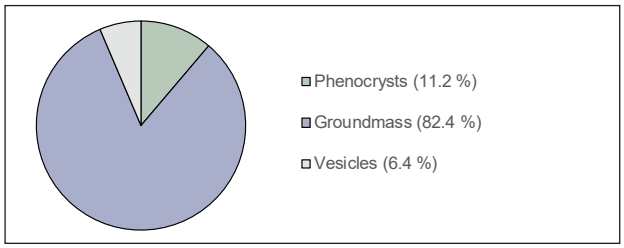
GENERAL VIEW (PPL)



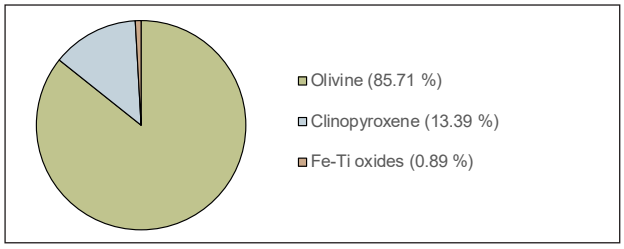
DETAILED VIEW (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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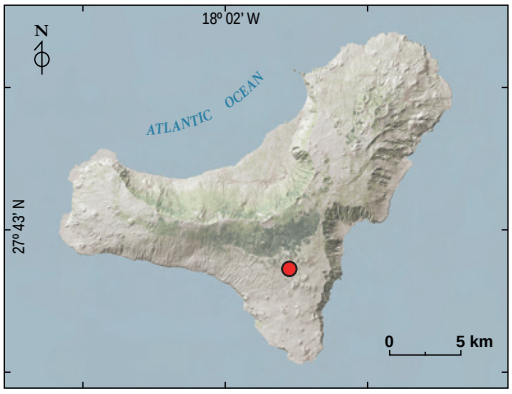
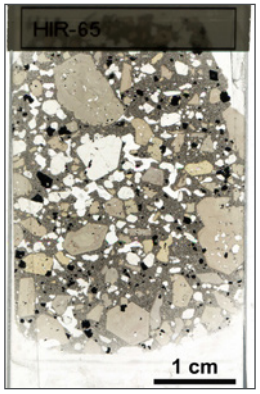
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-065
Location (Lat/Long WGS84)	27.697268 / -17.996184
Eruption name (rift) / ID	Cueva del Mocán (S) / 11
Material type	Lava
Outcrop description	Porphyritic, low vesicularity, thick (≈3m) a'a lava flow in a lateral levee
TAS Classification	Picrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Ox + Pl + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 5.2mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

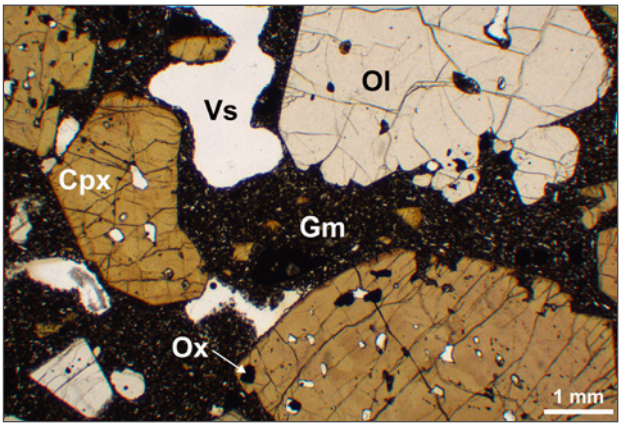
Clinopyroxene
Ocurrs as megacrysts, macrocrysts, mesocrysts and groundmass phase.
Megacrysts: Maximum size of 10.3mm; Euhedral crystals with resorbed cores; Complex zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Macrocrysts: Maximum size of 8.3mm; Euhedral to subhedral crystals, the latter with slightly embayed rims; Most of them with resorbed cores; Normal to reverse, oscillatory and complex zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Normal to reverse zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

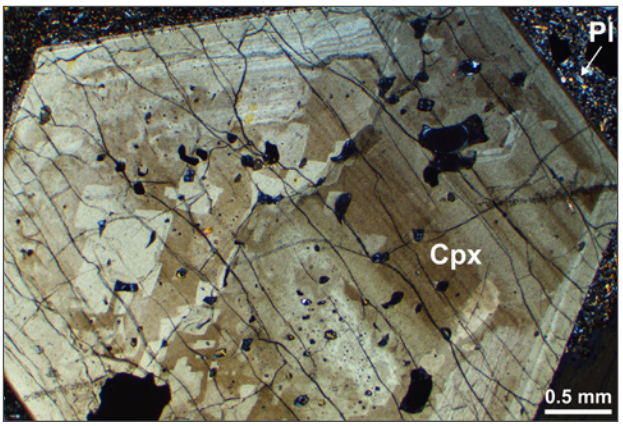
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

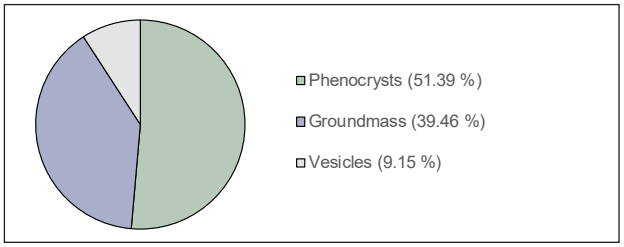
GENERAL VIEW (PPL)



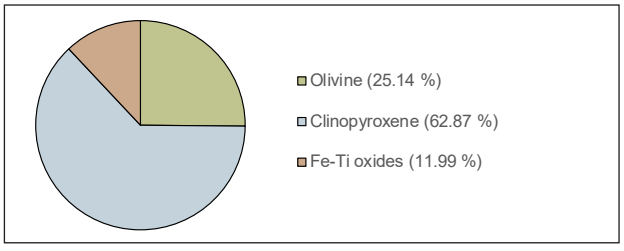
DETAILED VIEW (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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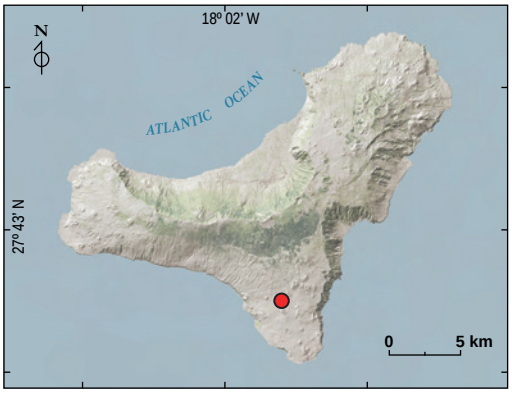
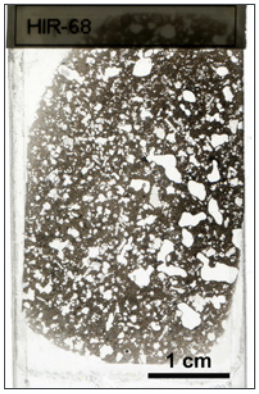
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-068
Location (Lat/Long WGS84)	27.676918 / -18.001173
Eruption name (rift) / ID	El Lajial II-Roque Quemado (S) / 6
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, moderately vesiculated, 2-3m thick, a'a lava flow with many accretion balls
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Ox + (Cpx)
Groundmass assemblage	Cpx + Ox + (Ol)

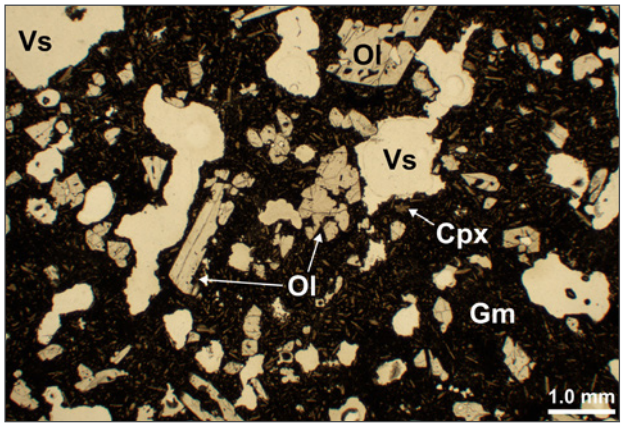
Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.6mm; Euhedral to anhedral crystals, some of them with slightly to strongly embayed rims and skeletal texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Minor euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

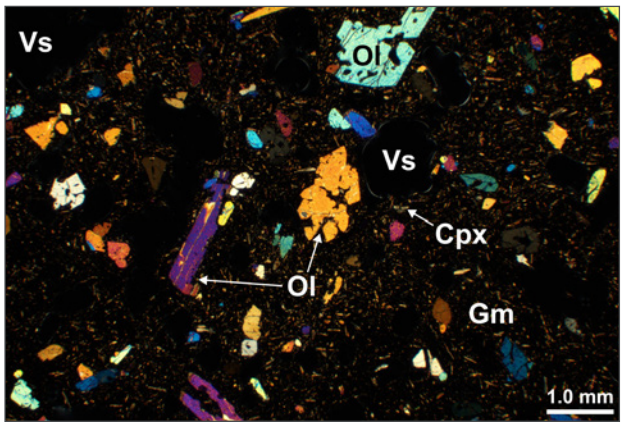
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Subhedral to anhedral crystals.
Groundmass: Size below 0.1mm; Equidimensional euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

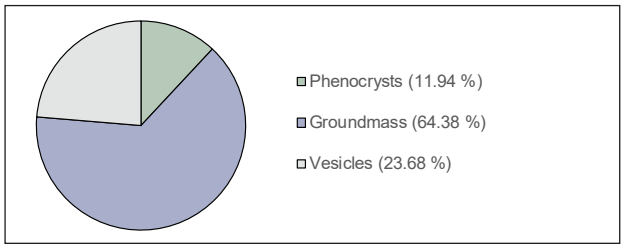
GENERAL VIEW 1 (PPL)



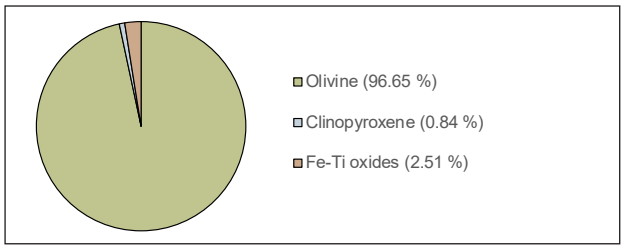
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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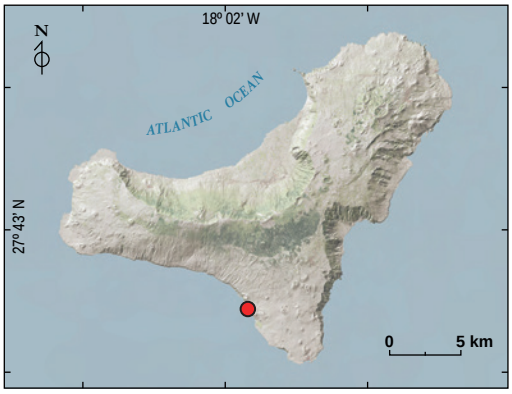
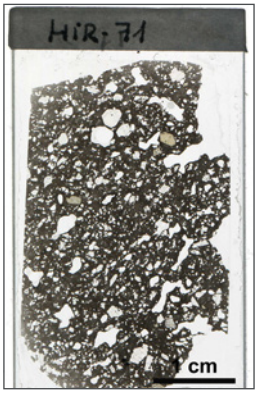
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-071
Location (Lat/Long WGS84)	27.671046 / -18.025215
Eruption name (rift) / ID	Montaña de la Empalizada (S) / 35
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, moderately vesiculated, ≈1m thick, a'a lava flow forming a lava delta
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Ox + Cpx + (Ol)

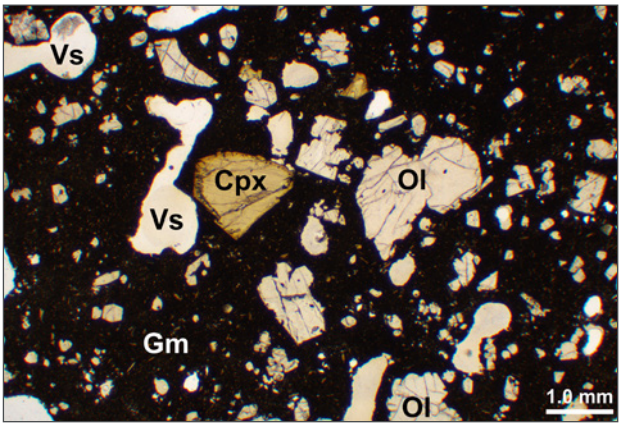
Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.3mm; Euhedral to anhedral crystals, some of them with slightly to strongly embayed rims and minor skeletal texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals and glomerocrysts; Some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.3mm; Euhedral to subhedral crystals; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

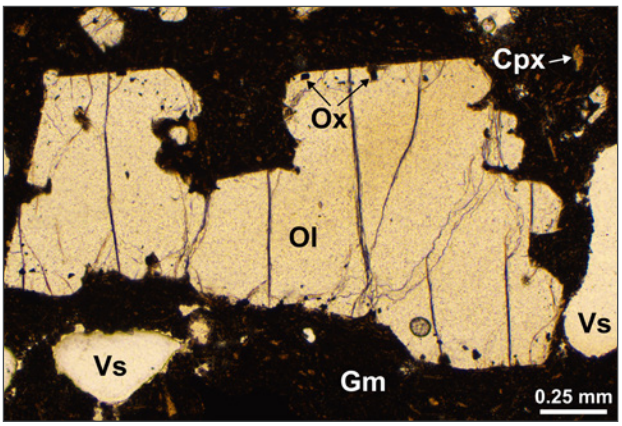
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1mm; Minor subhedral crystals with strongly embayed rims.
Mesocrysts: Maximum size of 0.3mm; Minor subhedral to anhedral crystals, some of them with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

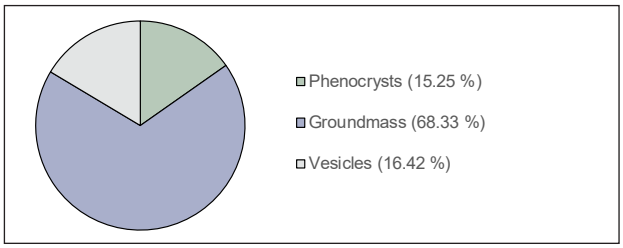
GENERAL VIEW (PPL)



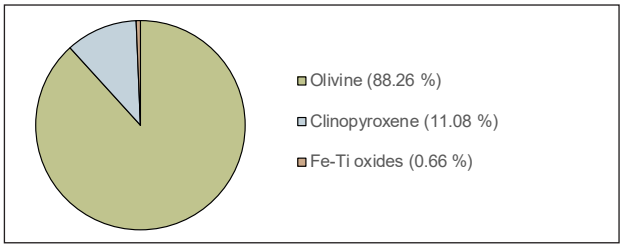
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

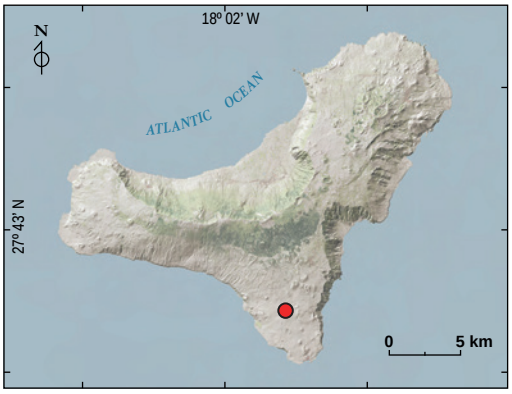


MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-076
Location (Lat/Long WGS84)	27.670865 / -17.998013
Eruption name (rift) / ID	El Lajia III-Cueva Palomas (S) / 6
Material type	Lava
Outcrop description	Aphanitic, vesiculated, dark grey in colour, very thin (≈10-20cm) pahoehoe lava flow forming a >5m thick sequence
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	(Glomero-)Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.0mm; Euhedral to subhedral crystals, the latter with strongly embayed rims and skeletal texture; Some of them forming glomerporphyritic texture with Cpx and Fe-Ti oxides.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them forming glomerporphyritic texture with Cpx and Fe-Ti oxides.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

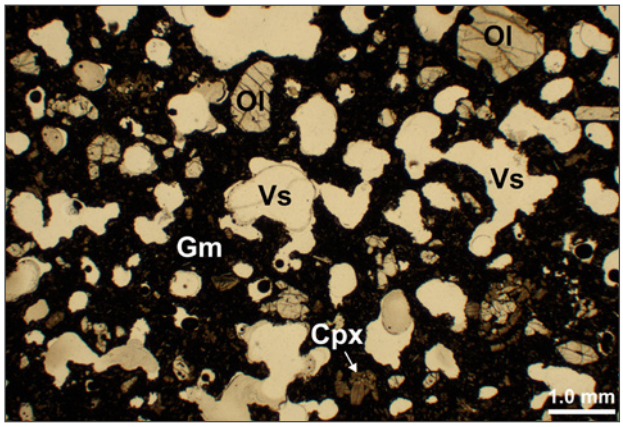
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

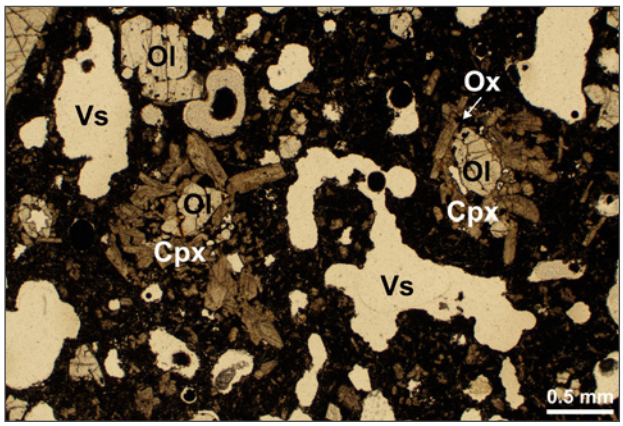
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

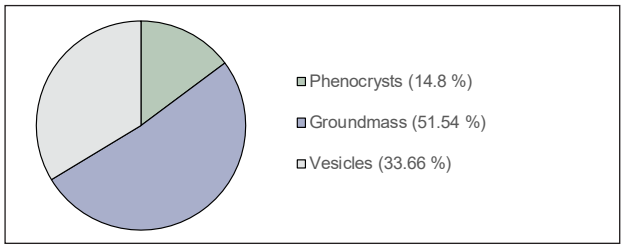
GENERAL VIEW (PPL)



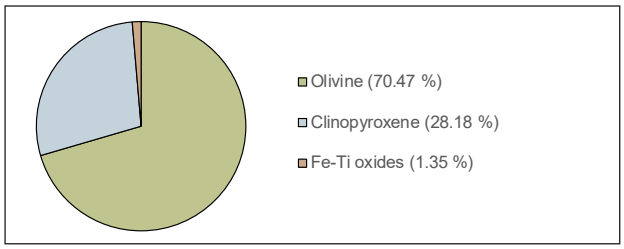
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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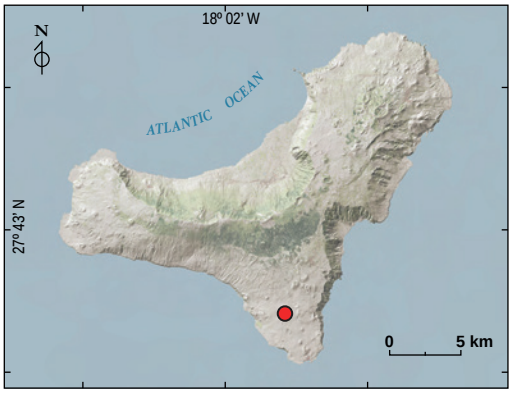
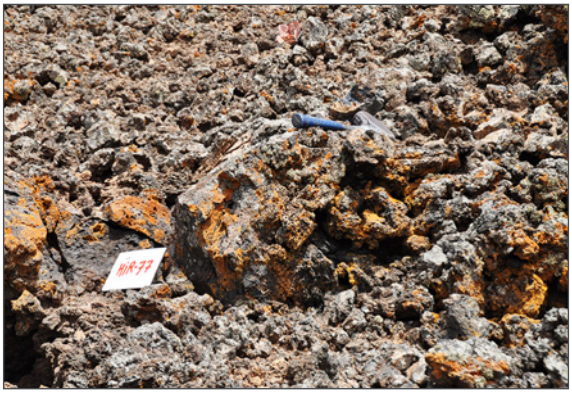
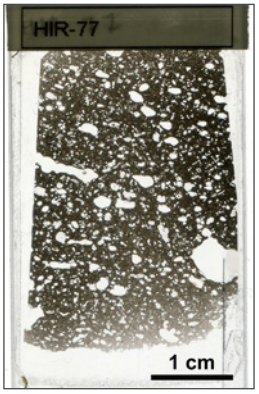
LOCATION MAP



OUTCROP



THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-077
Location (Lat/Long WGS84)	27.668883 / -17.998645
Eruption name (rift) / ID	Lajial XII-Montaña los Júlanes S (S) / 6
Material type	Lava
Outcrop description	Aphanitic, moderately vesiculated, grey in colour, ≈1m thick, a'a lava flow
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox + (Ol) + (Pl)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.4mm; Euhedral to subhedral crystals, some of the latter with slightly embayed rims and skeletal texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly embayed rims
Groundmass: Size below 0.1mm; Minor anhedral crystals in the groundmass.

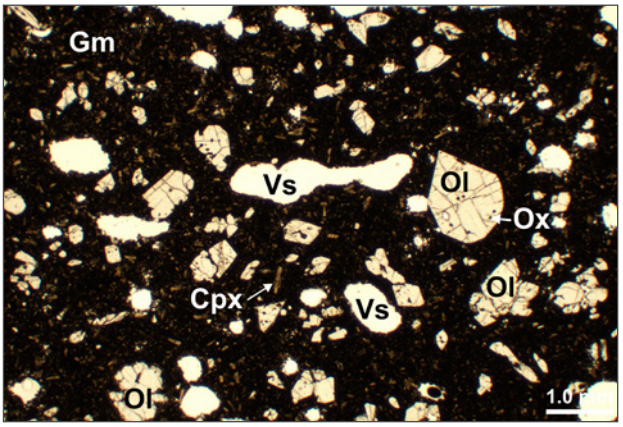
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.7mm; Euhedral crystals; Sector zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor euhedral to anhedral crystals in the groundmass.

