## Sample ID and provenance

**Sample ID:** SP59_Jor

**Lithology:** Chert

**Collection:** LusoLit

**Outcrop:** Jordana

**Unit/facies**: Upper Jurassic

**Thinsection:** Yes

## Macroscopic description

- COLOR

Color distribution is Mix diffuse. Main colors are gray (2.5Y 6/1 and 10YR 5/1) and light brownish gray (10YR 6/2).

- FABRIC

The sample shows distinct facies with distinct characteristics: 1) chert areas with Shiny luster, Sub-translucent, Smooth feel and Fine grain; 2) chert areas with Dull luster, Opaque, Semi-smooth feel and Fine grain. The structure is Uneven with a Gradual variation. The patterns are Spots, which are: 1) Broad mottling; 2) Spotted; 3) Speckling. The spots occupy 50-99% of the sample and have an Uneven distribution.

- INCLUSIONS AND FOSSIL CONTENT

Oxides are present as concentrations or large rectangular grains. Fossil content is very frequent, of ovoid/circular or line shapes. The fossils seem to be all different, white, yellow or greenish. The fossils do not seem to have structure that allows their classification. There may be possible sponge spicules (longitudinal) in concentrations. The cortex area is filled with small, silvery and shiny minerals, possibly shale.

- CORTEX

The nodules are imbued in the encasing rock without an alteration cortex. The transition between the chert and the encasing rock is Gradual, with the outer edges of the chert showing variable levels of chertification. The nodules are irregular shaped but somewhat oval, and are medium-small sized. When tested

with dilute hydrochloric acid (HCL 10%), the reaction was Strong. The parent rock may be a Limestone.

- QUALITY

  The fracture is Conchoidal and there are Fractures and Cleavage plains. The knapping quality is Medium.

- OBSERVATION

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# Outcrop description

- OUTCROP CHARACTERISTICS

  **Type of outcrop:** Primary

  **Visibility**: Reasonable

  **Accessibility:** Moderate

  **State of site:** Medium

- CHERT NODULES/BEDS DESCRIPTION

  **Type of chert nodule:** Nodule

  **Sample variability:** Homogeneous

  **Frequency:** Abundant

  **Nodule description:** Irregular, around 3 to 5cm wide

- SHORT DESCRIPTION

  The outcrop is located on the bed of a dry river. The nodules are abundant and can be found on the outcrops from the top to the bottom of the sides of the river, some with moderate access. The nodules are irregular and small, with the largest nodules identified being 5cm. Some boulders are displaced and moved down by gravity, while some are still *in situ*.

# Petrography analysis form

❖ TEXTURAL COMPOSITION

**Texture:** Packstone

**Microstructure:** Massive

❖ COMPOSITION

| ORTHOCHEM | Type | % | Description |
|---|---|---|---|
| MiC quartz (gr) | SE | 88 | - |
| Chalcedony (fb) | SE | 1 | Replacing fossils in the chert. |
| MG quartz (gr) | SE | 1 | Replacing fossils or as loose grains in the parent rock and cortex area. |
| ? | - | 10 | Composing the parent rock. |
| Muscovite (?) | AC | <1 | Grain in the sample and within a fossil replacement. |

| ALLOCHEM | Freq | Description |
|---|---|---|
| Oxide grains | Common | In the chert but mostly concentrated in the parent rock and cortex area. |
| Oxide patina | Common | In the chert but mostly concentrated in the parent rock and cortex area. |
| Opaques | Very frequent | Present in all of the chert area. |

| BIOCLASTS | Freq | Description |
|---|---|---|
| Unidentifiable fossils (ghosts) | Very frequent | Completely replaced by chalcedony and quartz. |
| Sponge spicules (?) | Common | Identified due to the shape, but are poorly preserved. At least one of the spicules seems to be a monaxone megasclere spicule. |
| Ostracod (?) | Rare | Possible ostracod shell, replaced by chalcedony but the several generations of chalcedony preserved some of the structure. |
| Echinoderm (?) | Rare | Possible echinoderm identified through striations on a replaced fossil (SP59_Jor_003). |
| Gastropod (?) | Rare | Identified due to the particular shape and arrangement of oxide concentrations although the attribution is uncertain. |

- OTHER TEXTURAL CHARACTERISTICS

**Total porosity (%):** 1

**Porosity type:** Vuggy

**Other sedimentary structures:** -

## Observations

- There is an alteration to the chert closer to the parent rock, which makes up the cortex.
- There are alterations in the grain, concentration of oxides and porosity.