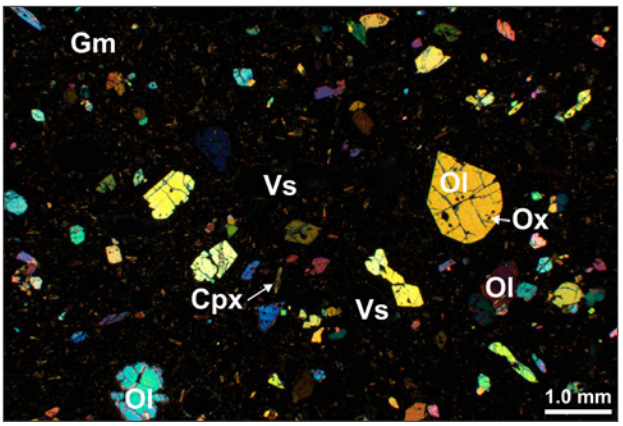
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Minor subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

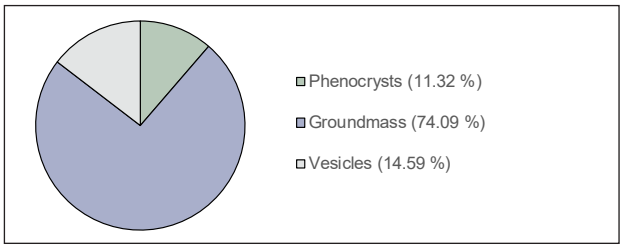
GENERAL VIEW 1 (PPL)



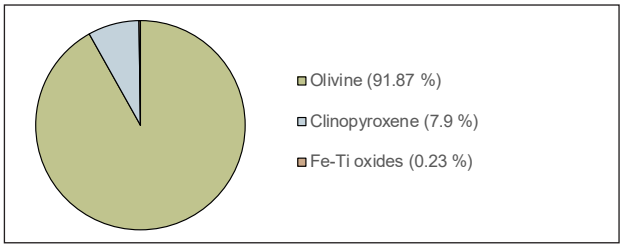
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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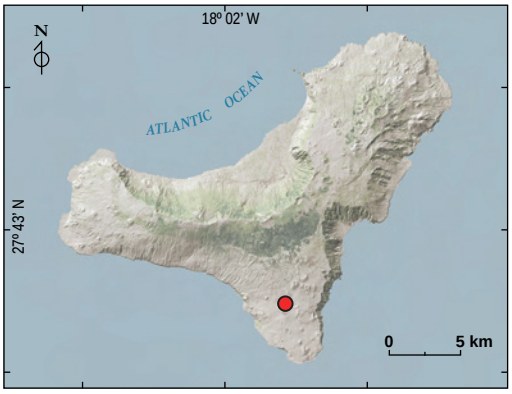
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-082
Location (Lat/Long WGS84)	27.675177 / -17.998322
Eruption name (rift) / ID	El Lajial X-Roque Grande (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated corded (ropy) pahoehoe lava flow, dark grey in colour, ≈1m thickness, very close to its emission centre
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	(Glomero-)Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx
Groundmass assemblage	Cpx + Ox + (Ol)

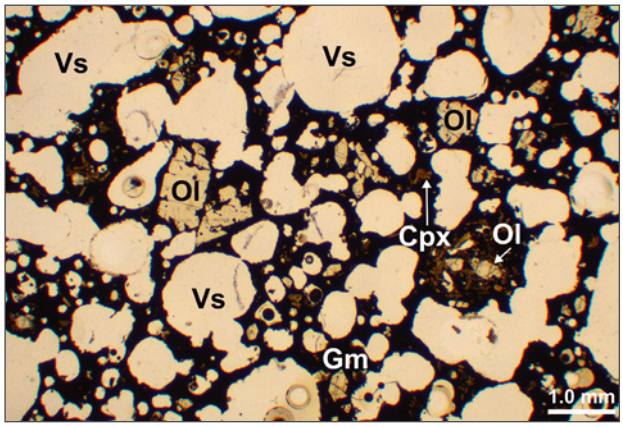
Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.5mm; Euhedral to subhedral crystals, the latter with slightly embayed rims and skeletal texture; Some of them forming glomerporphyritic texture with Cpx and Fe-Ti oxides; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Some of them forming glomerporphyritic texture with Cpx and Fe-Ti oxides; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.7mm; Euhedral crystals; Sector zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

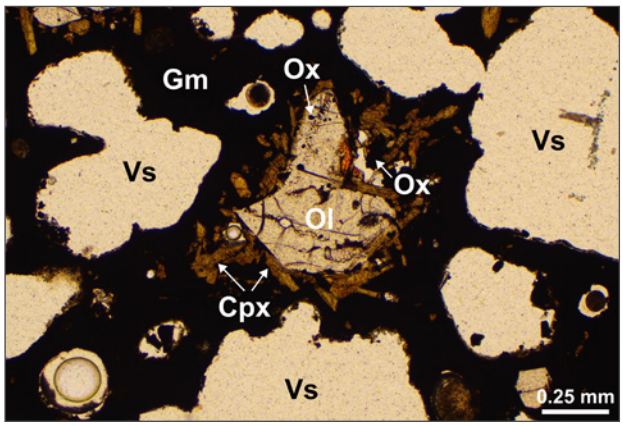
Fe-Ti oxides
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

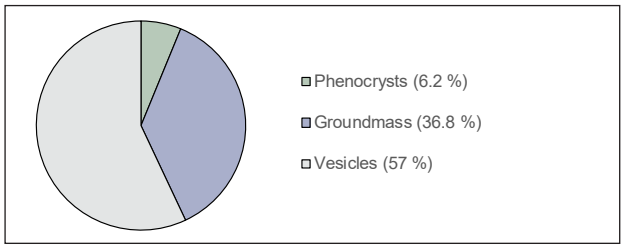
GENERAL VIEW (PPL)



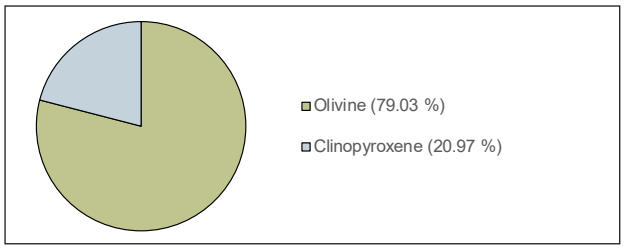
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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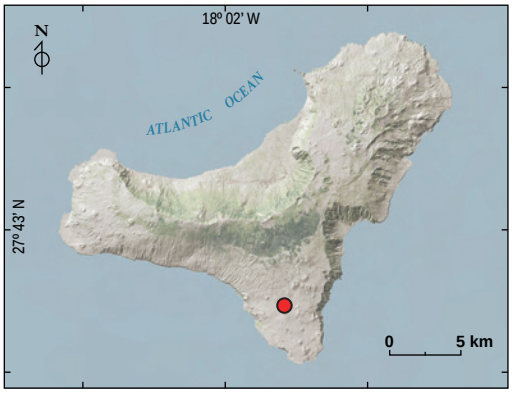
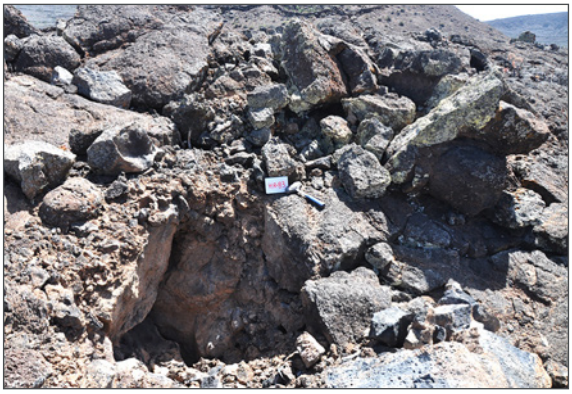
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-083
Location (Lat/Long WGS84)	27.673832 / -17.999200
Eruption name (rift) / ID	El Lajial IX-Roque Chico (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated spiny pahoehoe lava flow, dark grey in colour, >1m thickness. Sample taken along an eruptive fissure
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	(Glomero-)Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + (Ol)

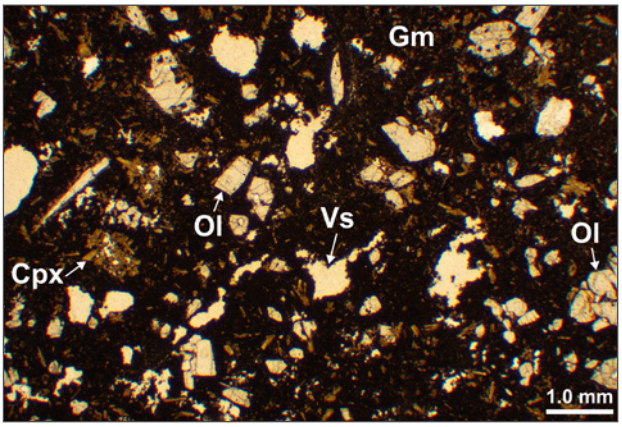
Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.6mm; Euhedral to anhedral crystals; Some of them with slightly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them forming glomerporphyritic texture with Cpx and Fe-Ti oxides; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.6mm; Euhedral crystals and glomerocrysts; Oscillatory zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector and oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

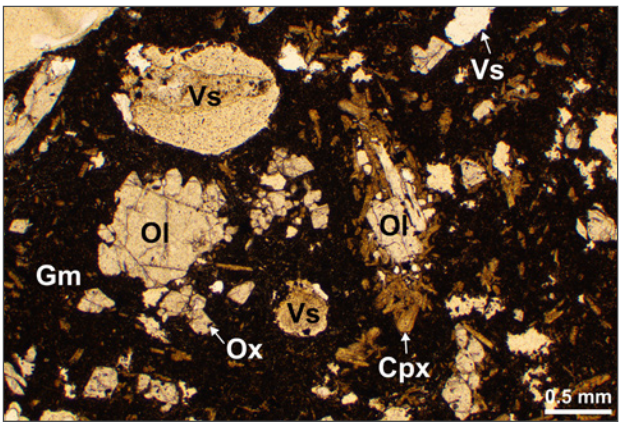
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

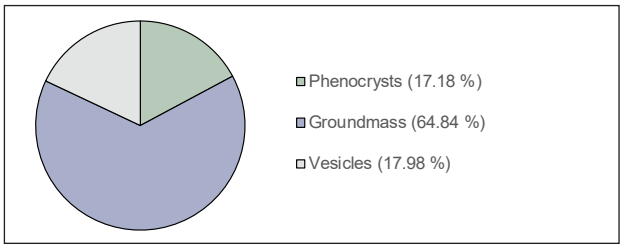
GENERAL VIEW (PPL)



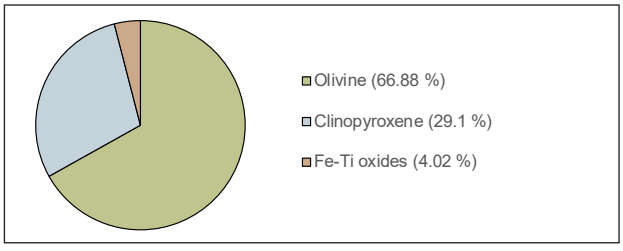
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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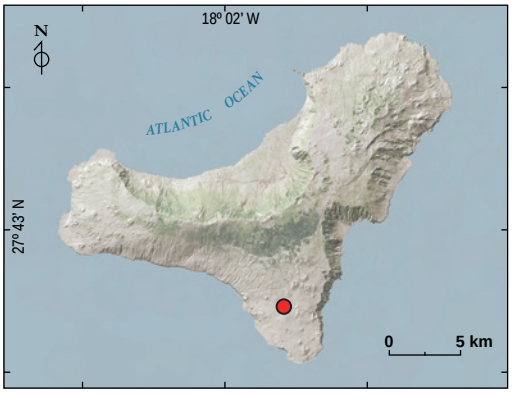
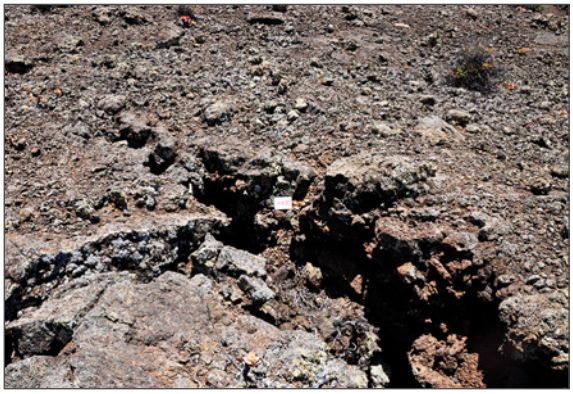
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-085
Location (Lat/Long WGS84)	27.673515 / -17.999239
Eruption name (rift) / ID	El Lajial XIV-Montaña los Júlanes N (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated spiny pahoehoe lava flow, dark grey in colour, >1m thick. Sample taken along an eruptive fissure
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.7mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly to strongly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with strongly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

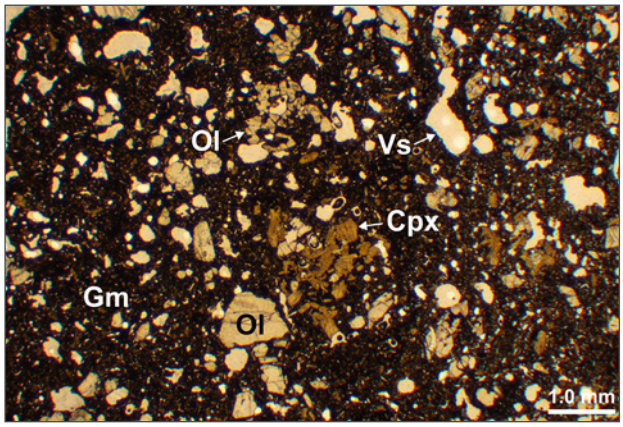
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Sector and oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

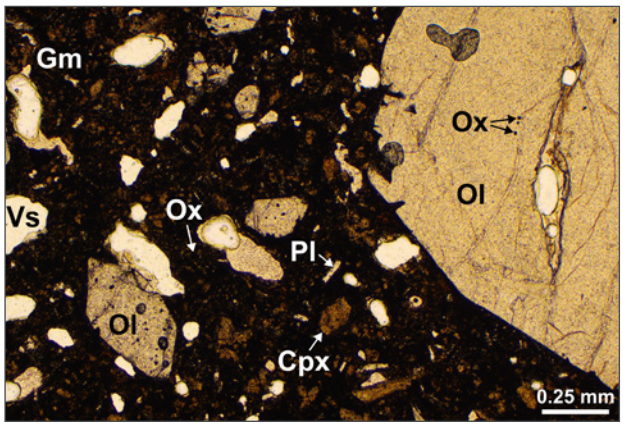
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

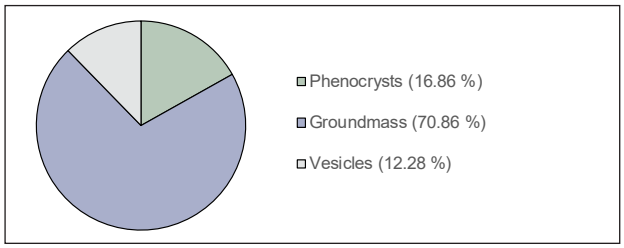
GENERAL VIEW (PPL)



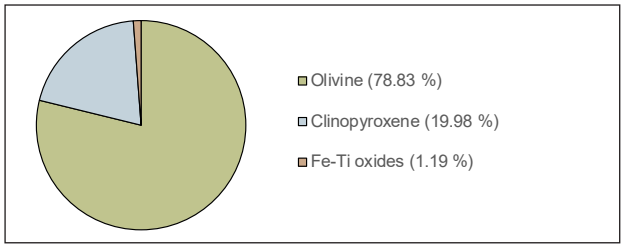
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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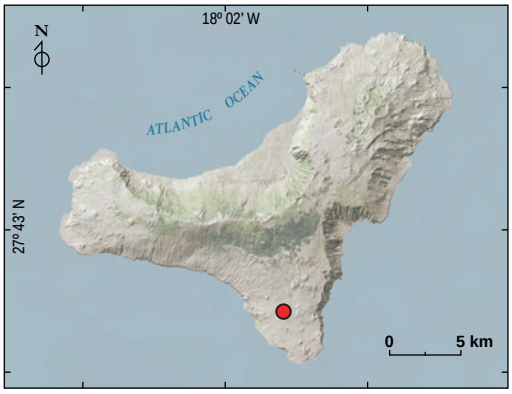
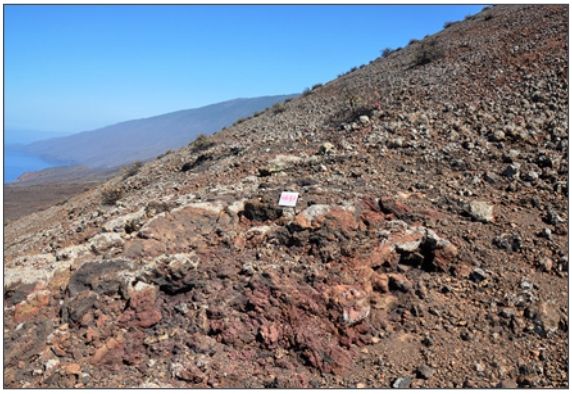
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-087
Location (Lat/Long WGS84)	27.670242 / -17.999594
Eruption name (rift) / ID	El Lajial XI-Montaña los Júlanes SW2 (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated spiny pahoehoe lava flow, grey in colour, <1m thick, flowing from the SSW flank of the Montaña Lajura cone
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Ox
Groundmass assemblage	Cpx + Ox + (Pl)

Olivine
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 2mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims; Fe-Ti oxides inclusions.

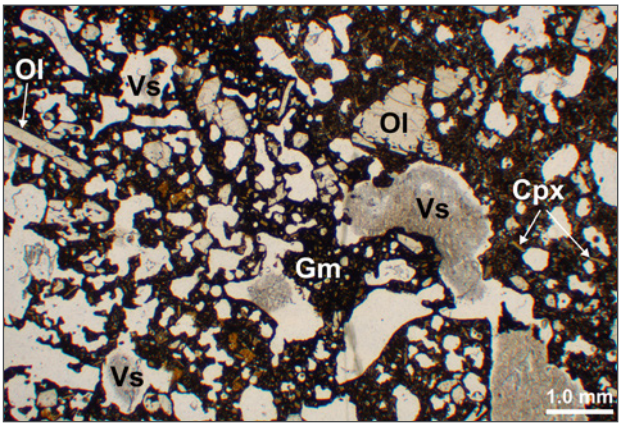
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals and glomerocrysts in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the groundmass.

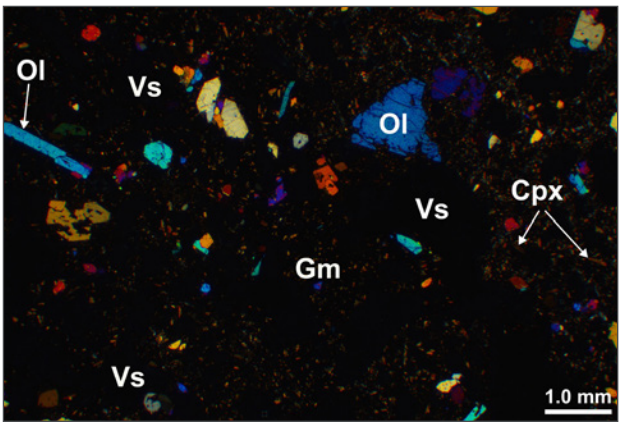
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

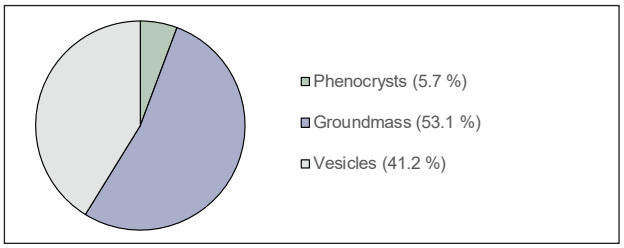
GENERAL VIEW 1 (PPL)



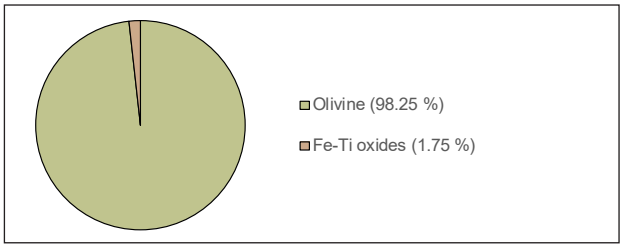
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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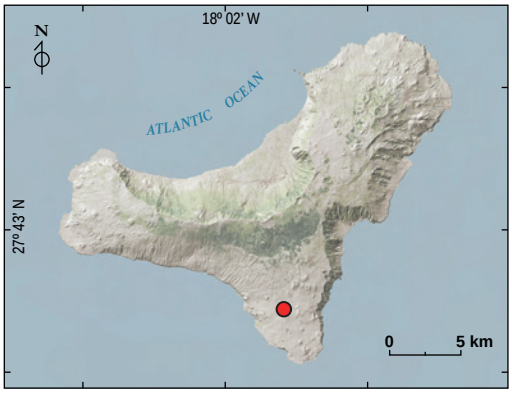
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-090
Location (Lat/Long WGS84)	27.671570 / -17.999453
Eruption name (rift) / ID	El Lajial XV-Montaña de los Júlanes (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated pahoehoe lava flow, dark grey in color, ≈0.4m thick, part of a ≈10m deep lava lake at the bottom of the Montaña Lajura crater
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.7mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals and minor glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

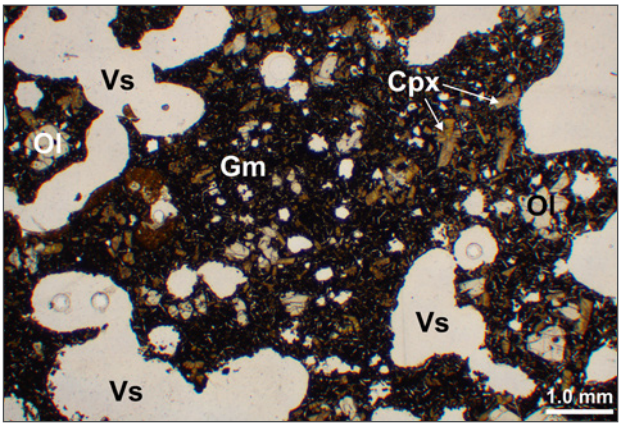
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.7mm; Euhedral crystals and glomerocrysts; Sector zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

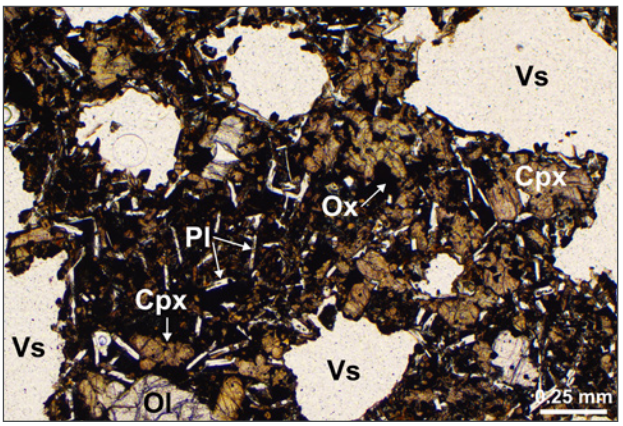
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.15mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

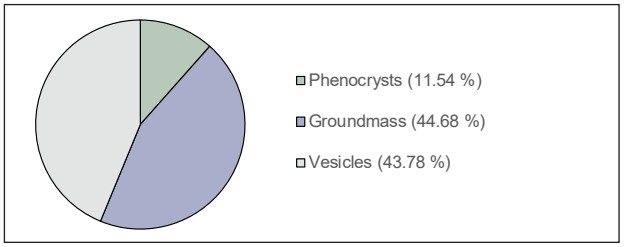
GENERAL VIEW (PPL)



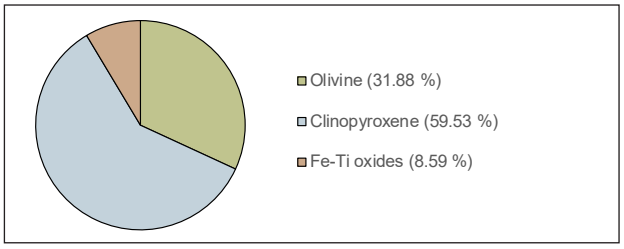
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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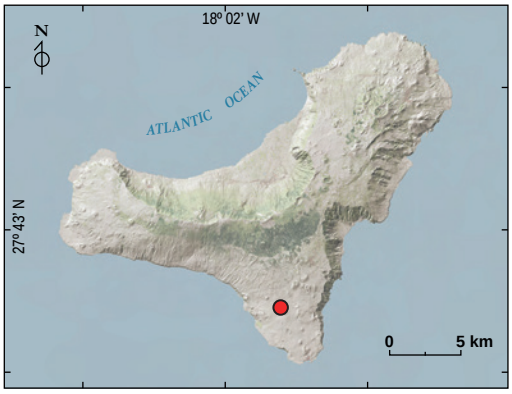
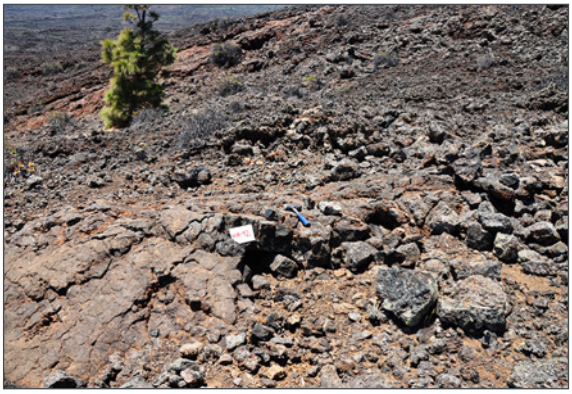
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-092
Location (Lat/Long WGS84)	27.672718 / -18.001784
Eruption name (rift) / ID	El Lajial VII-Montaña los Júlanes NW (S) / 6
Material type	Lava
Outcrop description	Aphanitic, moderately vesiculated spiny pahoehoe lava flow, dark grey in colour, ≈0.5m thick, forming a lava tube
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ol + Ox + (Pl) + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.6mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

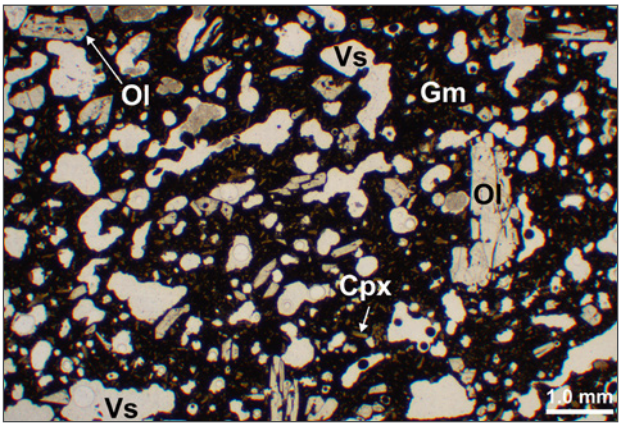
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3mm; Euhedral to subhedral crystals, the latter with slightly embayed rims; Complex zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and minor glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the groundmass.

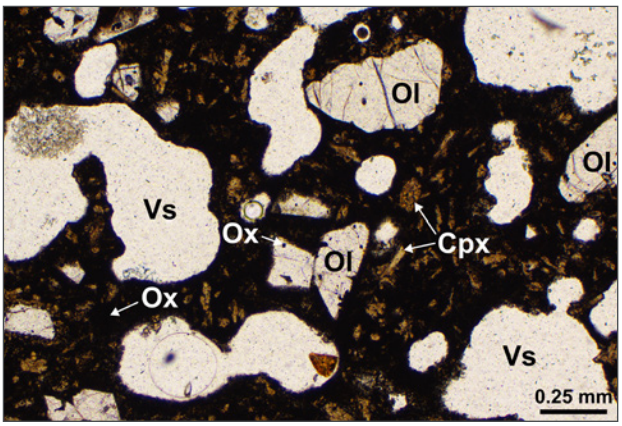
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2mm; Anhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Subhedral to anhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

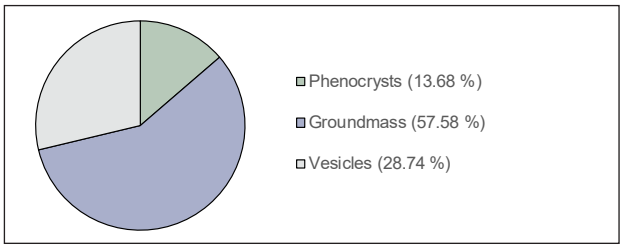
GENERAL VIEW (PPL)



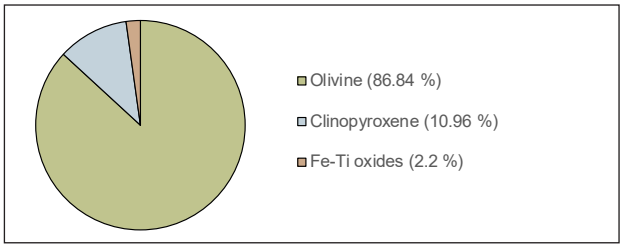
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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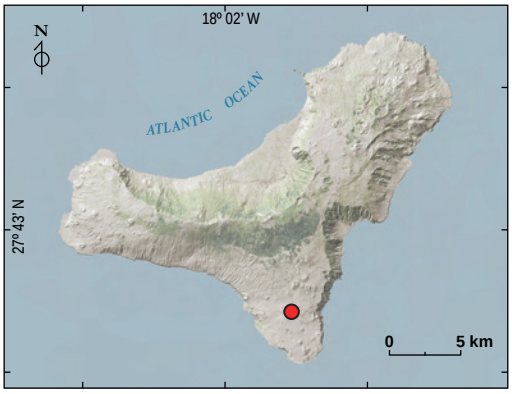
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-099
Location (Lat/Long WGS84)	27.671386 / -17.995975
Eruption name (rift) / ID	El Lajial IV-Cueva de La Paja (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated a'a lava flow, dark grey in colour, ≈2m thick, inside Cueva de La Paja pit crater
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.2mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with strongly embayed rims, minor skeletal texture and forming glomerporphyritic texture with Cpx; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

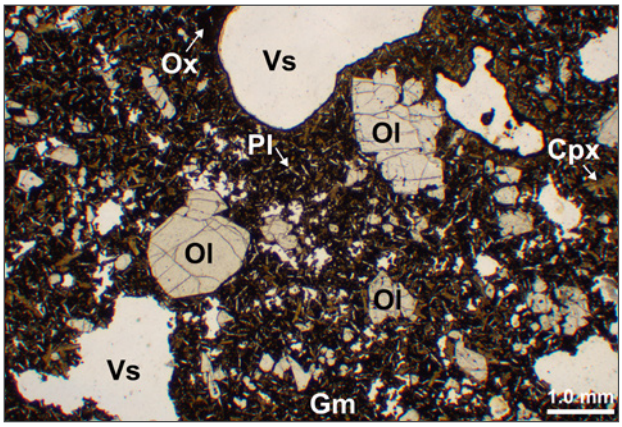
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.6mm; Minor euhedral crystals and glomerocrysts; Sector zoning.
Mesocrysts: Maximum size of 0.5mm; Minor euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

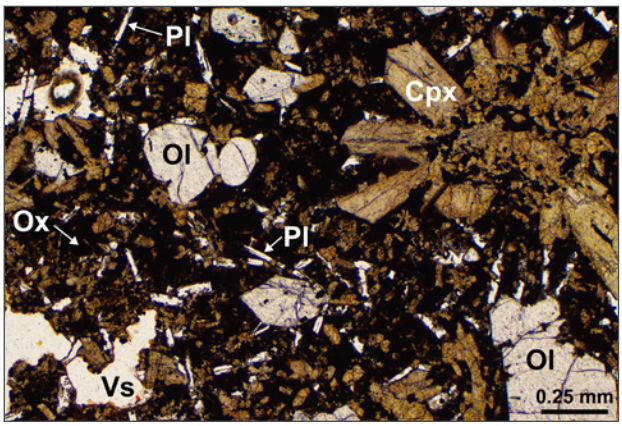
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

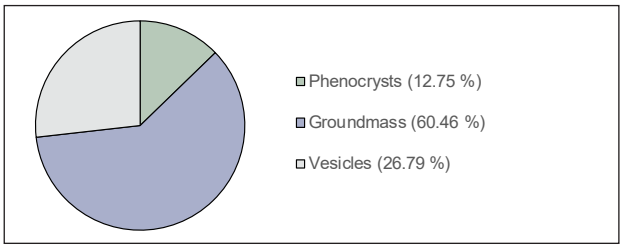
GENERAL VIEW (PPL)



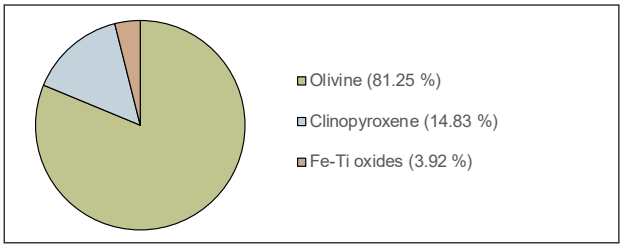
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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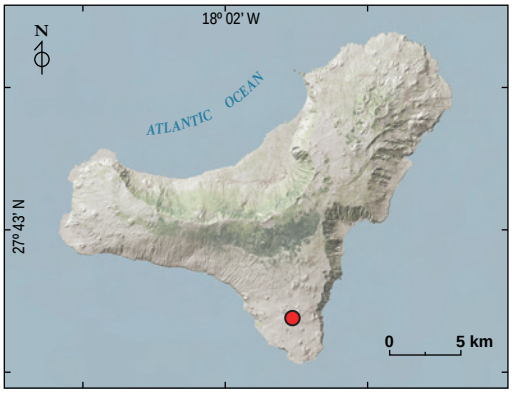
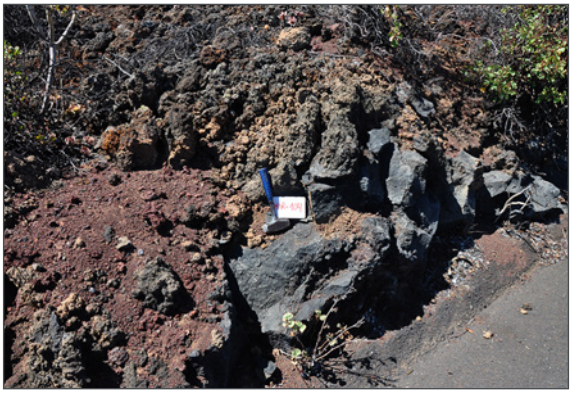
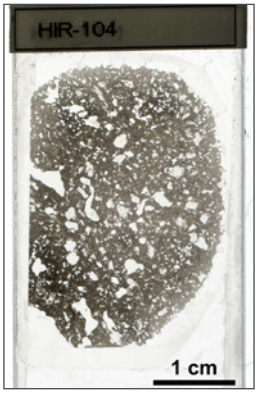
LOCATION MAP



OUTCROP



THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-104
Location (Lat/Long WGS84)	27.666220 / -17.993455
Eruption name (rift) / ID	El Lajial VI-Hoya del Roque (S) / 6
Material type	Lava
Outcrop description	Spiny pahoehoe with a massive, low vesiculated, aphanitic, grey in colour, >1m thick, inner part
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.9mm; Euhedral to anhedral crystals; Some of them with strongly embayed rims, minor skeletal texture and forming glomerporphyritic texture with Cpx; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them forming glomerporphyritic texture with Cpx; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

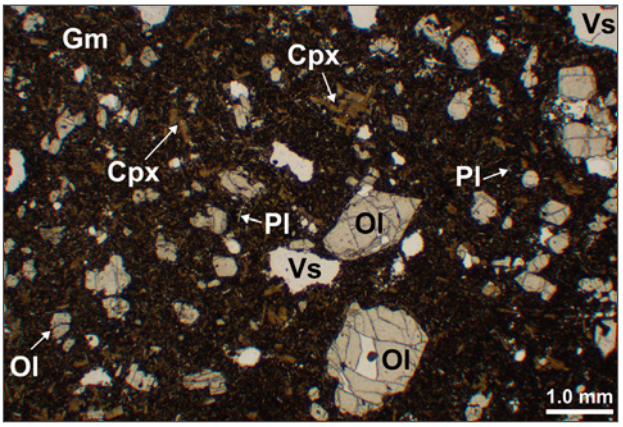
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

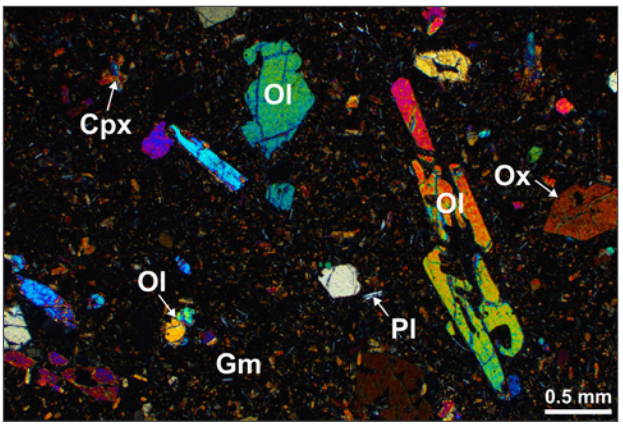
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.3mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

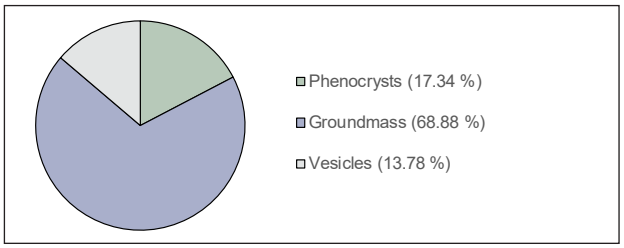
GENERAL VIEW (PPL)



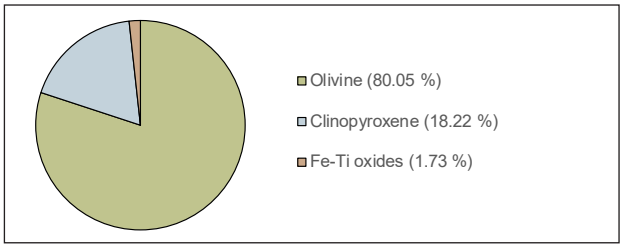
DETAILED VIEW (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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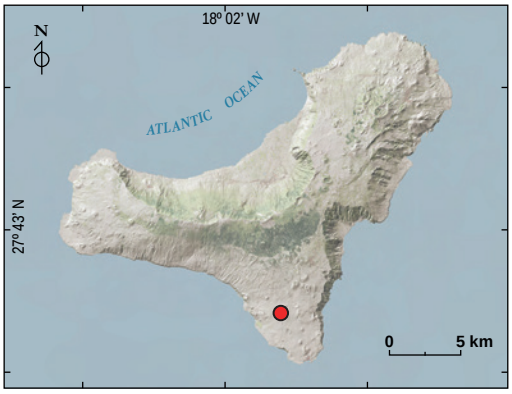
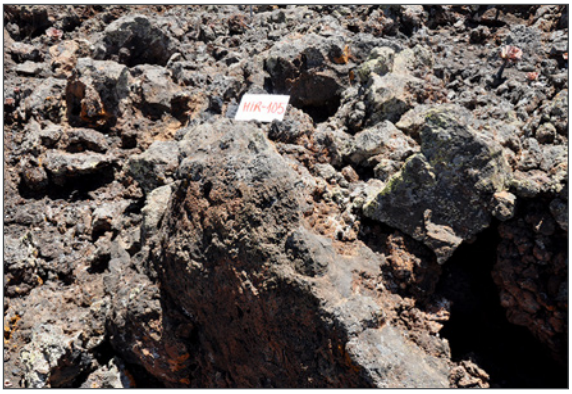
UNIÓN EUROPEA
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-105
Location (Lat/Long WGS84)	27.669167 / -18.001445
Eruption name (rift) / ID	El Lajial XIII-Montaña los Júlanes SW1 (S) / 6
Material type	Lava
Outcrop description	Transitional spiny pahoehoe to a'a lava flow, low vesiculated, aphanitic, grey in colour, >1m thick
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with fine-grained groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.5mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly embayed rims and minor skeletal texture; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral to anhedral crystals in the groundmass.

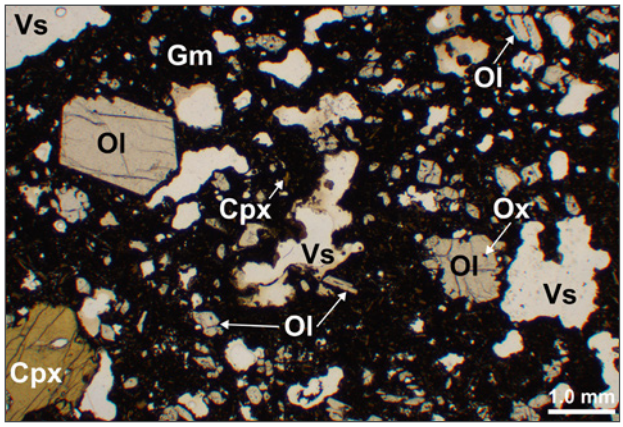
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocryts: Maximum size of 2.8mm; Euhedral to subhedral crystals; Normal to reverse and complex zoning; Fe-Ti oxides inclusions in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.36mm; Euhedral crystals; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

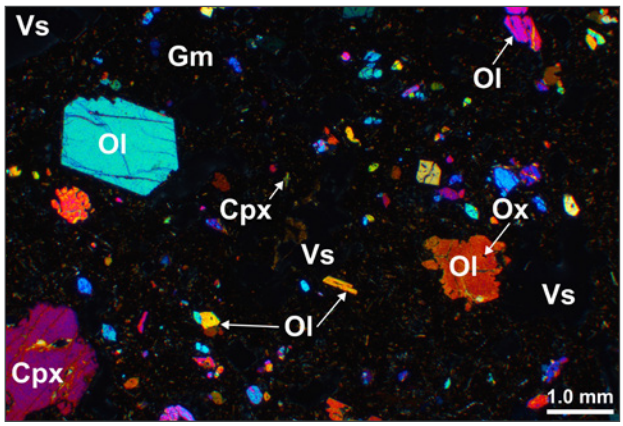
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.2mm; Minor subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light; XPL: Crossed Polars.

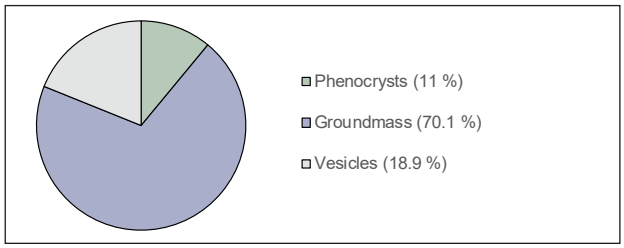
GENERAL VIEW 1 (PPL)



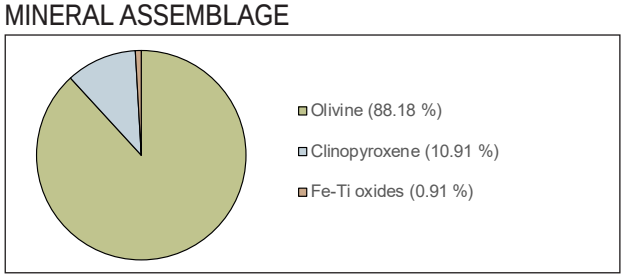
GENERAL VIEW 2 (XPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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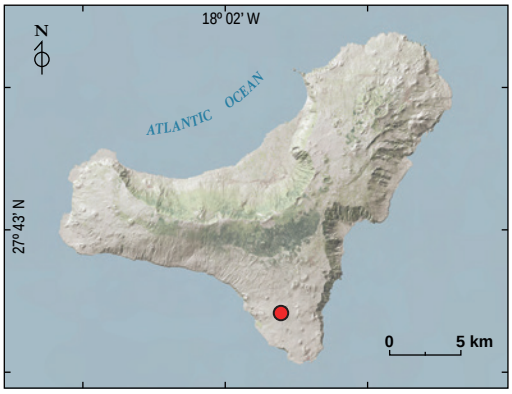
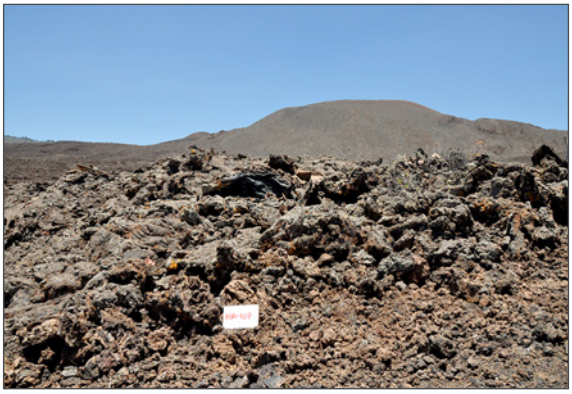
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-107
Location (Lat/Long WGS84)	27.667198 / -18.004240
Eruption name (rift) / ID	El Lajial XIII-Montaña los Júlanes SW1 (S) / 6
Material type	Lava
Outcrop description	Transitional spiny to corded pahoehoe lava flow, moderately vesiculated, aphanitic, grey in colour, >1m thick
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.8mm; Euhedral to subhedral crystals, the latter with slightly embayed rims and minor skeletal texture; Some of them forming glomerporphyritic texture with Cpx; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

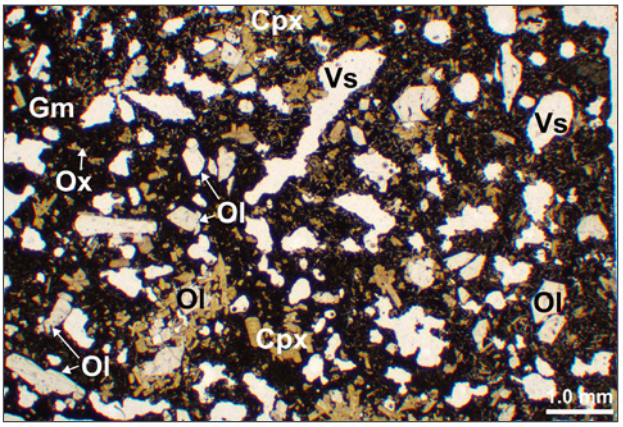
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.9mm; Euhedral crystals and minor glomerocrysts; Sector zoning; Minor Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector zoning; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

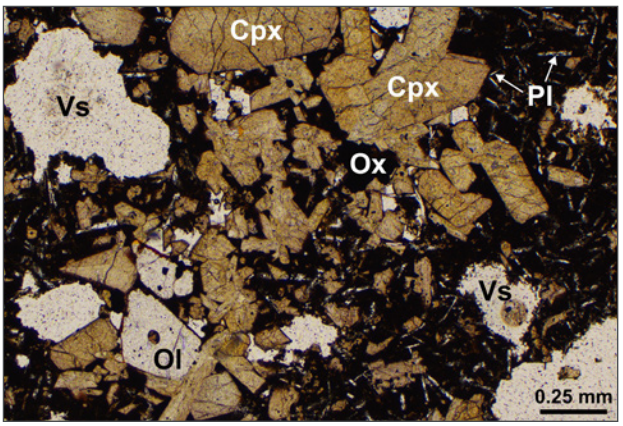
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Equidimensional euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

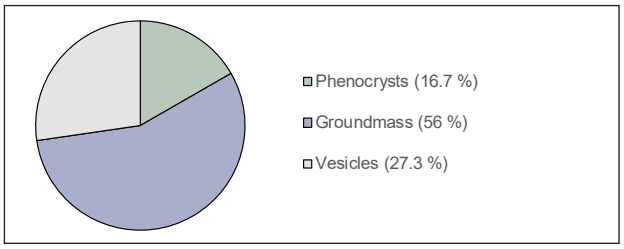
GENERAL VIEW (PPL)



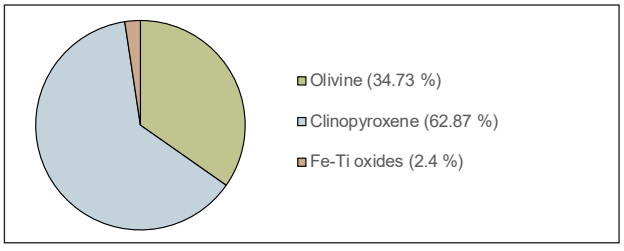
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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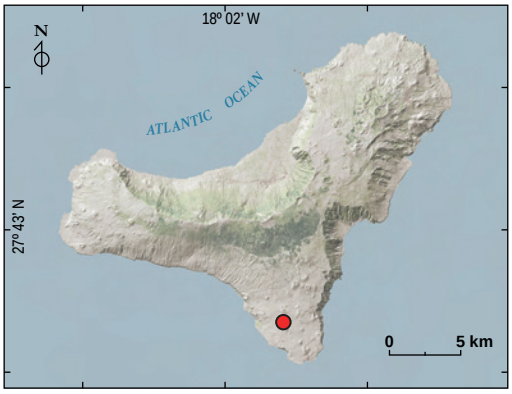
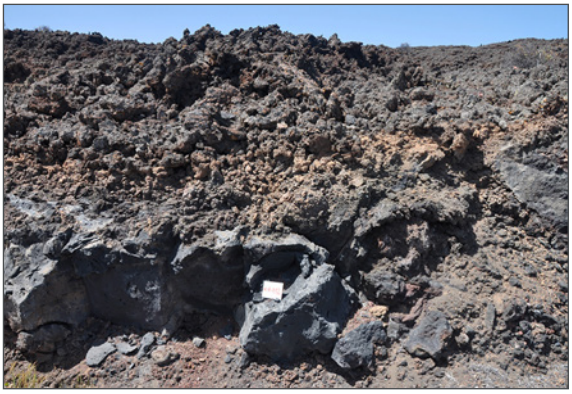
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-112
Location (Lat/Long WGS84)	27.663808 / -17.999501
Eruption name (rift) / ID	El Lajial I-Luna (S) / 6
Material type	Lava
Outcrop description	Spiny pahoehoe lava flow, moderately vesiculated, aphanitic, grey in colour, >1m thick, inner part
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl

Olivine
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 2.5mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims and minor skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Few of them forming glomerporphyritic texture with Cpx; Fe-Ti oxides inclusions.