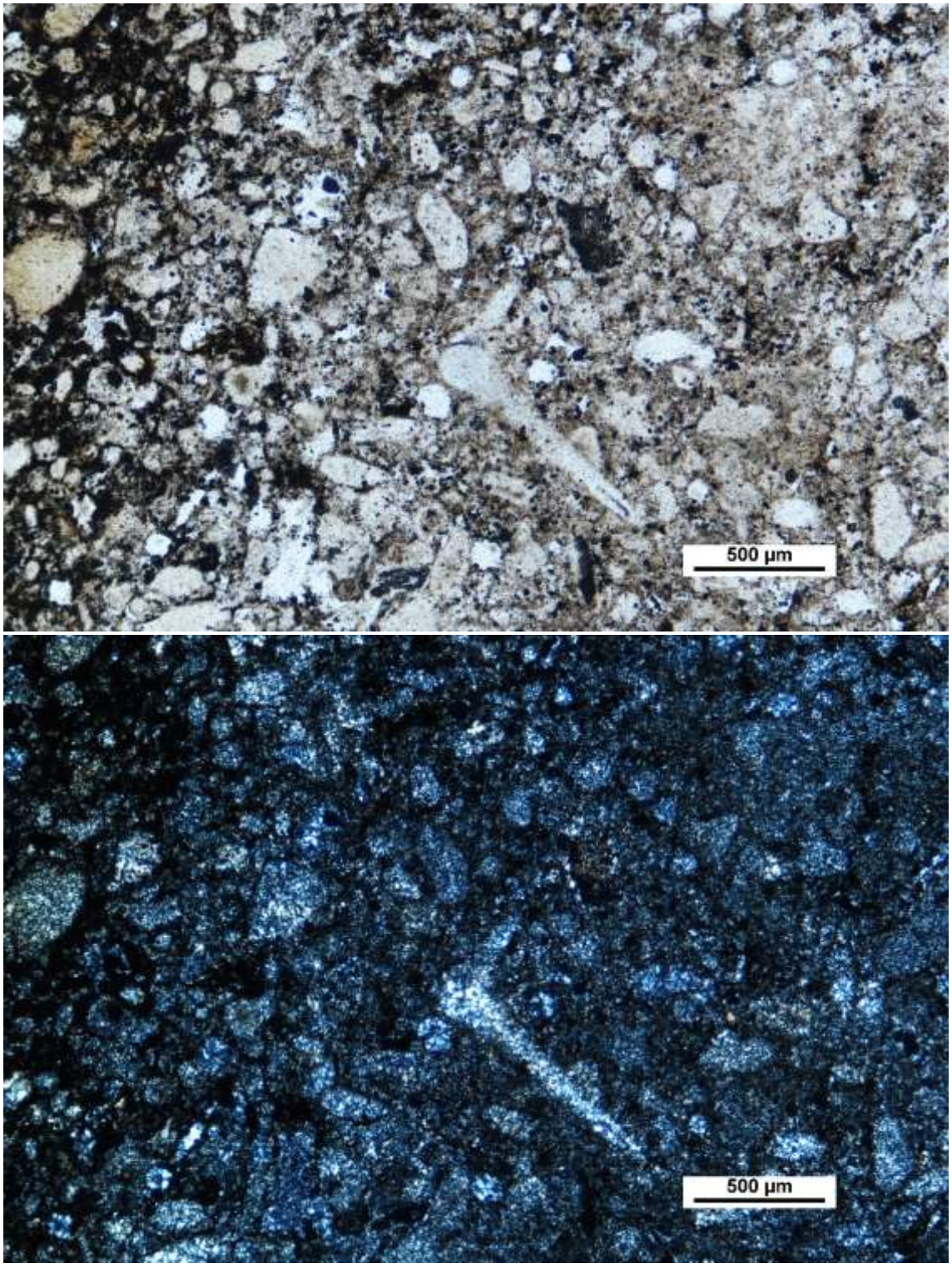
## Analysis information

- **ANALYST:** JB
- **DATE:** 06.07.2022
- **EQUIPMENT:** Nikon DS-Ri2

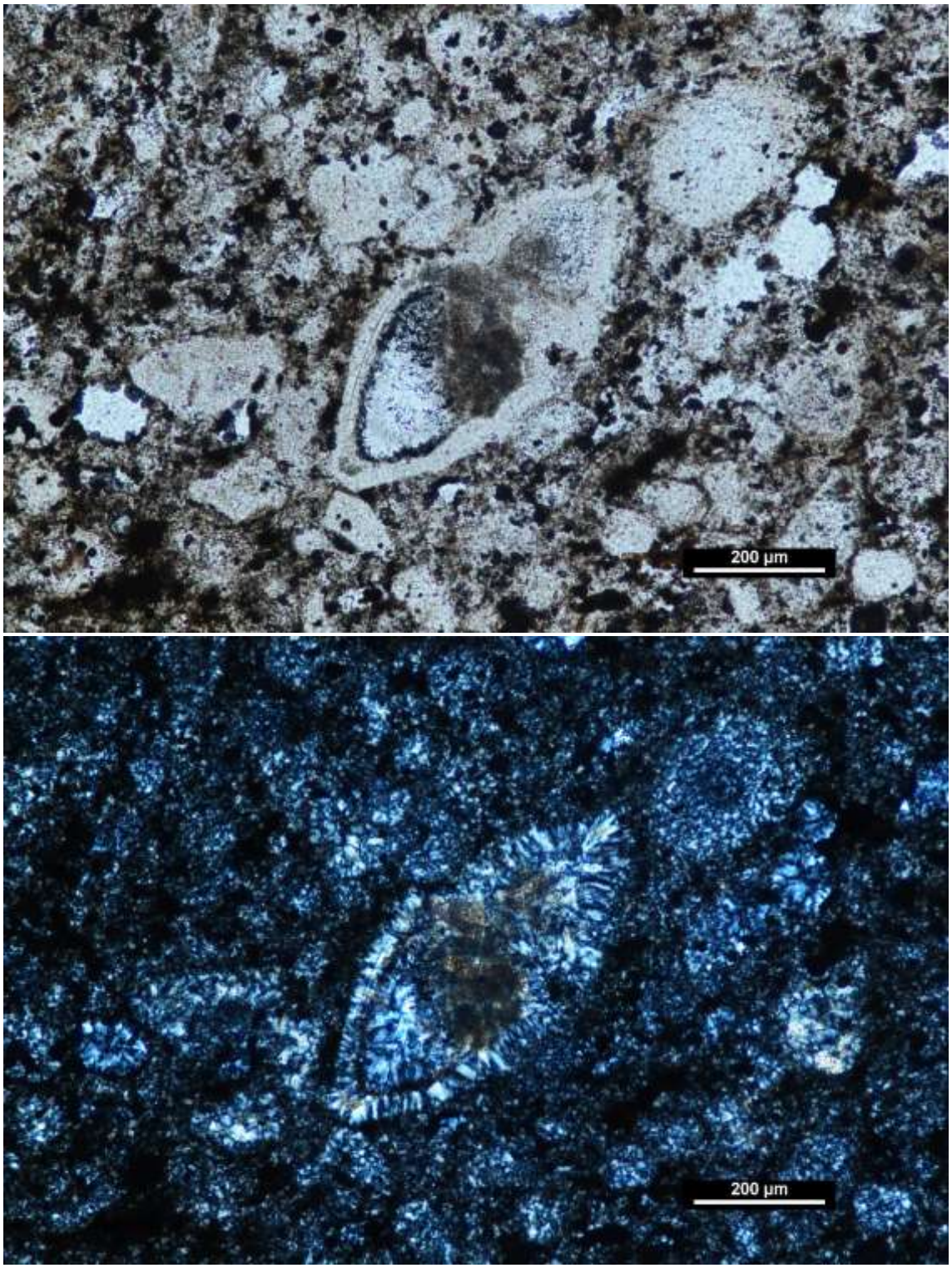
## Photos

| Photo ID | Aug. | Description |
|---|---|---|
| SP59_001 | 4x | General view of the sample with several ghost fossils and concentration of oxide patina. A monaxone megasclere spicule can be seen at the center. |
| SP59_002 | 10x | Detail of a fossil ghost replaced by a 1st generation of chalcedony on the outer edges, a concentration of oxides and a 2nd generation of chalcedony in the interior. The fossil may be an ostracod. |
| SP59_003 | 4x | General view of the contact between chert (right) and dolomite (left). The fossils on the chert are all unidentifiable ghosts, although there is a striation which might belong to an echinoderm. |
| SP59_004 | 4x | General view of several fossils ghosts and a fracture in the chert. Although most are unidentifiable, there may be a sponge spicule, a possible ostracod and a possible gastropod. |
| SP59_005 | 10x | Detail of an unidentifiable fossil with a 1st generation of chalcedony (outer edges) and a second generation of quartz with possibly muscovite. |