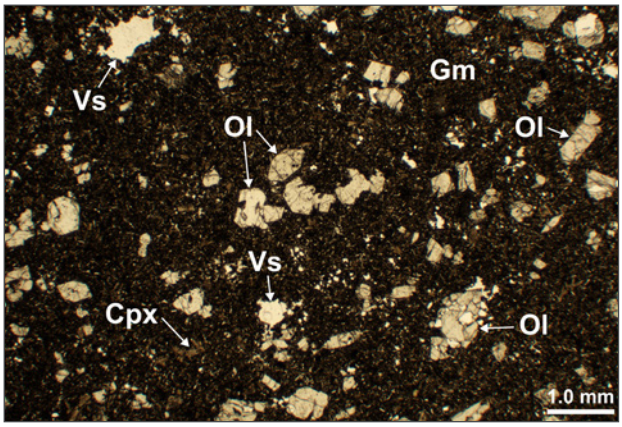
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and glomerocrysts; Sector and oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

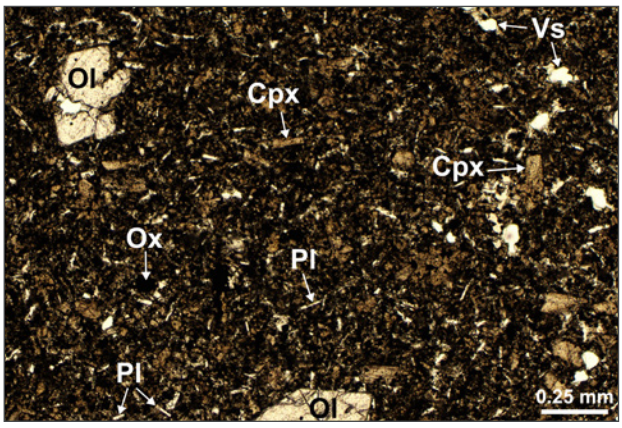
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

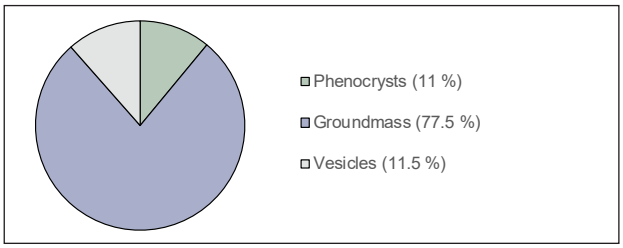
GENERAL VIEW (PPL)



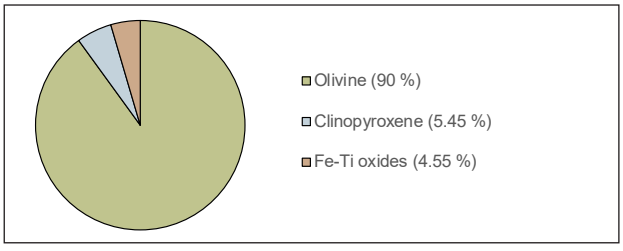
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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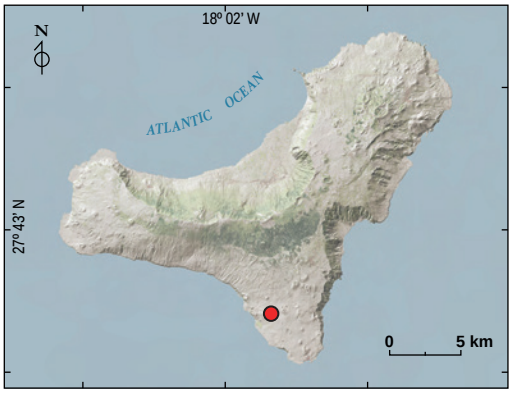
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-114
Location (Lat/Long WGS84)	27.669160 / -18.009036
Eruption name (rift) / ID	El Lajial VIII-Aborigen (S) / 6
Material type	Lava
Outcrop description	Aphanitic, highly vesiculated spiny pahoehoe lava flow, dark grey in colour, ≈0.5m thick inside a pit crater
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.6mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims and skeletal texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims and skeletal texture.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

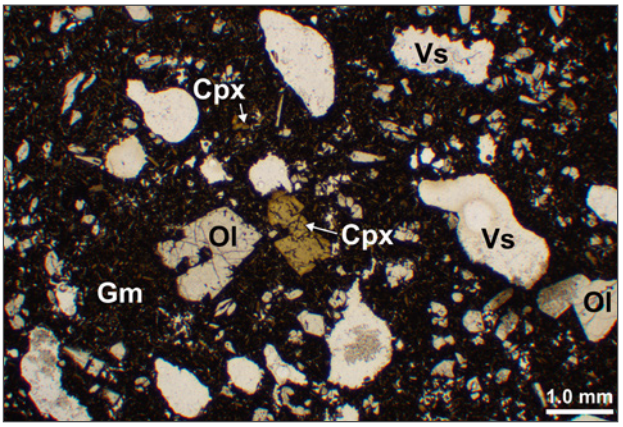
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 4.8mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals; Normal to reverse zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

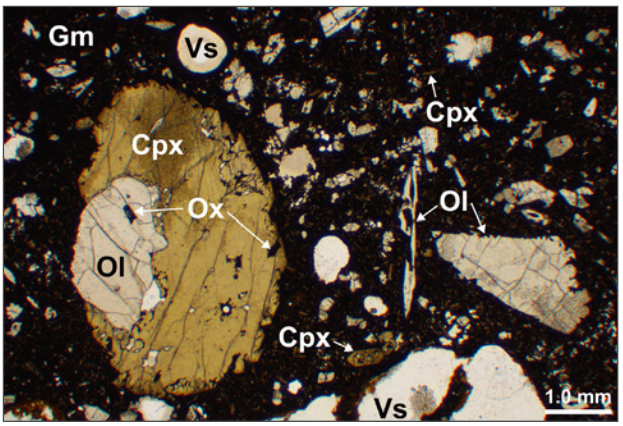
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

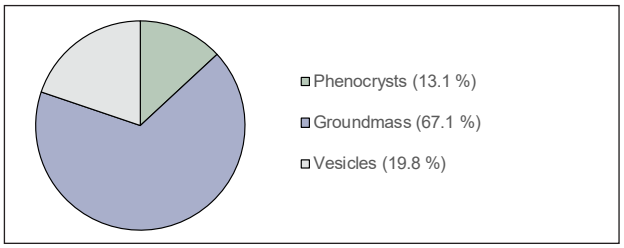
GENERAL VIEW 1 (PPL)



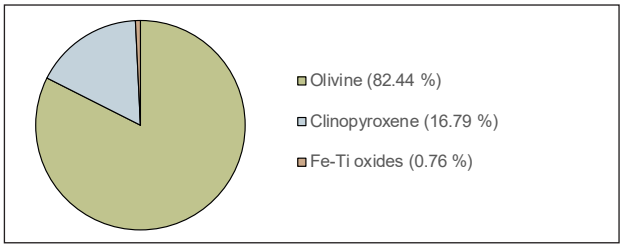
GENERAL VIEW 2 (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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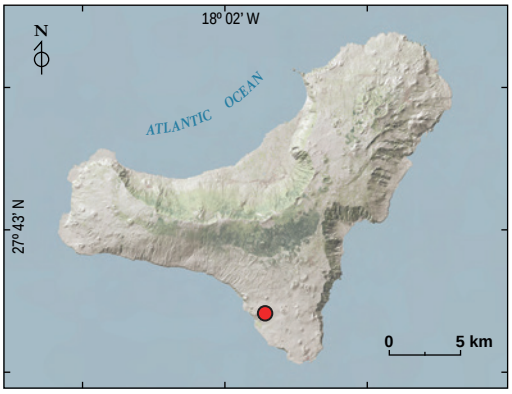
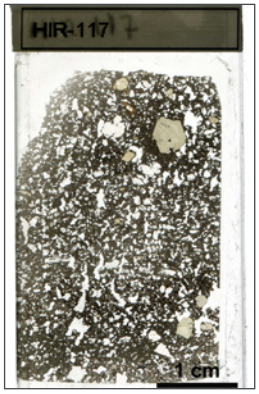
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-117
Location (Lat/Long WGS84)	27.668507 / -18.012384
Eruption name (rift) / ID	El Lajial V-Roque Chico W (S) / 6
Material type	Lava
Outcrop description	Aphanitic, moderately vesiculated a'a lava flow, with a >1m thick, massive inner part
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.2mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with skeletal texture; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

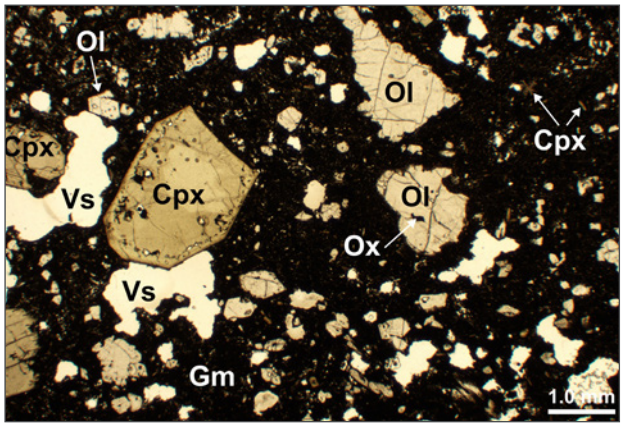
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 4.9mm; Euhedral to subhedral crystals, the latter with slightly to strongly embayed rims; Complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

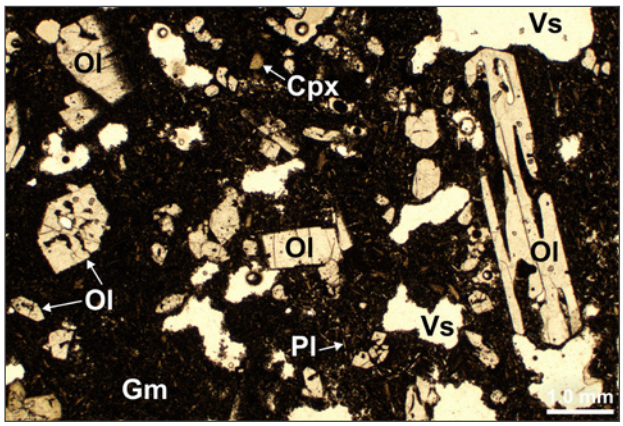
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

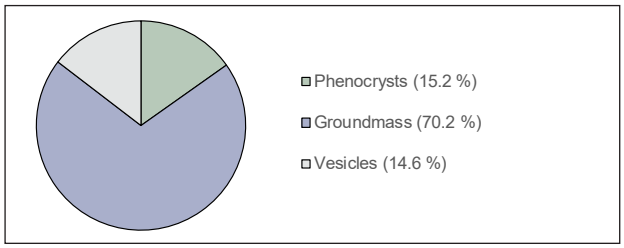
GENERAL VIEW 1 (PPL)



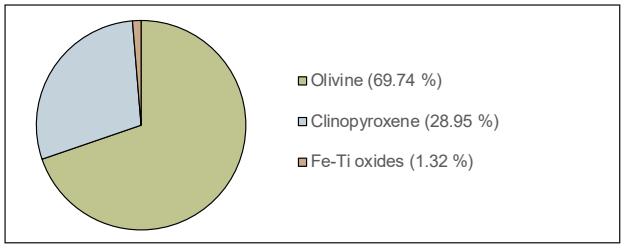
GENERAL VIEW 2 (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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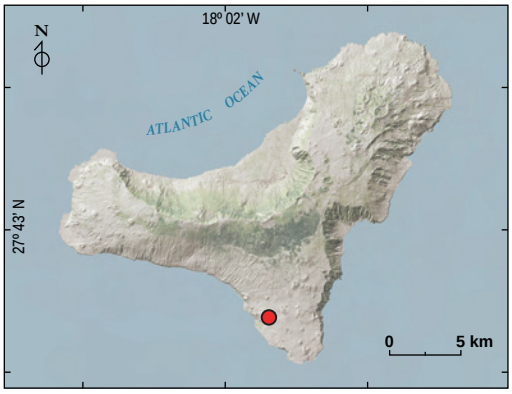
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-122
Location (Lat/Long WGS84)	27.666258 / -18.009973
Eruption name (rift) / ID	El Lajial VIII-Aborigen (S) / 6
Material type	Lava
Outcrop description	Aphanitic, moderately vesiculated spiny pahoehoe with a >1m thick, massive inner part
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.4mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims and minor skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly embayed rims; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

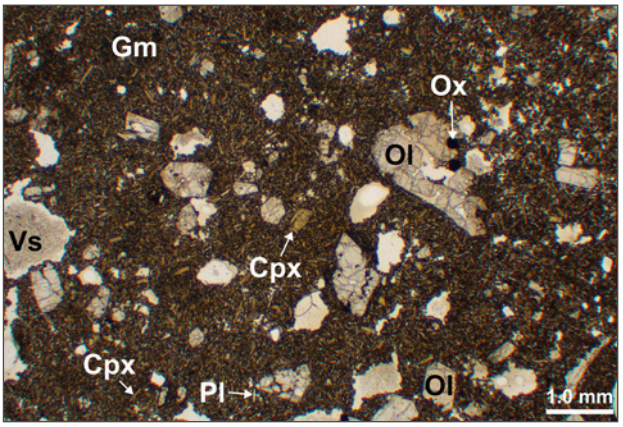
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.1mm; Subhedral to anhedral crystals; Some of them with strongly embayed rims; Normal to reverse and complex zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.4mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

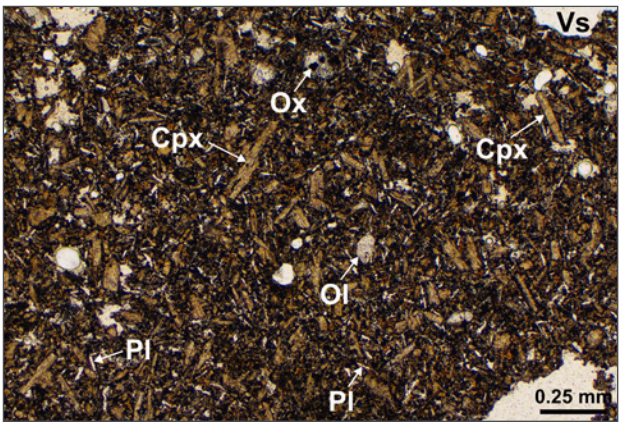
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

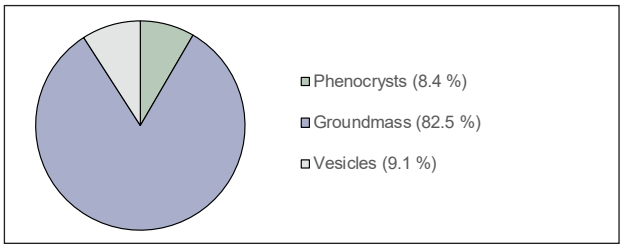
GENERAL VIEW (PPL)



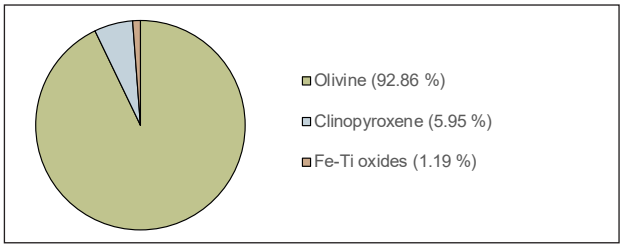
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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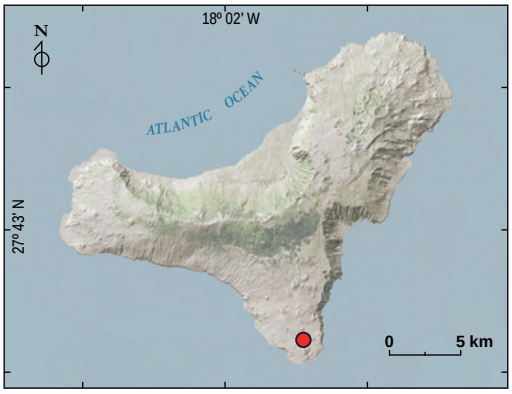
MINISTERIO DE CIENCIA E INNOVACIÓN
UNIÓN EUROPEA
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-131
Location (Lat/Long WGS84)	27.652599 / -17.984989
Eruption name (rift) / ID	Montaña de Prim (S) / 5
Material type	Lava
Outcrop description	Aphanitic, moderately vesiculated a'a lava flow, visible thickness >1m
TAS Classification	Tephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Ox + Cpx
Groundmass assemblage	Ox + Pl + Cpx + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2mm; Euhedral to subhedral crystals; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.3mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

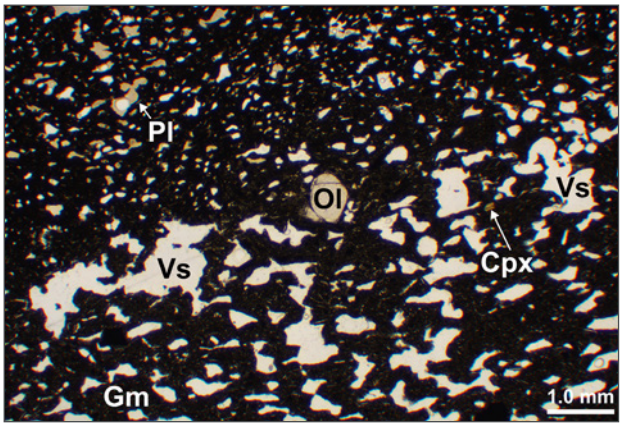
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.9mm; Euhedral to subhedral crystals; Normal to reverse zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals; Normal to reverse zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

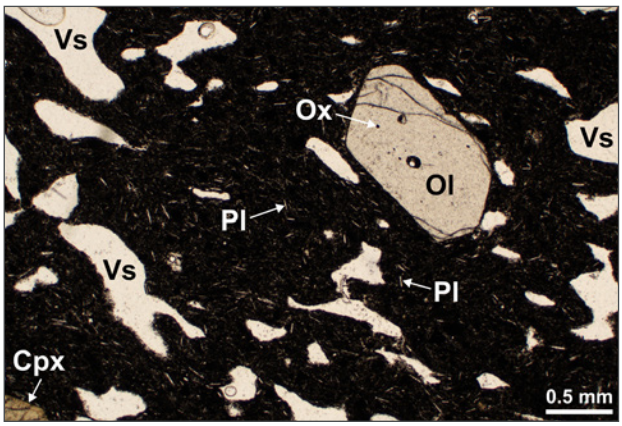
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.6mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

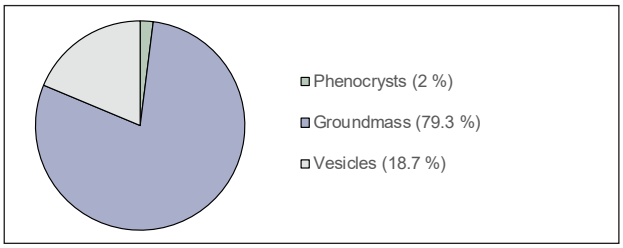
GENERAL VIEW (PPL)



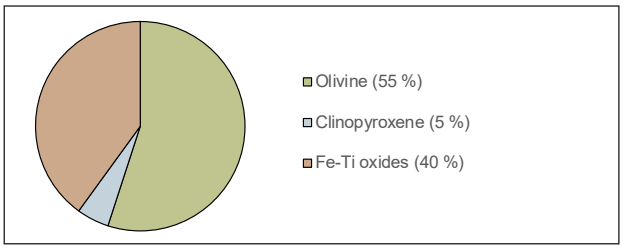
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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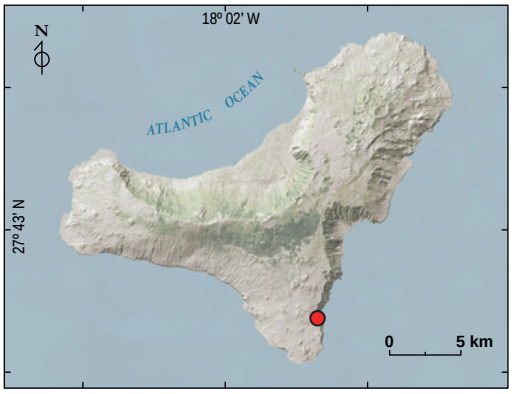
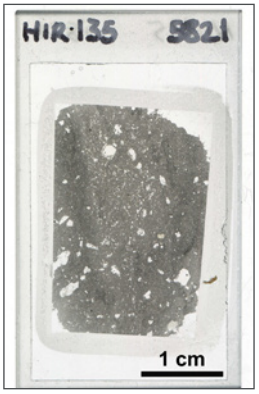
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-135
Location (Lat/Long WGS84)	27.666489 / -17.975166
Eruption name (rift) / ID	Calderetones (S) / 36
Material type	Tephra
Outcrop description	The sample was taken in a volcanic bomb of 50 x 30 x 30 cm. Aphanitic, grey in colour and very low vesiculated
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Ox + Cpx
Groundmass assemblage	Pl + Ox + Ol + Cpx

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.3mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

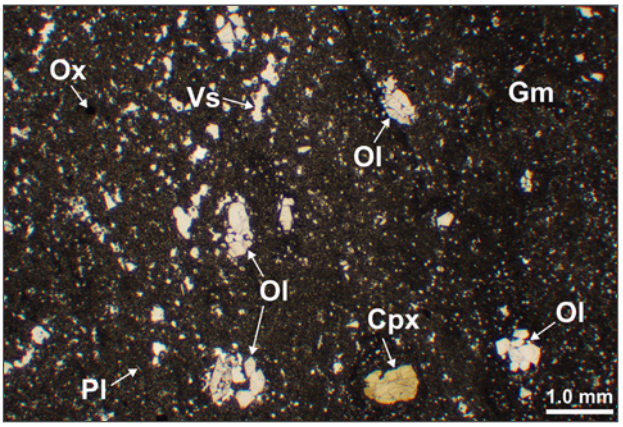
Clinopyroxene
Ocurrs as macrocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.84mm; Subhedral crystals, some of them with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

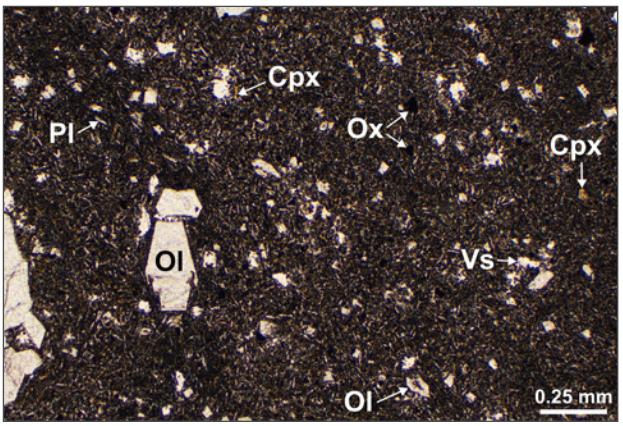
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.19mm; Subhedral to anhedral crystals, some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

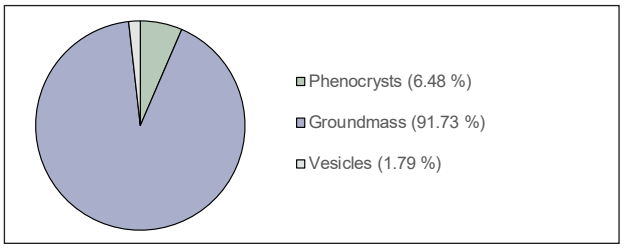
GENERAL VIEW (PPL)



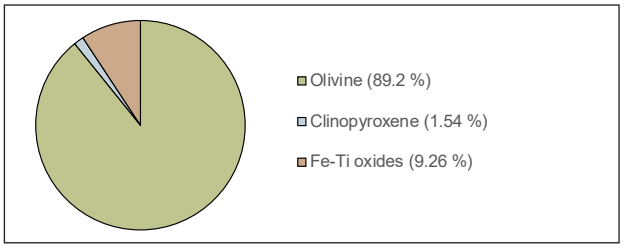
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

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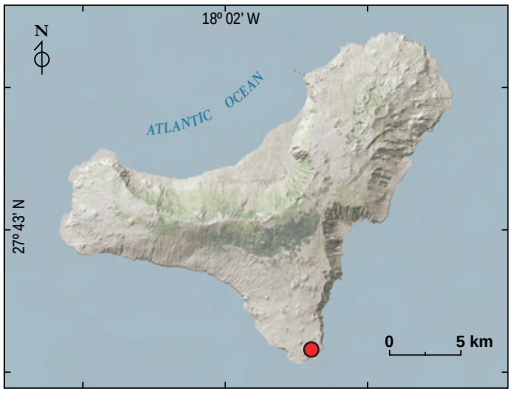
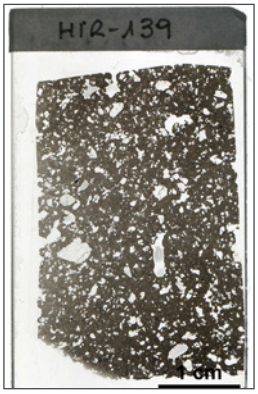
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-139
Location (Lat/Long WGS84)	27.646613 / -17.979195
Eruption name (rift) / ID	Montaña de Prim (S) / 5
Material type	Lava
Outcrop description	Aphanitic, grey in colour, moderately vesiculated a'a lava flow, with a thin scoriaceous basal breccia (<0.2m), a more developed scoriaceous top breccia (≈0.5m), and a massive inner part of ≈1.1m. This lava flow is on top of the HIR-140 lava flow, both outcropping in a small quarry
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Ox + (Cpx)
Groundmass assemblage	Cpx + Ox + (Pl)

Olivine
Ocurrs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 3.76mm; Euhedral to anhedral crystals; Some of them with slightly to strongly embayed rims and skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.

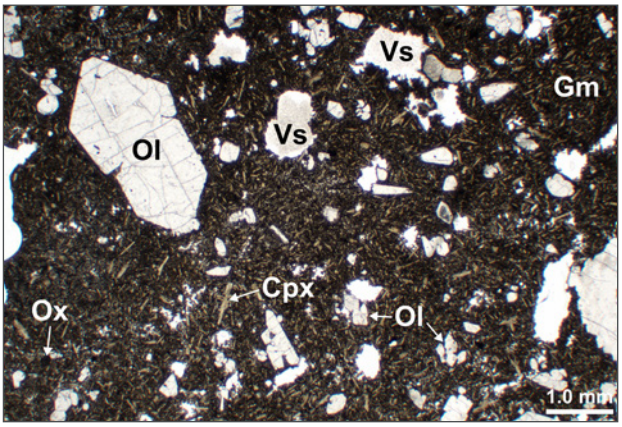
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.25mm; Minor euhedral crystals and glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

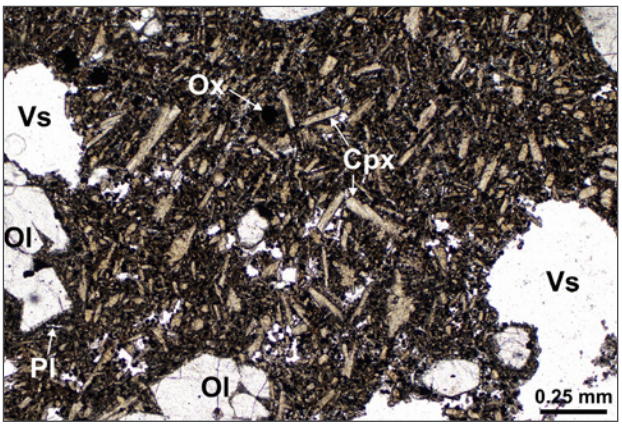
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

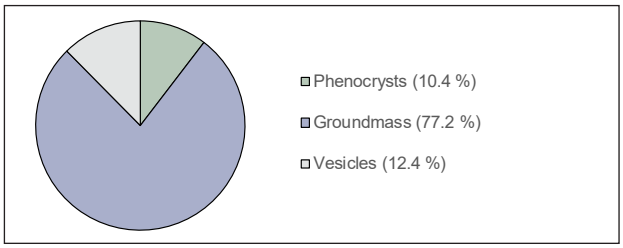
GENERAL VIEW (PPL)



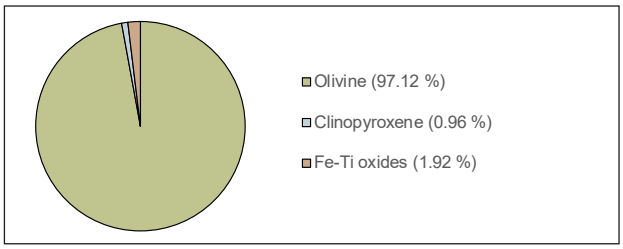
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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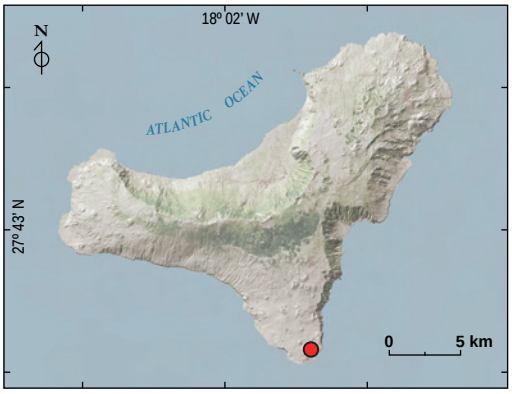
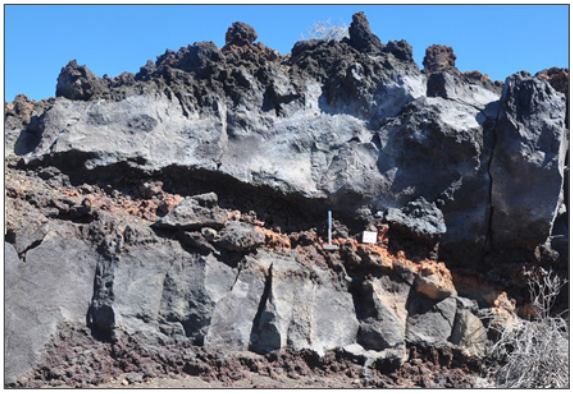
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-140
Location (Lat/Long WGS84)	27.646613 / -17.979195
Eruption name (rift) / ID	La Restinga IV (S) / 10
Material type	Lava
Outcrop description	Aphanitic, dark grey in colour, moderately vesiculated a'a lava flow, with thin scoriaceous basal and top breccias (both ≈0.2m) and a massive inner part of ≈1.1m. This lava is located under the HIR-139 lava flow, both outcropping in a small quarry
TAS Classification	Mugearite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic (locally trachytic) groundmass

MINERALOGY

Phenocryst assemblage	Pl + Ox + (Ol)
Groundmass assemblage	Pl + Ox + Ol + (Cpx)

Olivine
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass, some of the latter with slightly to strongly embayed rims.

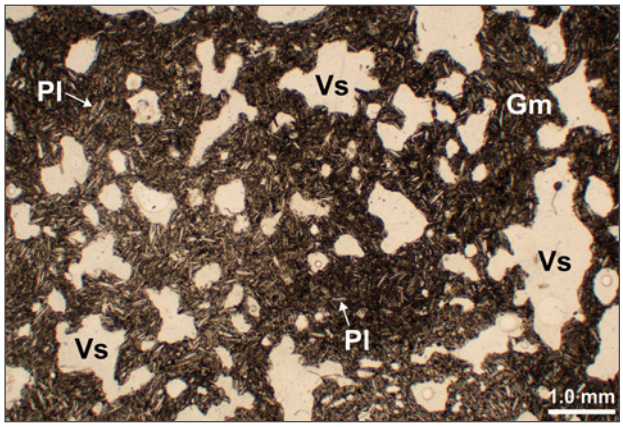
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.65mm; Euhedral crystals with resorbed cores.
Mesocrysts: Maximum size of 0.3mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

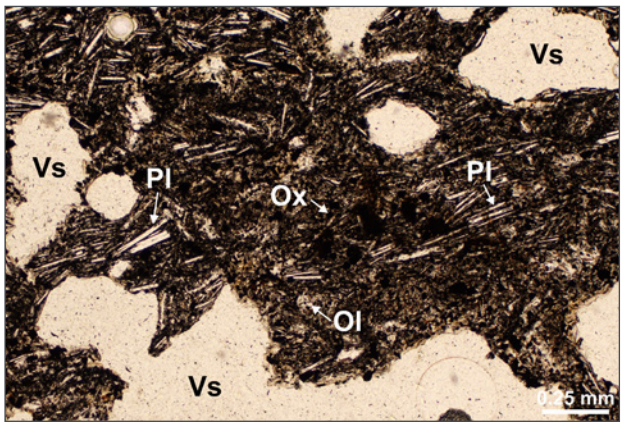
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size 0.3mm; Subhedral crystals with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

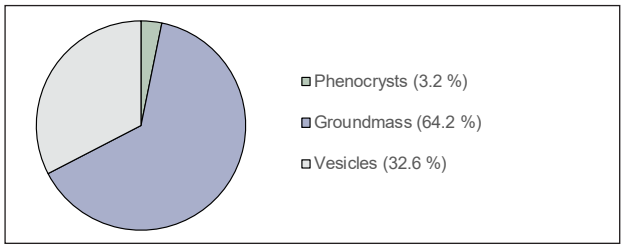
GENERAL VIEW (PPL)



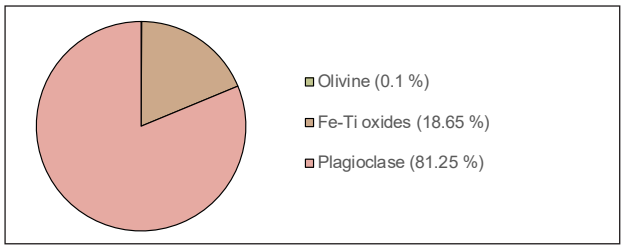
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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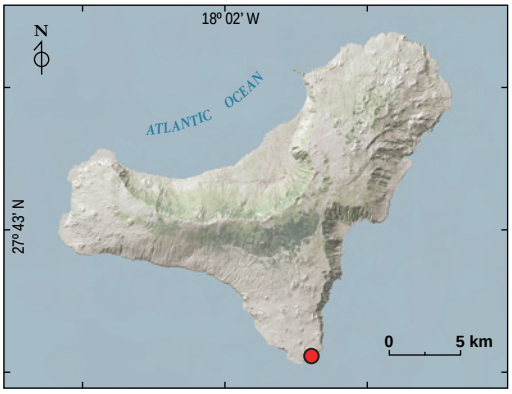
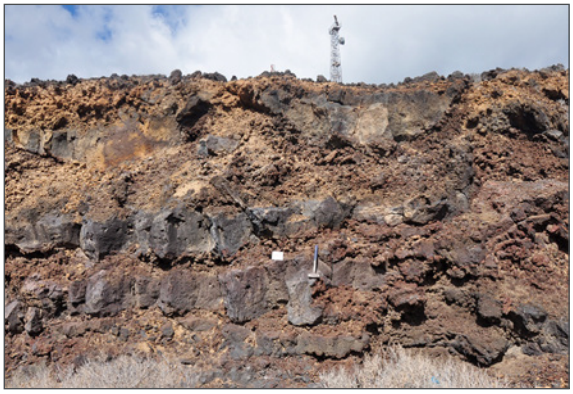
LOCATION MAP



OUTCROP

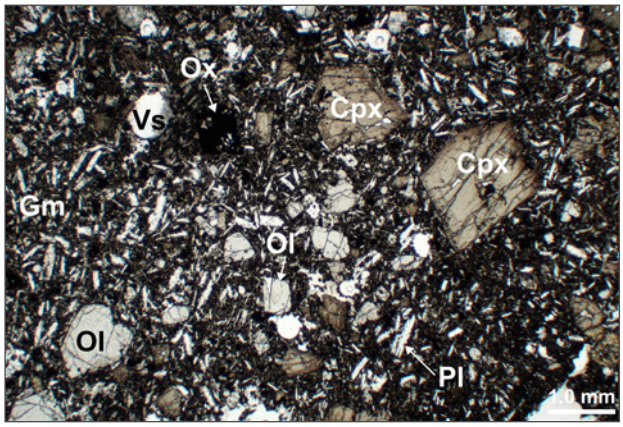


THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-141
Location (Lat/Long WGS84)	27.642638 / -17.978771
Eruption name (rift) / ID	La Restinga III (S) / 10
Material type	Lava
Outcrop description	Porphyritic, highly vesiculated a'a lava flow, dark grey in colour, of ≈0.5m thick, forming a sequence of 4 flows with a total thickness of ≈3m
TAS Classification	Basanite

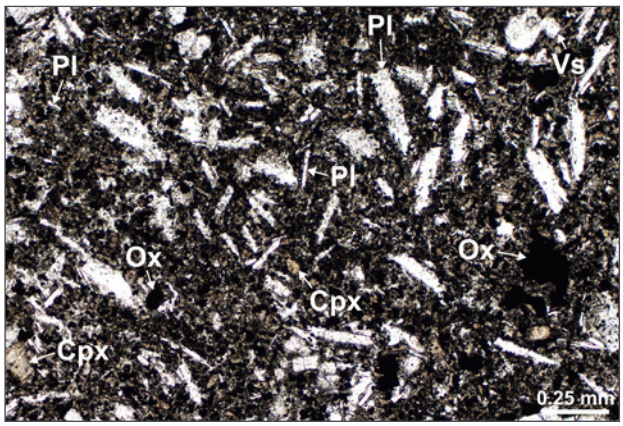
GENERAL VIEW (PPL)



TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

DETAILED VIEW (PPL)



MINERALOGY

Phenocryst assemblage	Ol + Cpx + Ox + Pl
Groundmass assemblage	Ox + Cpx + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.3mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims and minor skeletal texture; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

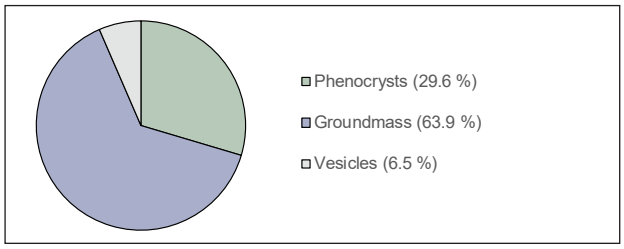
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 3.54mm; Euhedral to subhedral crystals; Normal to revere and sector zoning; Fe-Ti oxides inclusions with smaller ones in the crystal's zoned rim.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals; Sector zoning; Minor Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.67mm; Euhedral crystals; Oscillatory zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

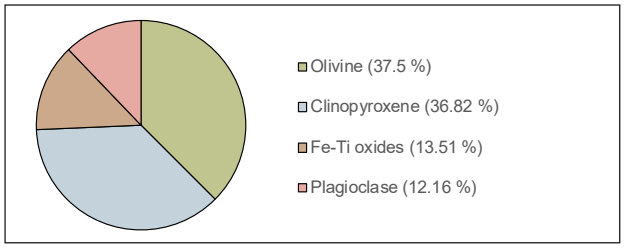
Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.73mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to anhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE

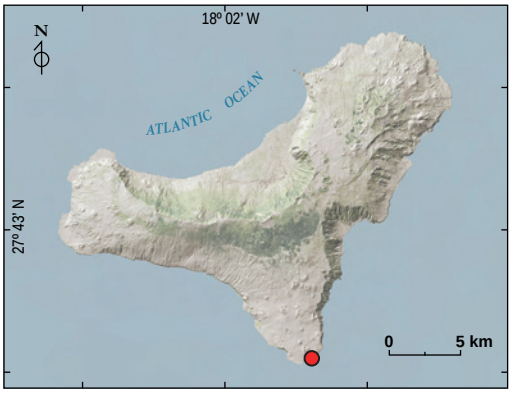


LAJIAL

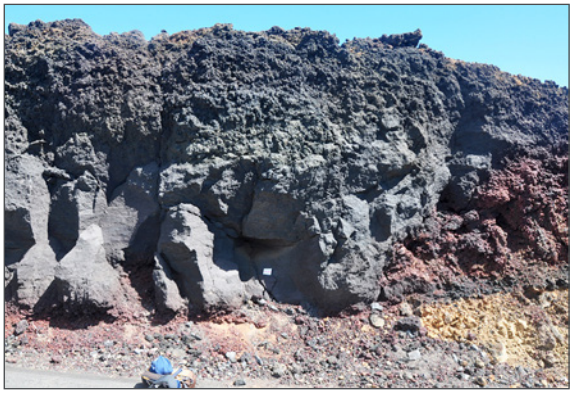
Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

MINISTERIO DE CIENCIA E INNOVACIÓN
UNIÓN EUROPEA
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-143
Location (Lat/Long WGS84)	27.641116 / -17.978526
Eruption name (rift) / ID	La Restinga II (S) / 10
Material type	Lava
Outcrop description	Aphanitic, vesiculated (small vesicles), grey in colour, thick (≈2m) a'a lava flow
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Cpx + Ol + (Pl)
Groundmass assemblage	Pl + Cpx + Ox + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.7mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly embayed rims.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

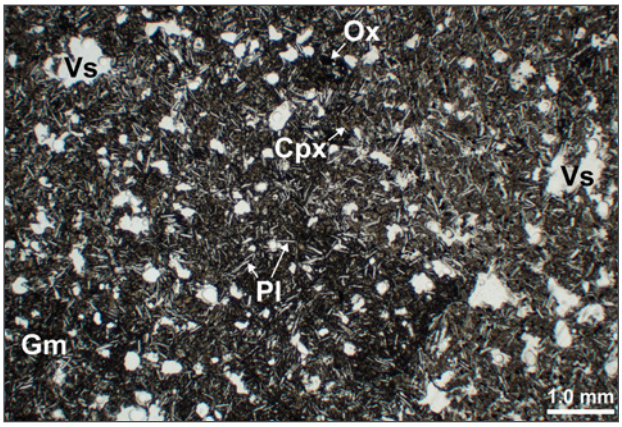
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.54mm; Euhedral glomerocrysts; Normal to reverse zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral crystals and minor glomerocrysts; Sector zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.63mm; Minor euhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Minor euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

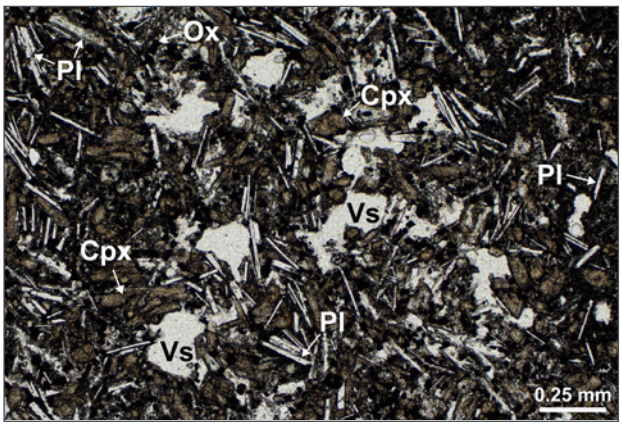
Fe-Ti oxides
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

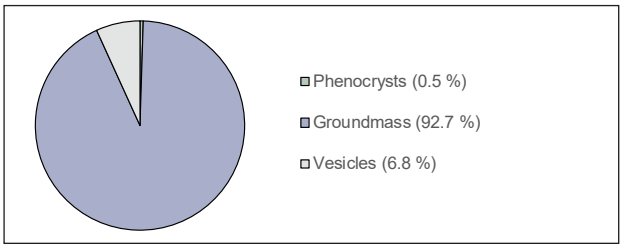
GENERAL VIEW (PPL)



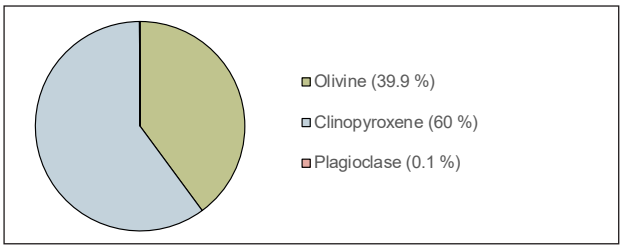
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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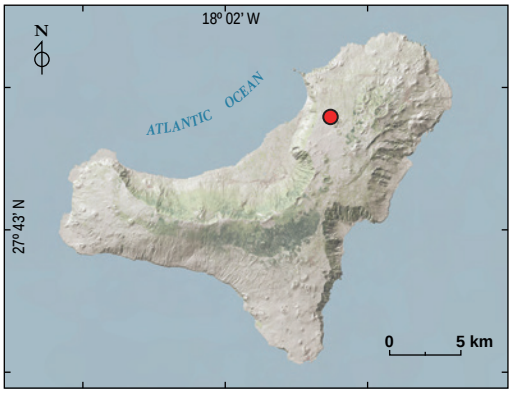
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-154
Location (Lat/Long WGS84)	27.794610 / -17.969825
Eruption name (rift) / ID	Montaña del Cascajo (NE) / 3
Material type	Lava
Outcrop description	Aphanitic, vesiculated, grey in colour, a'a lava flow, visible thickness >1m. The sample was taken in a levee of a lava channel
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Porphyritic, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ol + Cpx + (Ox)
Groundmass assemblage	Cpx + Ox + Pl + (Ol)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.6mm; Euhedral to subhedral crystals and minor glomerocrysts; Some of them with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