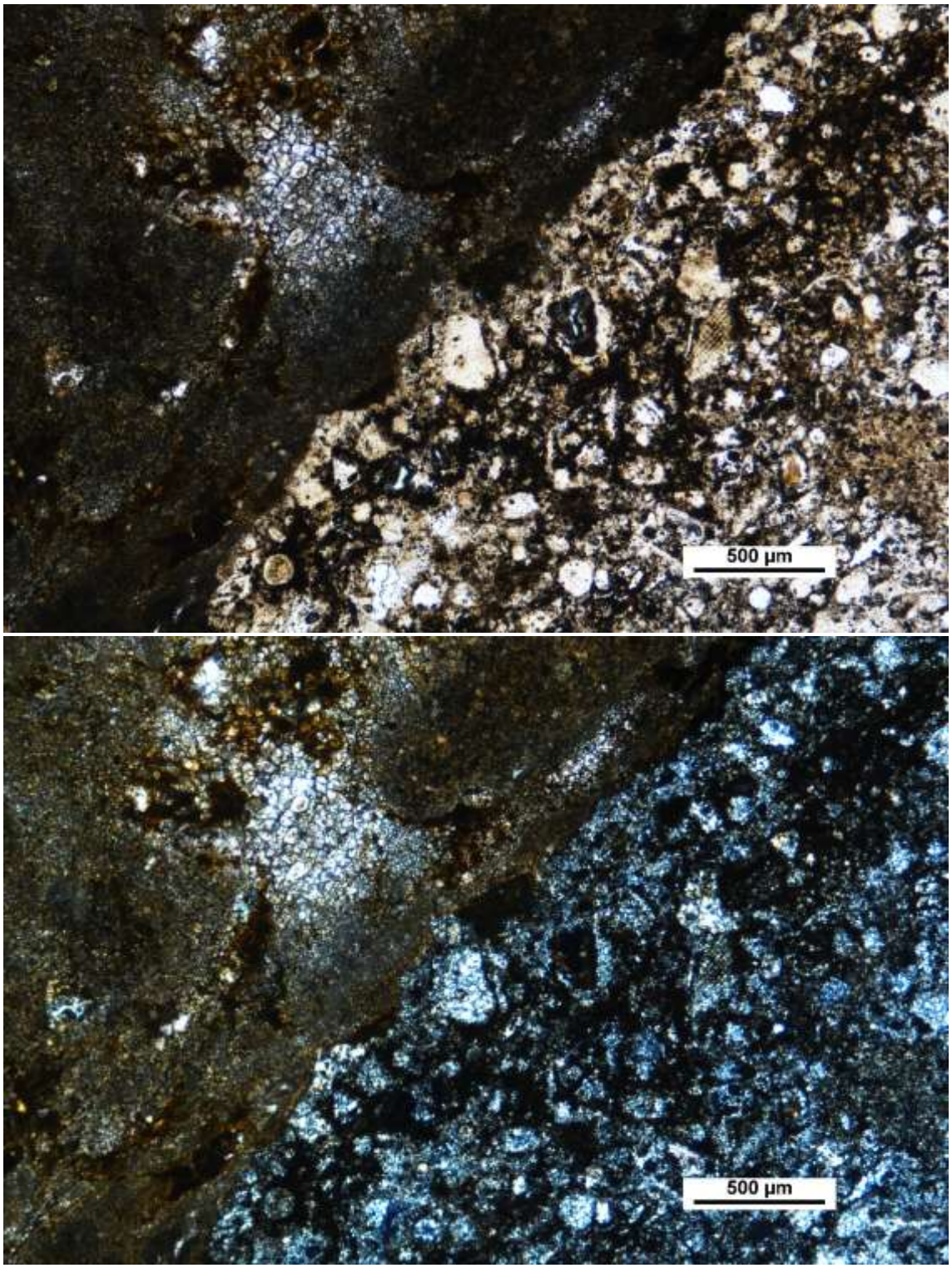
Petrography photos