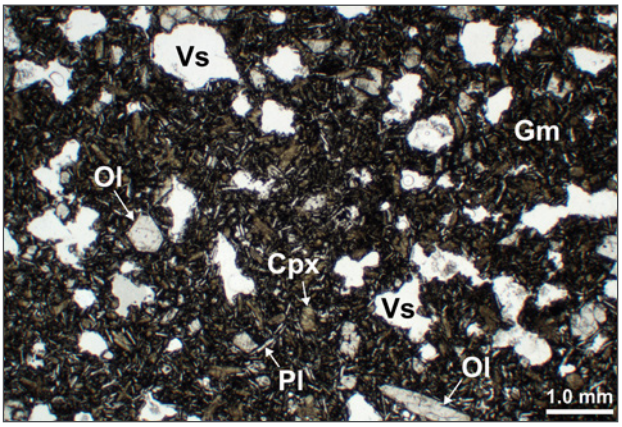
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.67mm; Euhedral crystals and minor glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and glomerocrysts; Sector zoning; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

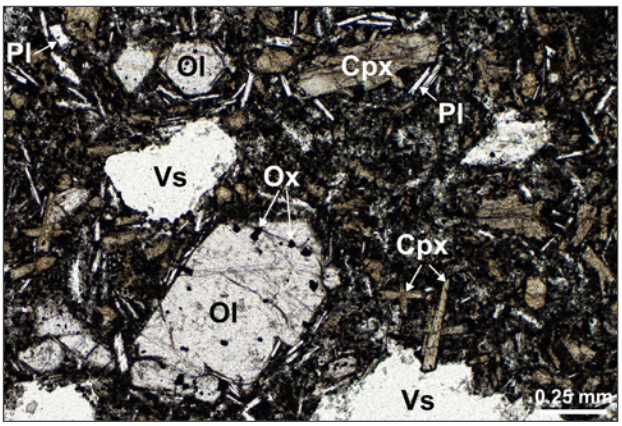
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.5mm; Minor euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to anhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

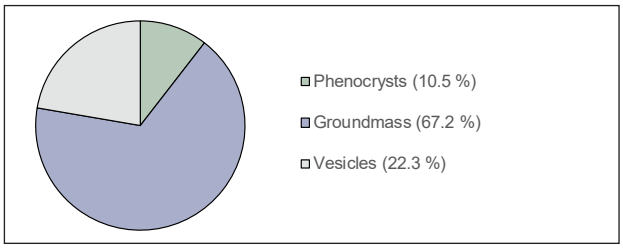
GENERAL VIEW (PPL)



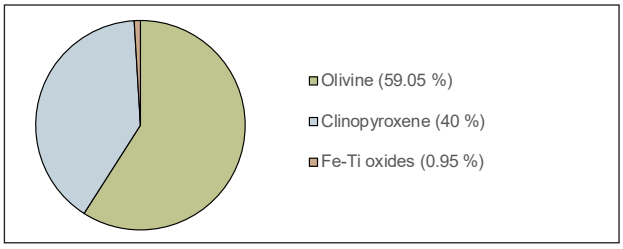
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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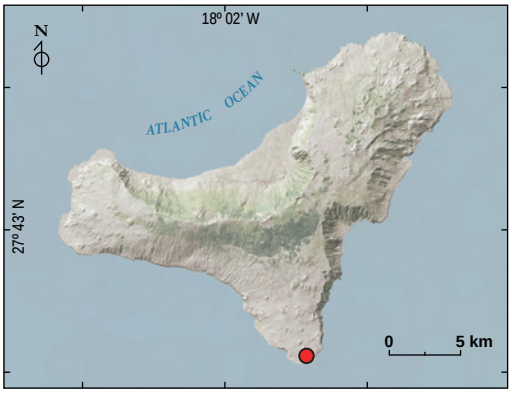
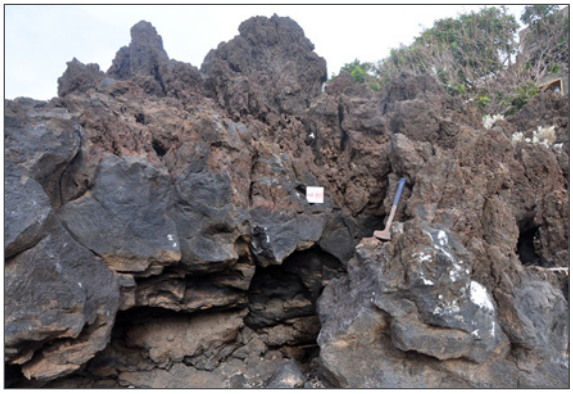
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-155
Location (Lat/Long WGS84)	27.640317 / -17.981619
Eruption name (rift) / ID	La Restinga I (S) / 10
Material type	Lava
Outcrop description	Aphanitic, vesiculated, dark grey in colour, thick (≈2m) a'a lava flow forming a marine platform
TAS Classification	Tephrite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Pl + Ox
Groundmass assemblage	Pl + Ox + Cpx + (Ol)

Olivine
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the groundmass.

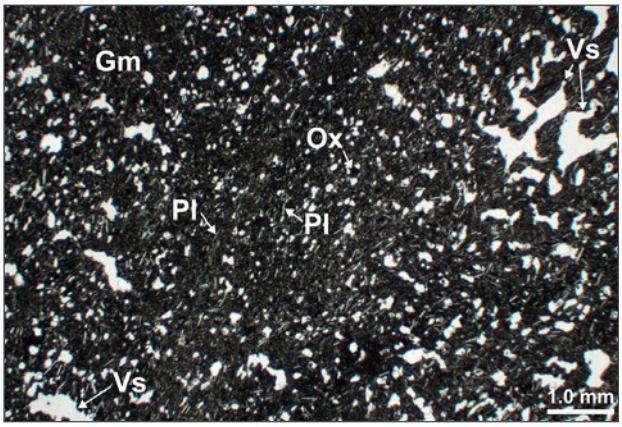
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

Plagioclase
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.22mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

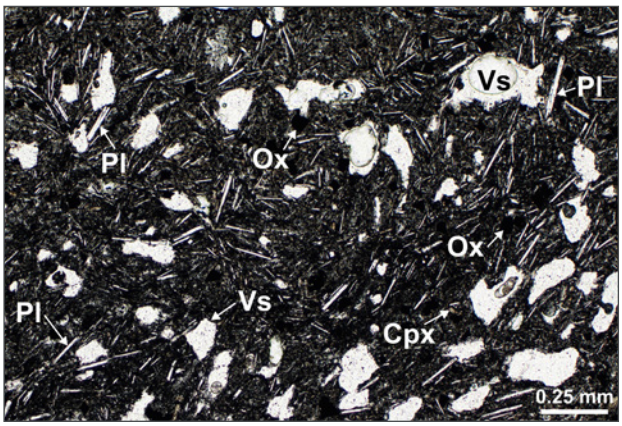
Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.12mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

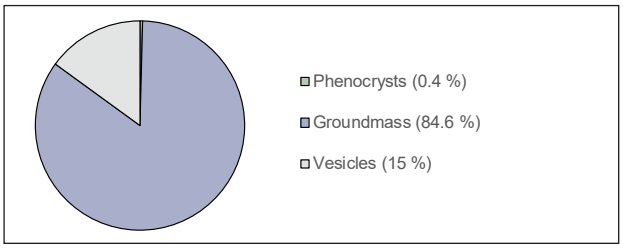
GENERAL VIEW (PPL)



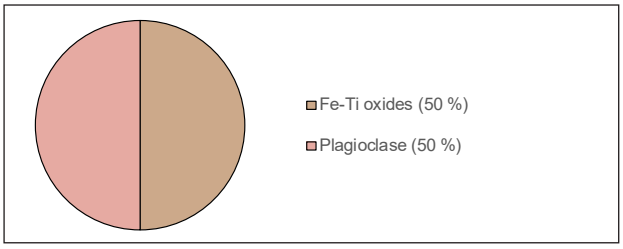
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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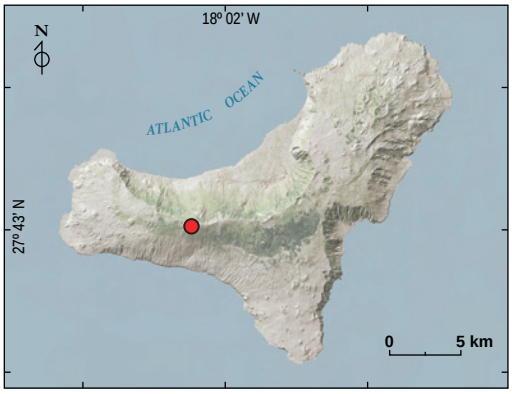
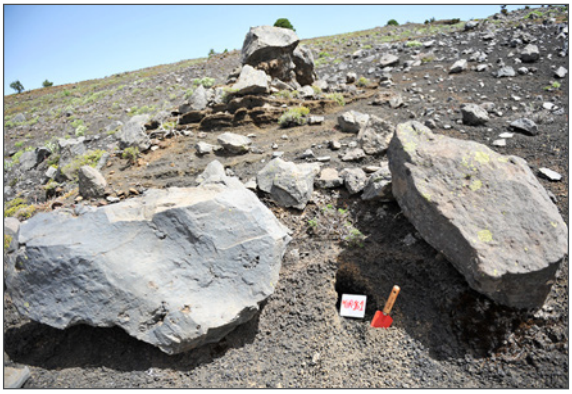
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-161
Location (Lat/Long WGS84)	27.722730 / -18.066723
Eruption name (rift) / ID	Tanganasoga (NW) / 15
Material type	Tephra
Outcrop description	Coarse lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈1m thick. Above pyroclastic surges and below grey lithic blocks
TAS Classification	Hawaiite

TEXTURE

Degree of crystalinity	Hypohyaline
Specific textures	Fragments Type 1 with sub-aphyric texture, highly vesicular with glassy sideromelane groundmass

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Cpx + Ox + Pl
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Cpx + Ox

Clinopyroxene
Ocurrs as macrocrysts, mesocryst and groundmass phase.
Macrocrysts: Maximum size of 0.76mm; Euhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

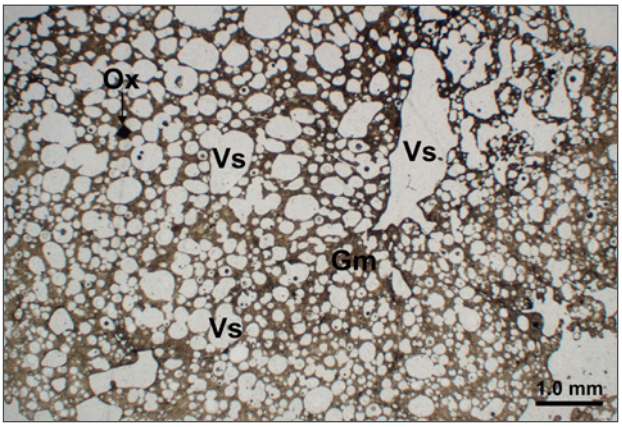
Plagioclase
Ocurrs as mesocryst and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the glassy groundmass, some of them with skeletal texture.

Fe-Ti oxides
Ocurrs as mesocryst and groundmass phase.
Mesocrysts: Maximum size of 0.3mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Equidimensional euhedral and needle-shaped crystals in the glassy groundmass.

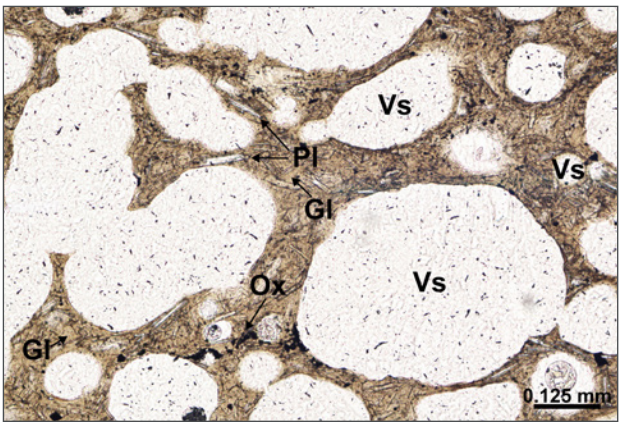
Glass
Light brown sideromelane glass.

Abbreviations
Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

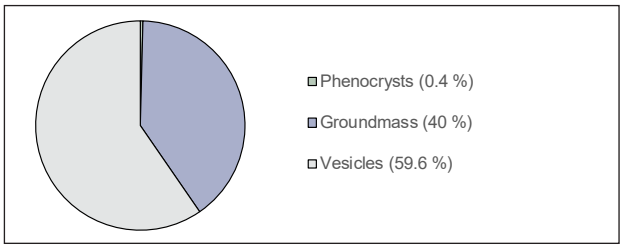
GENERAL VIEW (PPL)



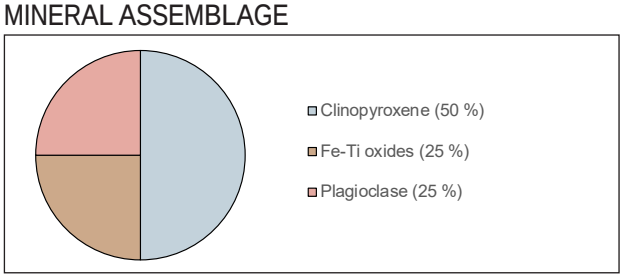
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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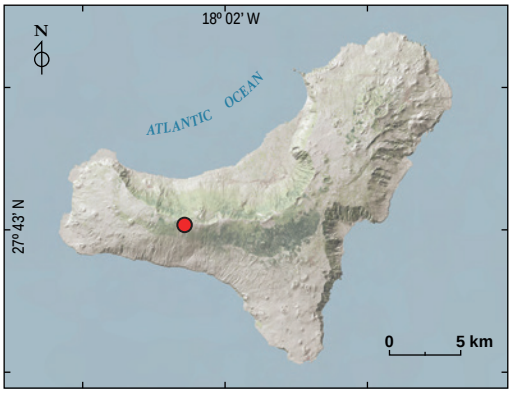
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-162
Location (Lat/Long WGS84)	27.723463 / -18.071320
Eruption name (rift) / ID	Picos de la Peña del Agua (NW) / 38
Material type	Tephra
Outcrop description	Coarse to medium lapilli tephra (strombolian pyroclastic fall deposit), black to brownish colour, ≈0,4m thick. It is below a thin layer (≈0.15m) of brownish pyroclastic ash deposit
TAS Classification	Hawaiite

TEXTURE

Degree of crystalinity	Hypohyaline to hypocrystalline
Specific textures	Fragments Type 1 with aphyric texture, highly vesicular with glassy sideromelane groundmass

MINERALOGY

Phenocryst assemblage	-
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Ox + Bt

Plagioclase
Occurs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass, some of them with supercooling texture.

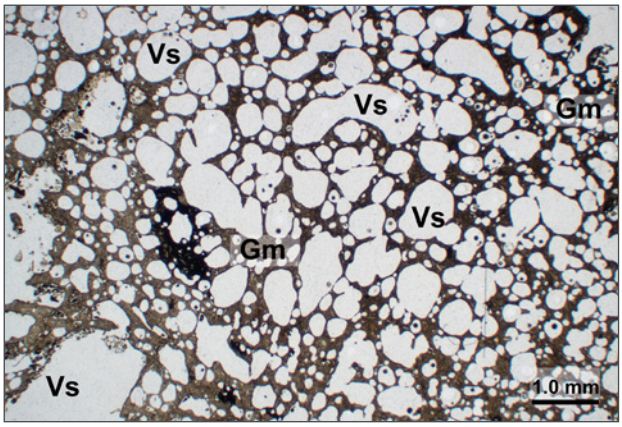
Fe-Ti oxides
Occurs as groundmass phase.
Groundmass: Size below 0.1mm; Equidimensional euhedral and needle-shaped crystals and minor glomerocrysts in the glassy groundmass.

Biotite
Occurs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

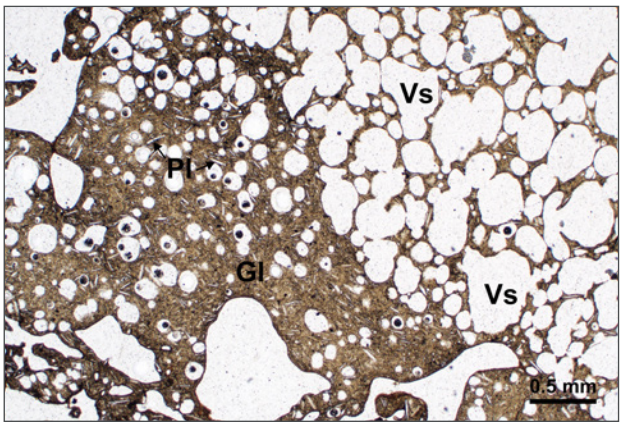
Glass
Light brown sideromelane glass.

Abbreviations
Pl: plagioclase; Ox: Fe-Ti oxides; Bt: biotite; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

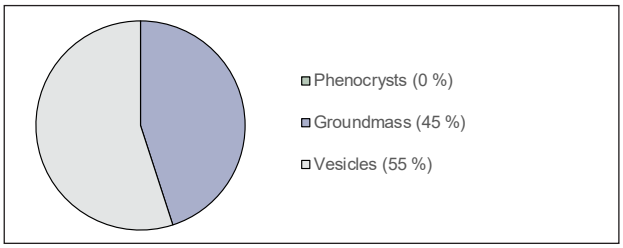
GENERAL VIEW (PPL)



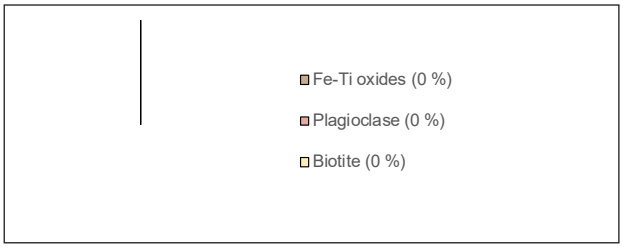
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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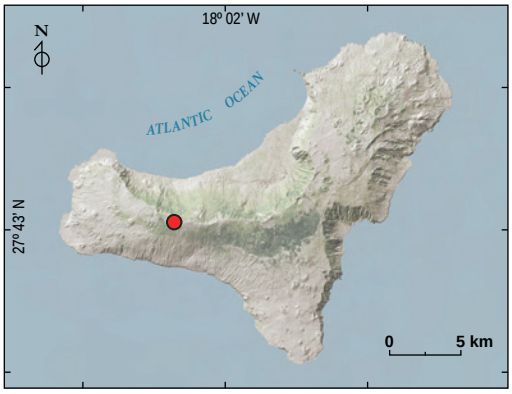
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-164
Location (Lat/Long WGS84)	27.725310 / -18.079082
Eruption name (rift) / ID	Monte Grande (NW) / 26
Material type	Tephra
Outcrop description	Fine lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈0.6m thick, with planar lamination. It is above a brown palaeosol of ≈0.6m thickness
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Hypohyaline to hypocrystalline
Specific textures	Juvenile fragments Type 1 with porphyritic texture, highly vesicular with glassy sideromelane groundmass. Minute type 2 juvenile fragments with aphyric texture, slightly vesicular with dark brown groundmass

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Cpx + Ol + Ox
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Ox + (Cpx)

Olivine
Occurs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 1.4mm; Subhedral to anhedral crystals, some of them with slightly to strongly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.

Clinopyroxene
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.0mm; Subhedral to anhedral crystals; Oscillatory zoning.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the glassy groundmass.

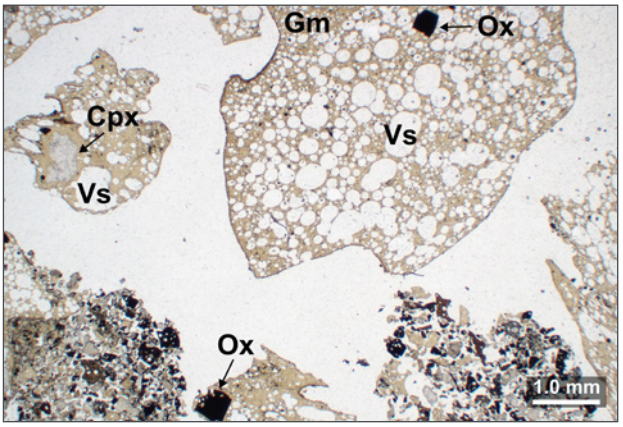
Plagioclase
Occurs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

Fe-Ti oxides
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.9mm; Subhedral crystals with disequilibrium texture.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Equidimensional euhedral to subhedral crystals in the glassy groundmass.

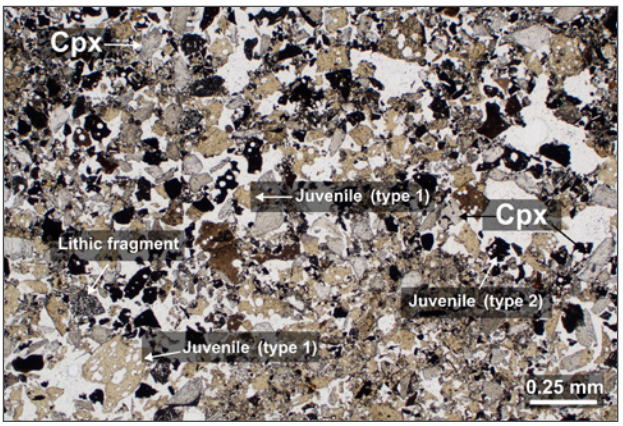
Glass
Light brown sideromelane glass corresponding to type 1 fragments.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

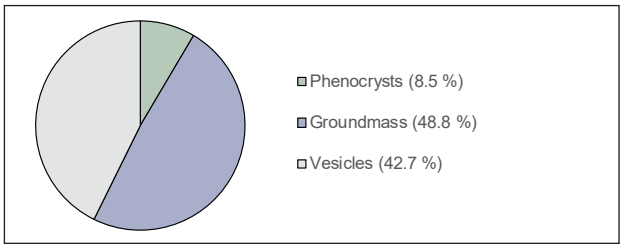
GENERAL VIEW (PPL)



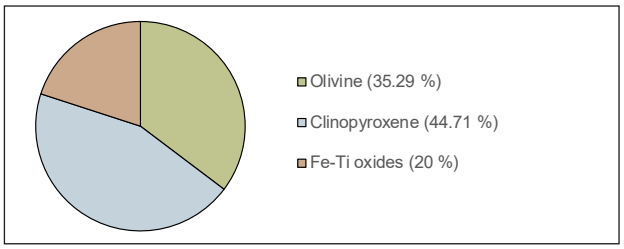
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

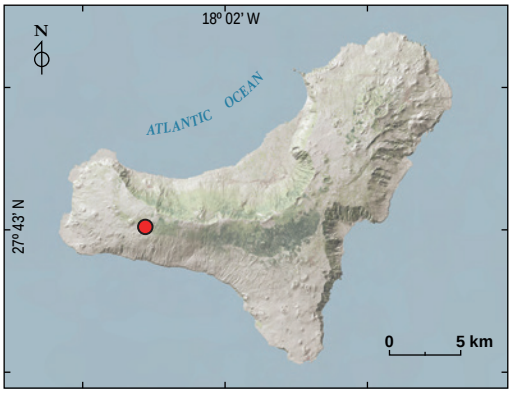


MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-165
Location (Lat/Long WGS84)	27.721766 / -18.099354
Eruption name (rift) / ID	Montaña de los Humilladeros (NW) / 40
Material type	Tephra
Outcrop description	Coarse lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈1.3m thic-kness. It is below a 0.7m thick, fine lapilli deposit with planar lamination
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Hypohyaline
Specific textures	Fragments Type 1 with sub-aphyric texture, highly vesicular with glassy sideromelane groundmass

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Ol + Cpx + Ox
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Ol + Cpx + (Ox) + (Ap)

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1.6mm; Subhedral to anhedral crystals; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Subhedral to anhedral crystals; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Subhedral crystals in the glassy groundmass, some of them with skeletal texture.

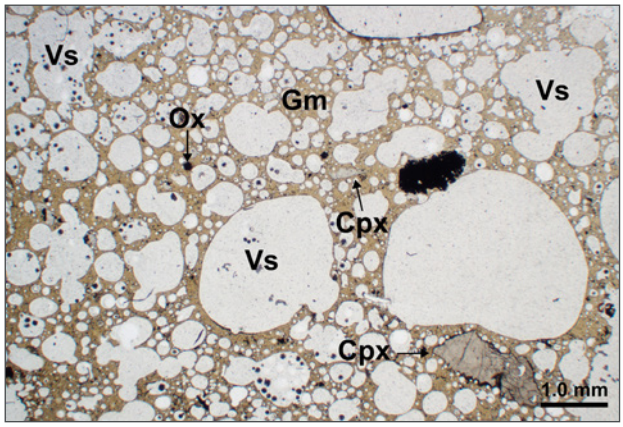
Clinopyroxene
Ocurrs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 2.0mm; Subhedral to anhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

Fe-Ti oxides
Ocurrs as macrocrysts, mesocrysts and groudmass phase.
Macrocrysts: Maximum size of 1.0mm; Subhedral crystals.
Mesocrysts: Maximum size of 0.12mm; Subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the glassy groundmass.

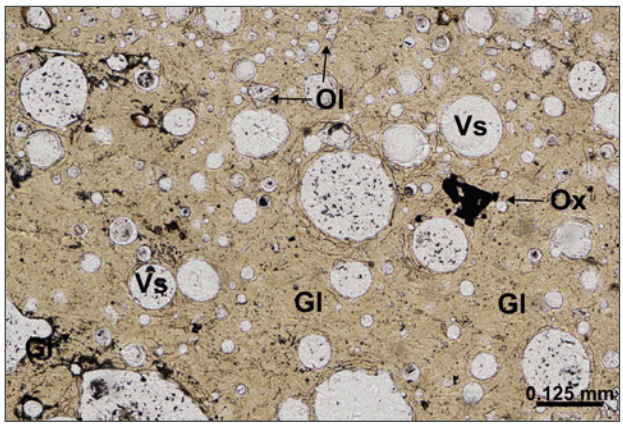
Glass
Light brown sideromelane glass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

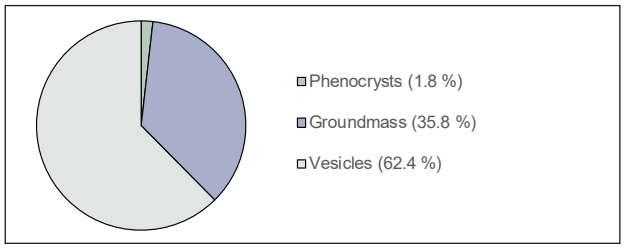
GENERAL VIEW (PPL)



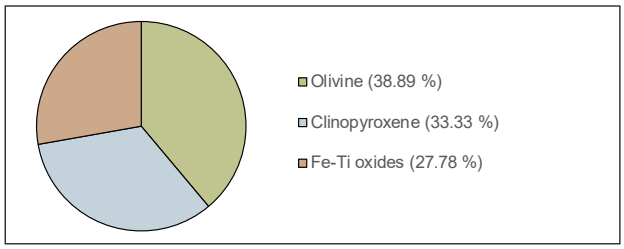
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE

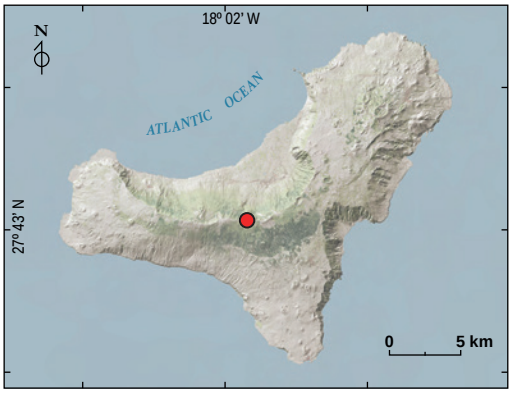


MINERAL ASSEMBLAGE



Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
Grant PGC2018-101027-B-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-170
Location (Lat/Long WGS84)	27.727381 / -18.026779
Eruption name (rift) / ID	Monumento al Campesino Herreño (S) / 13
Material type	Tephra
Outcrop description	Coarse to medium lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈0,4m thick. It is above a 0.2m thick, dark brown palaeosol
TAS Classification	Mugearite

TEXTURE

Degree of crystalinity	Hypohyaline
Specific textures	Fragments Type 1 with aphyric texture, highly vesicular with glassy sideromelane groundmass

MINERALOGY

Phenocryst assemblage	-
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Ox

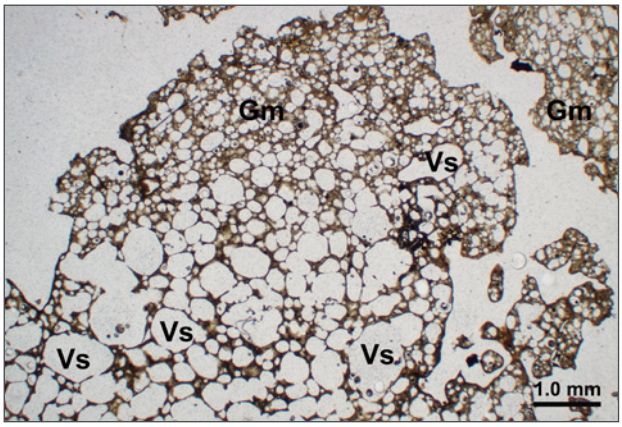
Plagioclase
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass, some of them with supercooling texture.

Fe-Ti oxides
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Equidimensional euhedral and needle-shaped crystals and minor glomerocrysts in the glassy groundmass.

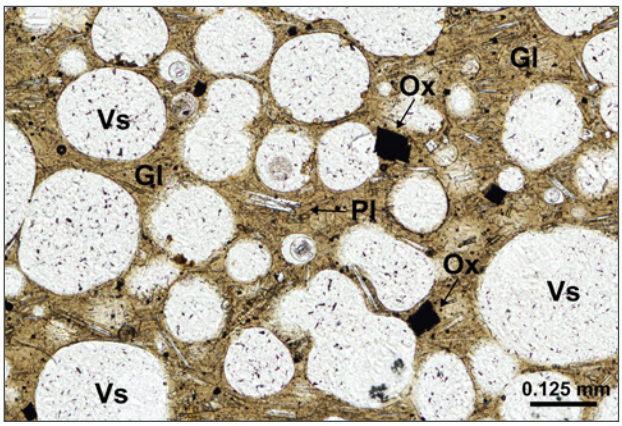
Glass
Light brown sideromelane glass.

Abbreviations
Pl: plagioclase; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

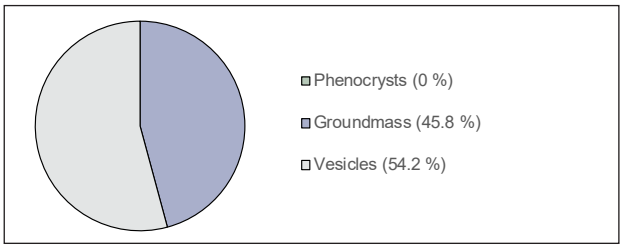
GENERAL VIEW (PPL)



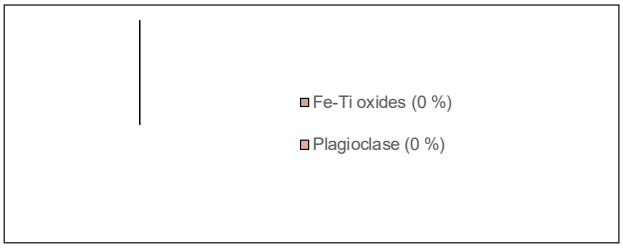
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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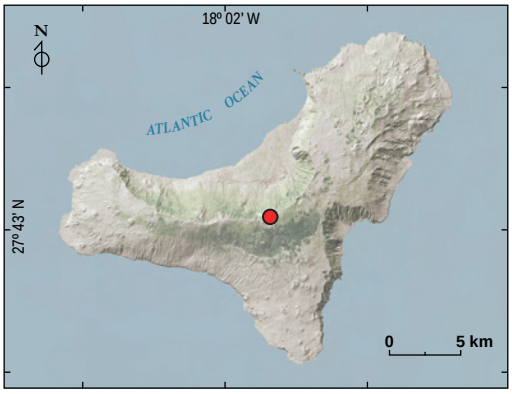
LOCATION MAP



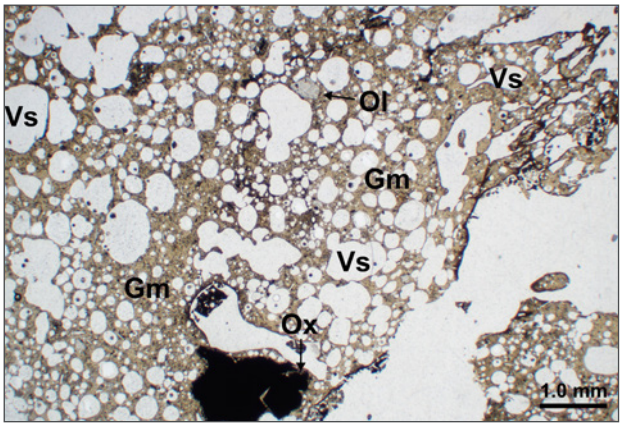
OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-171
Location (Lat/Long WGS84)	27.731414 / -18.008492
Eruption name (rift) / ID	Pico Tenerife (NE) / 21
Material type	Tephra
Outcrop description	Coarse lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈1.3m thickness, roughly planar lamination, and incipient weathering (brownish colour) in its upper ≈0.4m
TAS Classification	Basanite

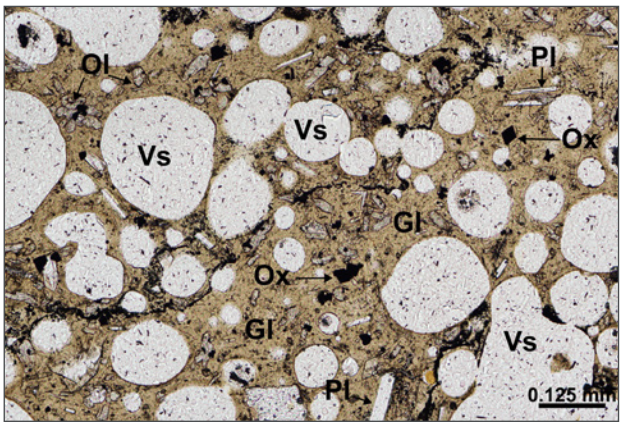
GENERAL VIEW (PPL)



TEXTURE

Degree of crystalinity	Hypohyaline
Specific textures	Fragments Type 1 with sub-aphyric texture, highly vesicular with glassy sideromelane groundmass

DETAILED VIEW (PPL)



MINERALOGY

Phenocryst assemblage	Fragments Type 1: Ol + Ox + Cpx + Pl
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Ol + Ox

Olivine
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 1mm; Subhedral crystals, some of them with slightly embayed rims; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals and minor glomerocrysts; some of them with slightly embayed rims.
Groundmass: Size below 0.1mm; Subhedral crystals and minor glomerocrysts in the glassy groundmass.

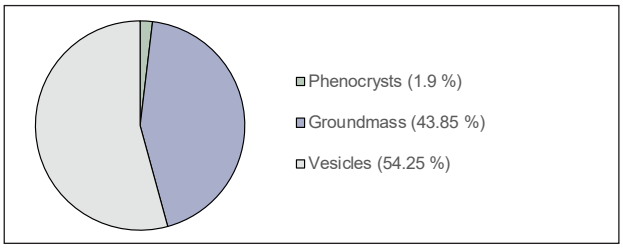
Clinopyroxene
Occurs as mesocrysts.
Mesocrysts: Maximum size of 0.3mm; Subhedral crystals.

Plagioclase
Occurs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.4mm; Euhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

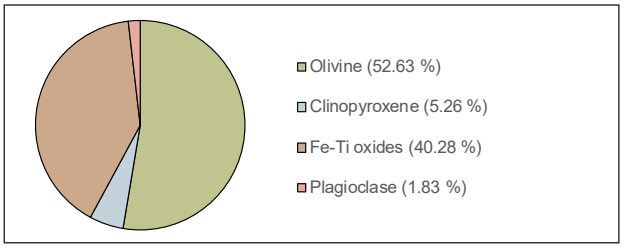
Fe-Ti oxides
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macorcrysts: Maximum size of 1.4mm; Euhedral to subhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals and glomerocrysts in the glassy groundmass.

Glass
Light brown sideromelane glass.

COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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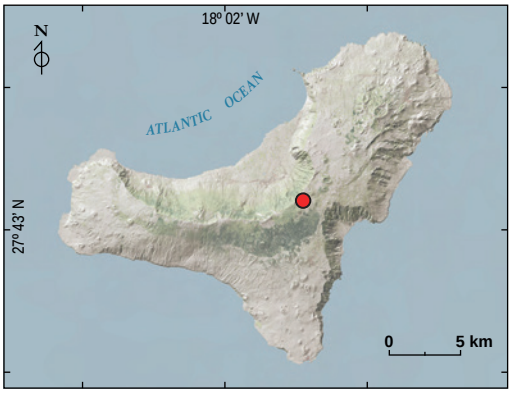
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-172
Location (Lat/Long WGS84)	27.741028 / -17.987133
Eruption name (rift) / ID	Hoya de Fireba (NE) / 20
Material type	Tephra
Outcrop description	Medium to fine lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈1.7m thick, with two interbedded thin (<5cm) pyroclastic ash layers of brownish colours
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Hypohyaline to hypocrystalline
Specific textures	Fragments Type 1 with sub-aphyric texture, highly vesicular with glassy sideromelane groundmass Fragments Type 2 with sub-aphyric texture, highly vesicular with dark groundmass

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Ol + Cpx + Ox Fragments Type 2: Ol + Cpx
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Cpx + Ox + Ol + (Ap) Fragments Type 2: Tachylitic Gl (?) + Cpx + Ox + Ol

Olivine
Ocurrs as macrocrysts, mesocrysts and groundmass phase in type 1 fragments.
Ocurrs as mesocrysts and groundmass phase in type 2 fragments.
Macrocrysts: Maximum size of 0.8mm; Euhedral to subhedral crystals; Fe-Ti oxides inclusions.
Mesocrysts: Maximum size of 0.32mm; Euhedral to anhedral crystals; Fe-Ti oxides inclusions.
Groundmass: Size below 0.1mm; Subhedral crystals in the glassy groundmass.

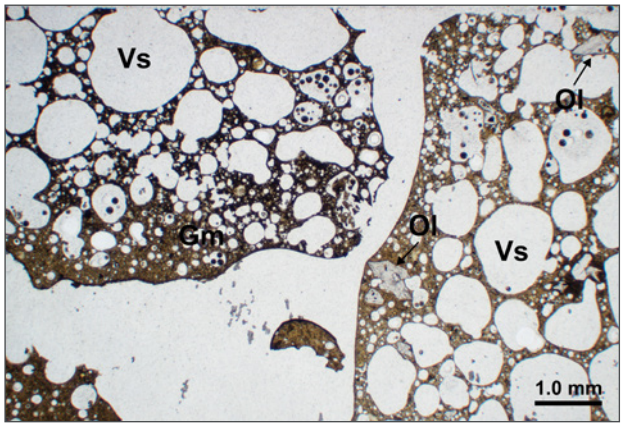
Clinopyroxene
Ocurrs as mesocrysts and groundmass phase in type 1 and 2 fragments.
Mesocrysts: Maximum size of 0.25mm; Euhedral to subhedral crystals and glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass.

Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase in type 1 fragments.
Ocurrs as groundmass phase in type 2 fragments.
Mesocrysts: Maximum size of 0.12mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the glassy groundmass.

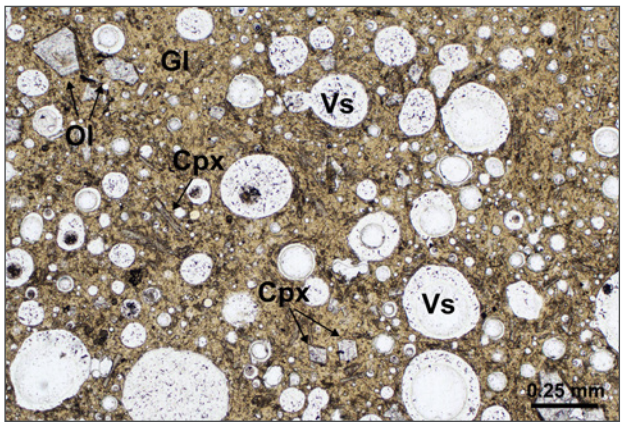
Glass
In type 1 fragments, light brown sideromelane glass is well represented.
In type 2 fragments, dark groundmass is probably associated with tachylitic glass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

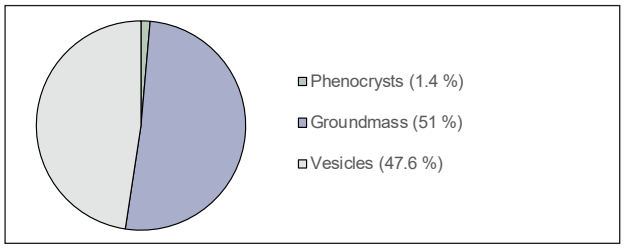
GENERAL VIEW (PPL)



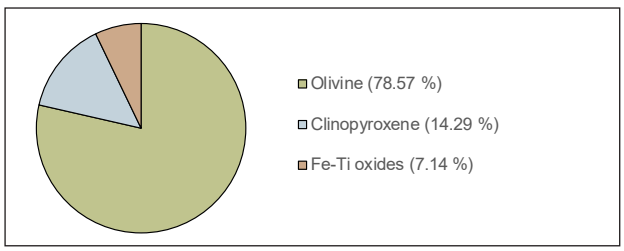
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



LAJIAL

Geochronology and petrogenesis of the Holocene volcanism of El Hierro, Canary Islands
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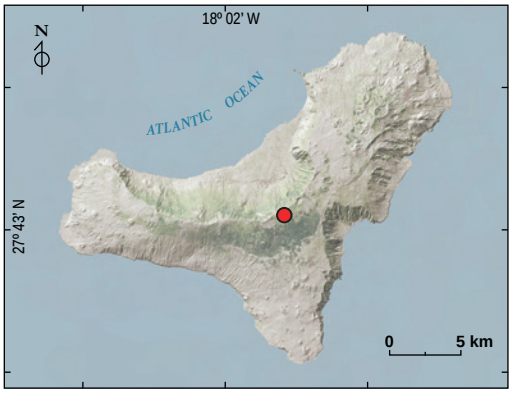
MINISTERIO DE CIENCIA E INNOVACIÓN
UNIÓN EUROPEA
FONDO EUROPEO DE DESARROLLO REGIONAL
AGENCIA ESTATAL DE INVESTIGACIÓN

LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-173
Location (Lat/Long WGS84)	27.731249 / -18.000772
Eruption name (rift) / ID	Pico de los Marrubios (NE) / 22
Material type	Tephra
Outcrop description	Medium to fine lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈2m thick, with last upper 20cm pedogenized
TAS Classification	Basanite

TEXTURE

Degree of crystalinity	Hypohyaline to hypocrystalline
Specific textures	Fragments Type 1 with sub-aphyric texture, highly vesicular with glassy sideromelane groundmass Fragments Type 2 with sub-aphyric texture, vesicular with dark groundmass

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Ol + Ox Fragments Type 2: Ol
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Cpx + Ox + Ol + (Pl) + (Ap) Type 2: Tachylitic Gl (?) + Ol + Ox + (Cpx)

Olivine
Ocurrs as mesocrysts and groundmass phase in type 1 and 2 fragments.
Mesocrysts: Maximum size of 0.45mm; Subhedral crystals, some of them with supercooling texture in type 1 fragments.
Mesocrysts: Maximum size of 0.35mm; Anhedral crystals in type 2 fragments.
Groundmass: Size below 0.1mm; Subhedral crystals in the glassy groundmass.

Clinopyroxene
Ocurrs as groundmass phase in type 1 and 2 fragments.
Groundmass: Size below 0.1mm; Euhedral crystals and glomerocrysts in the glassy groundmass.

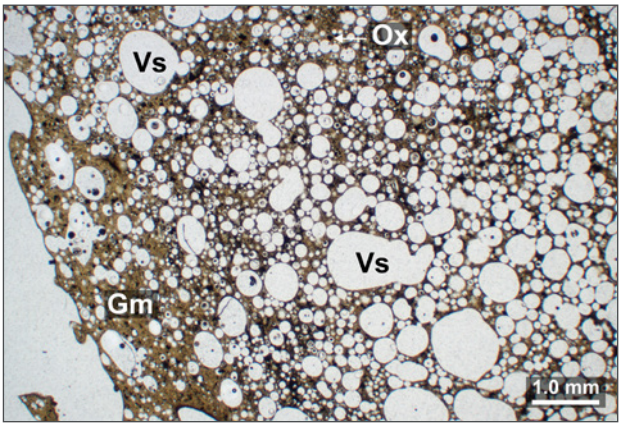
Plagioclase
Ocurrs as groundmass phase in type 1 fragments.
Groundmass: Size below 0.1mm; Minor euhedral to subhedral crystals in the glassy groundmass.

Fe-Ti oxides
Ocurrs as mesocrysts and groundmass phase in type 1 fragments.
Ocurrs as groundmass phase in type 2 fragments.
Mesocrysts: Maximum size of 0.2mm; Euhedral to subhedral crystals and minor glomerocrysts.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the glassy groundmass.

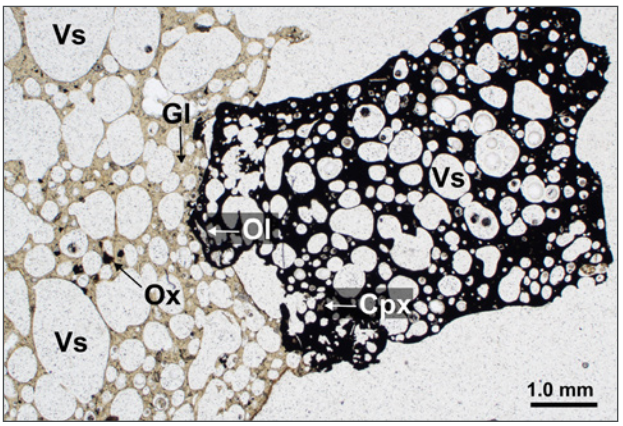
Glass
In type 1 fragments, light brown sideromelane glass is well represented.
In type 2 fragments, dark groundmass is probably associated with tachylitic glass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

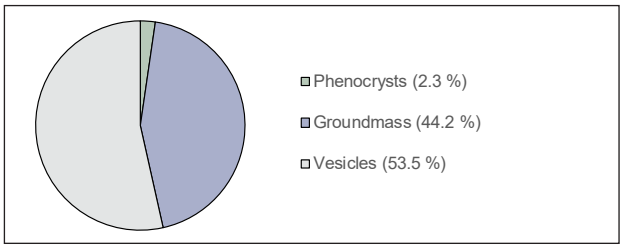
GENERAL VIEW 1 (PPL)



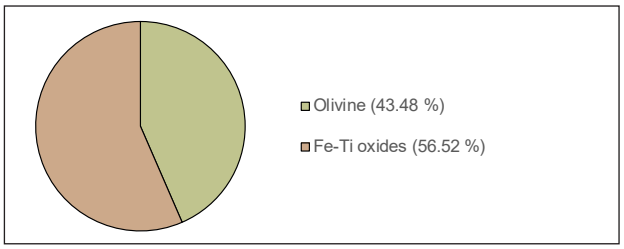
GENERAL VIEW 2 (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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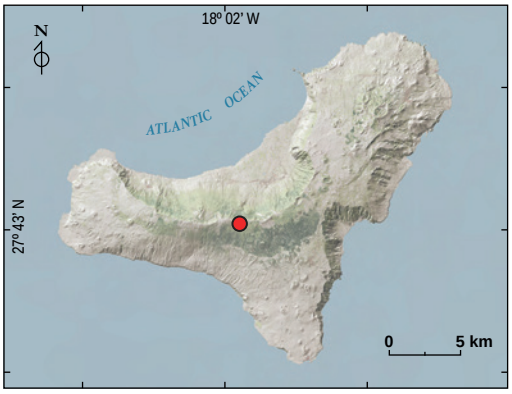
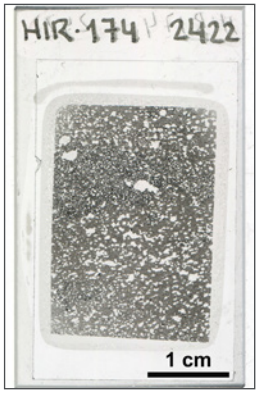
LOCATION MAP



OUTCROP

THIN SECTION SCAN



GENERAL INFORMATION

Sample name	HIR-174
Location (Lat/Long WGS84)	27.725135 / -18.032202
Eruption name (rift) / ID	Pino Verde (S) / 18
Material type	Tephra
Outcrop description	Coarse lapilli tephra (strombolian pyroclastic fall deposit), roughly planar lamination, black colour, >2m thick, with abundant interbedded volcanic bombs. The sample was taken in a volcanic bomb of 40 x 30 x 30cm
TAS Classification	Hawaiite

TEXTURE

Degree of crystalinity	Holocrystalline
Specific textures	Sub-aphyric, vesicular with pilotaxitic groundmass

MINERALOGY

Phenocryst assemblage	Ox + Pl + (Ol)
Groundmass assemblage	Pl + Ox + Ol + (Cpx)

Olivine
Occurs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.13mm; Minor euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

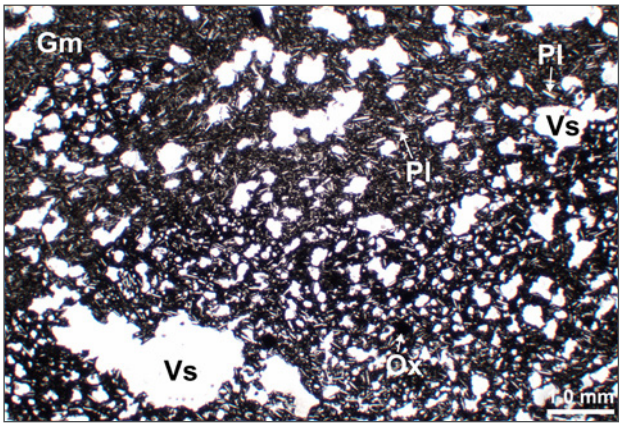
Clinopyroxene
Ocurrs as groundmass phase.
Groundmass: Size below 0.1mm; Minor subhedral crystals in the groundmass.

Plagioclase
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.8mm; Euhedral to subhedral crystals and minor glomerocrysts.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals and minor glomerocrysts; Oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

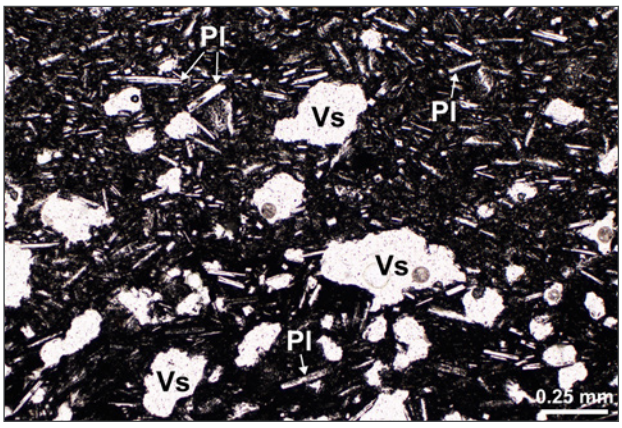
Fe-Ti oxides
Occurs as mesocrysts and groundmass phase.
Mesocrysts: Maximum size of 0.37mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the groundmass.

Abbreviations
Ol: olivine; Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

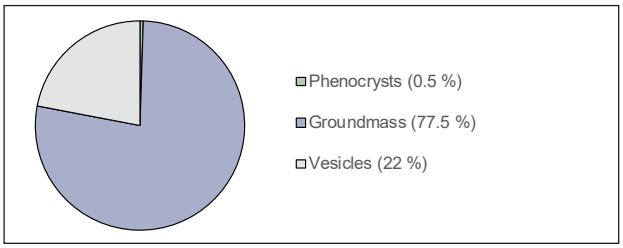
GENERAL VIEW (PPL)



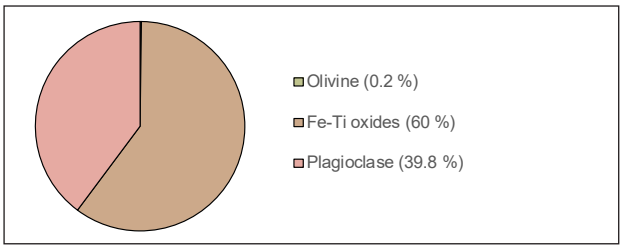
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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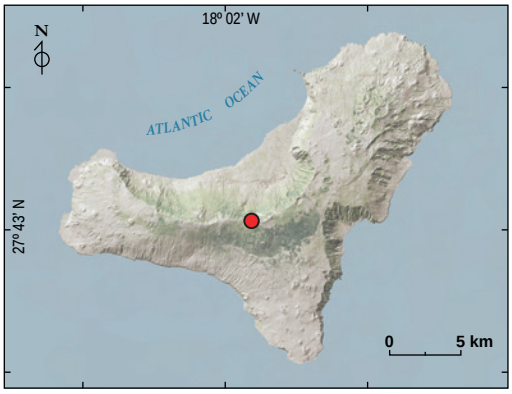
LOCATION MAP



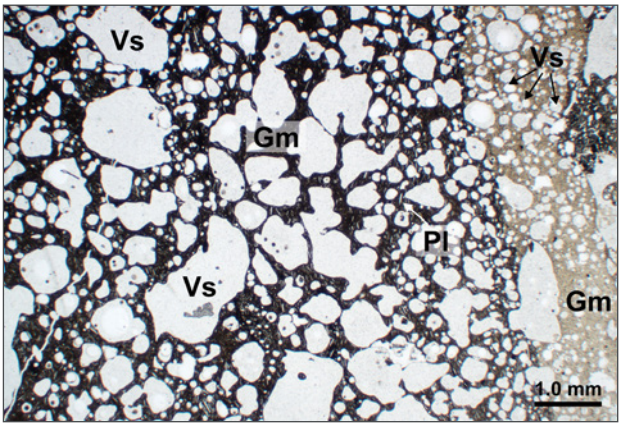
OUTCROP

THIN SECTION SCAN

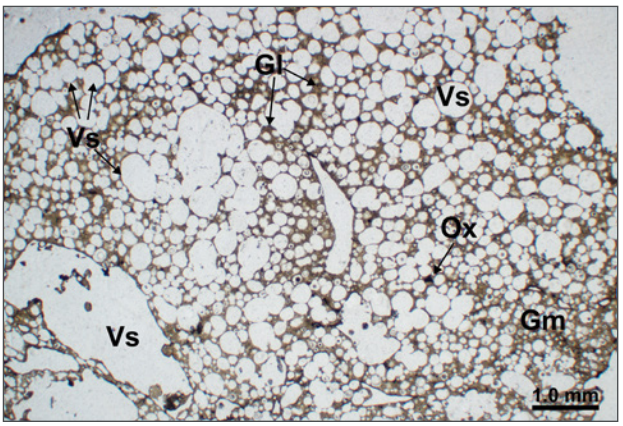
GENERAL INFORMATION

Sample name	HIR-175
Location (Lat/Long WGS84)	27.726978 / -18.023909
Eruption name (rift) / ID	Cruz de los Reyes (S) / 34
Material type	Tephra
Outcrop description	Medium to coarse lapilli tephra (strombolian pyroclastic fall deposit), black in colour, ≈2.2m thick, above a ≈0.2m thick brownish paleosol, and below a sequence of ≈1.9m thick of medium to fine lapilli tephra, black to brown and with marked parallel lamination
TAS Classification	Not determined

GENERAL VIEW 1 (PPL)



GENERAL VIEW 2 (PPL)



TEXTURE

Degree of crystalinity	Hypohyaline to hypocrystalline
Specific textures	Fragments Type 1 fragments with aphyric texture, highly vesicular with glassy sideromelane groundmass Fragments Type 3 fragments with aphyric texture, highly vesicular with dark-brown groundmass

MINERALOGY

Phenocryst assemblage	-
Groundmass assemblage	Fragments Type 1: Sideromelane Gl + Pl + Ox + Bt Fragments Type 3: Pl + Ox + Bt + (Gl)

Plagioclase
Ocurrs as groundmass phase in type 1 and 3 fragments.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass; Supercooling texture in type 1 fragments.

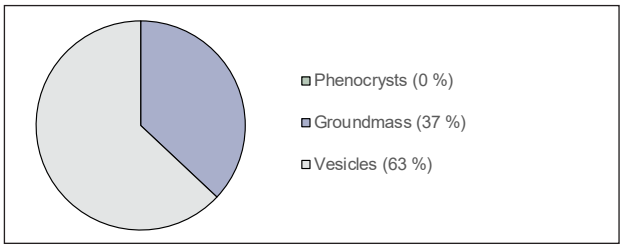
Fe-Ti oxides
Ocurrs as groundmass phase in type 1 and 3 fragments.
Groundmass: Size below 0.1mm; Equidimensional euhedral and needle-shaped crystals in type 1 fragments.
Groundmass: Size below 0.1mm; Equidimensional euhedral crystals in type 3 fragments.

Biotite
Ocurrs as groundmass phase in type 1 and 3 fragments.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

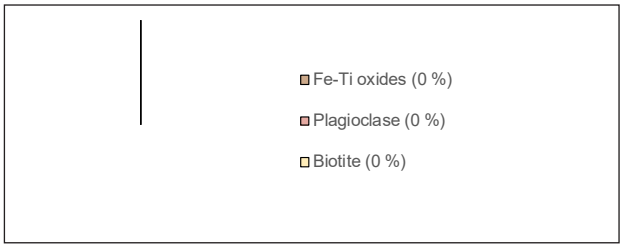
Glass
Light brown sideromelane glass corresponding to type 1 fragments.

Abbreviations
Pl: plagioclase; Ox: Fe-Ti oxides; Bt: biotite; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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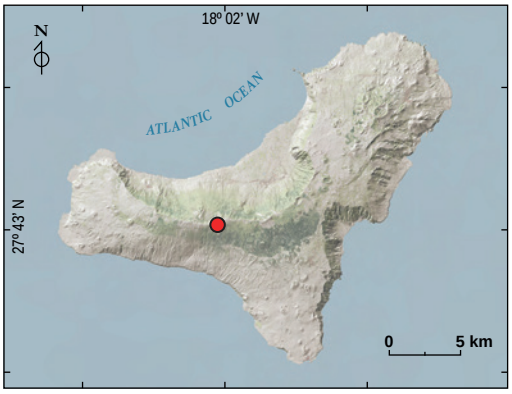
LOCATION MAP



OUTCROP

THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-177
Location (Lat/Long WGS84)	27.724508 / -18.047812
Eruption name (rift) / ID	Malpaso 1 (NW) / 37
Material type	Tephra
Outcrop description	Ash tephra (pyroclastic surge deposit), white colour, ≈0.3m thick, planar and cross laminations, with a bottom layer of angular white pumice. This sequence is deposited above a ≈0.2m thick, brownish paleosol and below a ≈1.2m thick sequence of medium to coarse lapilli tephra (strombolian pyroclastic fall deposit), black in colour, with planar lamination
TAS Classification	Trachyte

TEXTURE

Degree of crystalinity	Hypocrystalline to hypohyaline
Specific textures	Fragments Type 1: Sub-aphyric, highly vesicular with colourless groundmass Fragments Type 2: Porphyritic, heterogeneous and caothic with crystals and lithic fragments

MINERALOGY

Phenocryst assemblage	Fragments Type 1: Pl + Am + Cpx + Ox Fragments Type 2: Pl + Am + Cpx + Ol + Ti + Ox
Groundmass assemblage	Fragments Type 1: Pl + Ox + colourless Gl

Clinopyroxene
Occurs as macrocrysts and mesocrysts in fragment 1.
Occurs as mesocrysts in fragment 2.
Macrocrysts: Maximum size of 0.6mm; Euhedral to subhedral crystals, some of them forming glomerporphyritic texture with Fe-Ti oxides and Pl.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.

Plagioclase
Occurs as macrocrysts, mesocrysts and groundmass phase in fragment 1.
Occurs as mesocrysts and groundmass phase in fragment 2.
Macrocrysts: Maximum size of 1.3mm; Euhedral to subhedral crystals; Oscillatory zoning.
Mesocrysts: Maximum size of 0.32mm; Euhedral to subhedral crystals, some of the latter with slightly to strongly embayed rims; Oscillatory zoning.
Groundmass: Size below 0.1mm; Euhedral crystals in the groundmass.

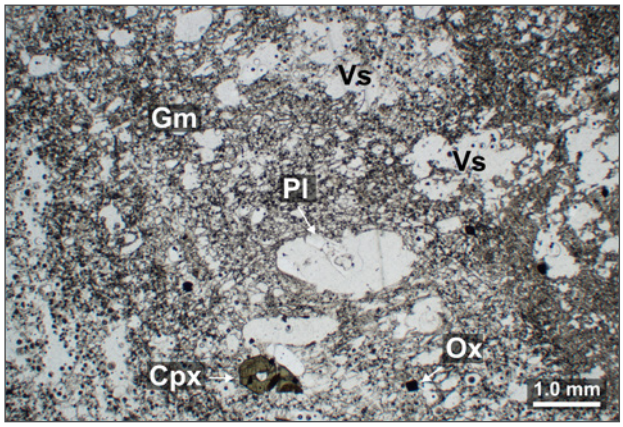
Fe-Ti oxides
Occurs as mesocrysts and groundmass phase in fragment 1 and 2.
Mesocrysts: Maximum size of 0.5mm; Euhedral to subhedral crystals.
Groundmass: Size below 0.1mm; Subhedral crystals in the groundmass.

Amphibole
Ocurrs as macrocrysts and mesocrysts in fragment 1.
Ocurrs as mesocrysts in fragment 2.
Macrocrysts: Maximum size of 1.36mm; Euhedral to subhedral crystals some partly to totally oxidized.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals partly oxidized.

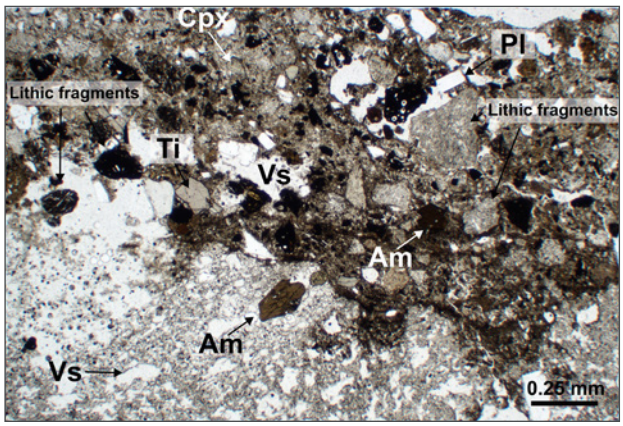
Glass
Interstitial colourless glass in fragment 1.

Abbreviations
Cpx: clinopyroxene; Pl: plagioclase; Ox: Fe-Ti oxides; Am: amphibole; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

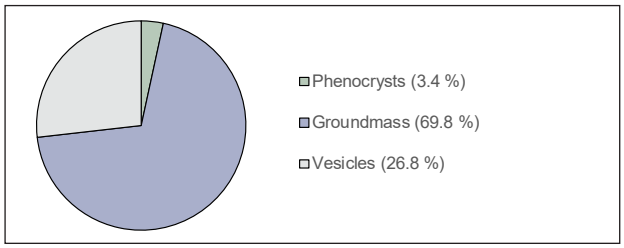
GENERAL VIEW (PPL)



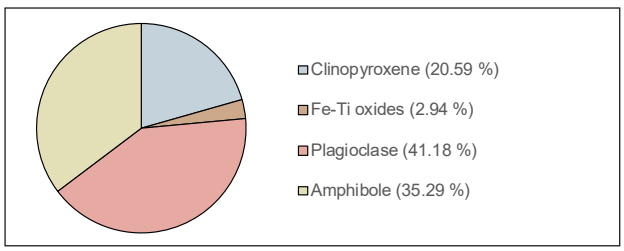
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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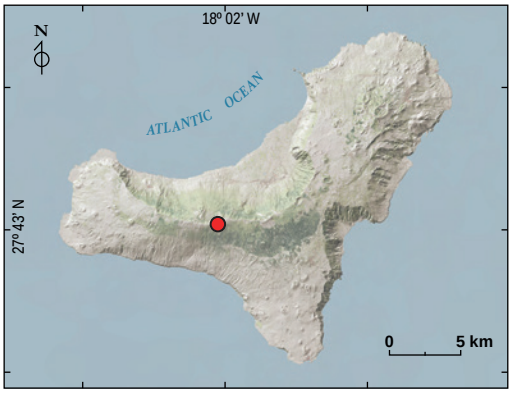
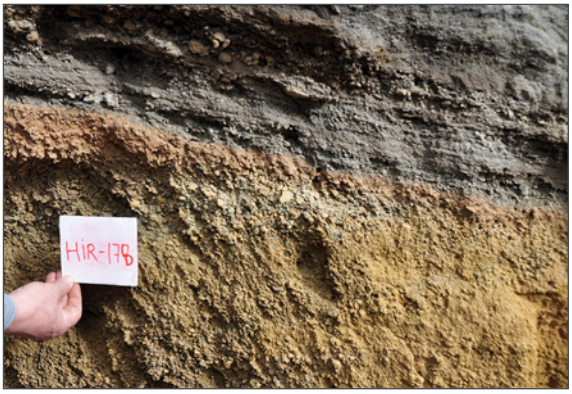
LOCATION MAP



OUTCROP



THIN SECTION SCAN

GENERAL INFORMATION

Sample name	HIR-178
Location (Lat/Long WGS84)	27.724508 / -18.047812
Eruption name (rift) / ID	Malpaso 2 (NW) / 39
Material type	Tephra
Outcrop description	Coarse lapilli tephra (pyroclastic fall deposit), ≈10cm thick, composed of angular white pumice and angular grey lithics. This layer is located under the sequence of sample HIR-177
TAS Classification	Trachyte

TEXTURE

Degree of crystalinity	Hypocrystalline to hypohyaline
Specific textures	Sub-aphyric, highly vesicular with glassy sidero-melane groundmass

MINERALOGY

Phenocryst assemblage	Pl + Am + Ol
Groundmass assemblage	Pl + Ox + colourless Gl

Olivine
Occurs as mesocrysts.
Mesocrysts: Maximum size of 0.4mm; Anhedral crystals.

Plagioclase
Occurs as macrocrysts, mesocrysts and groundmass phase.
Macrocrysts: Maximum size of 0.69mm; Subhedral crystals.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals.
Groundmass: Size below 0.1mm; Euhedral crystals in the glassy groundmass, some of them with supercooling texture.

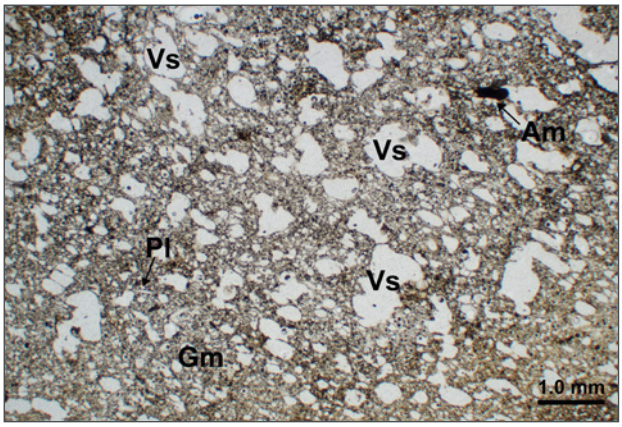
Fe-Ti oxides
Occurs as groundmass phase.
Groundmass: Size below 0.1mm; Euhedral to subhedral crystals in the glassy groundmass.

Amphibole
Occurs as macrocrysts and mesocrysts.
Macrocrysts: Maximum size of 0.6mm; Subhedral to anhedral crystals partly oxidized.
Mesocrysts: Maximum size of 0.5mm; Subhedral crystals partly oxidized.

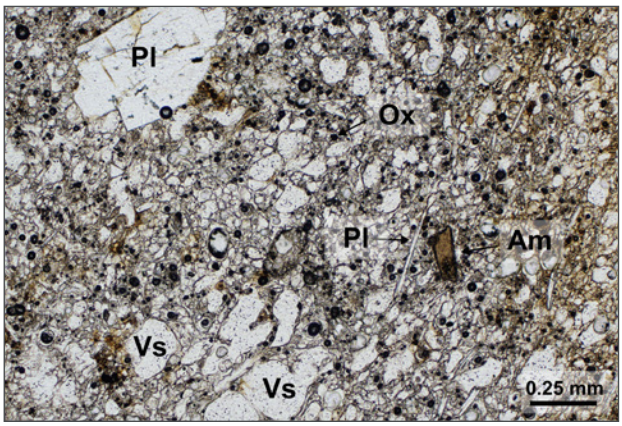
Glass
Interstitial colourless glass.

Abbreviations
Ol: olivine; Pl: plagioclase; Ox: Fe-Ti oxides; Am: amphibole; Gl: glass; Gm: groundmass; Vs: vesicle; PPL: Plane Polarized Light.

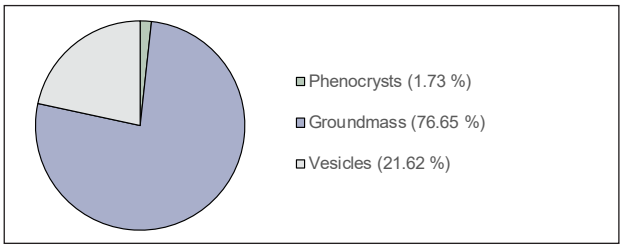
GENERAL VIEW (PPL)



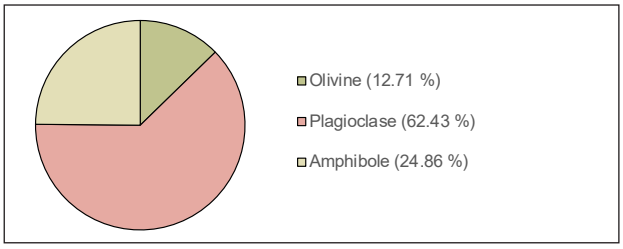
DETAILED VIEW (PPL)



COMPONENT ASSEMBLAGE



MINERAL ASSEMBLAGE



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Acknowledgments

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