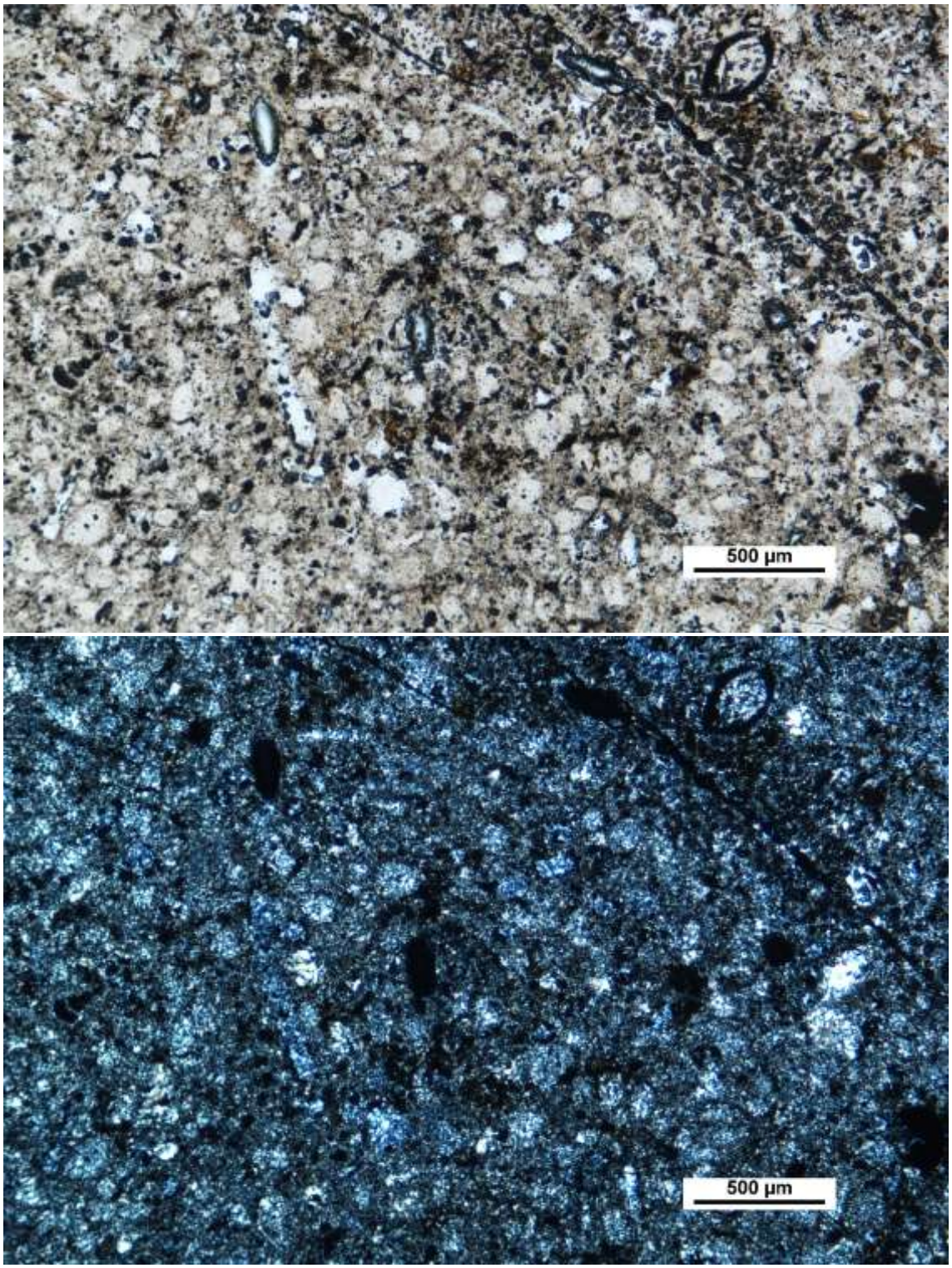

SP59_Jor_001 (PPL and XPL)




SP59_Jor_002 (PPL and XPL)



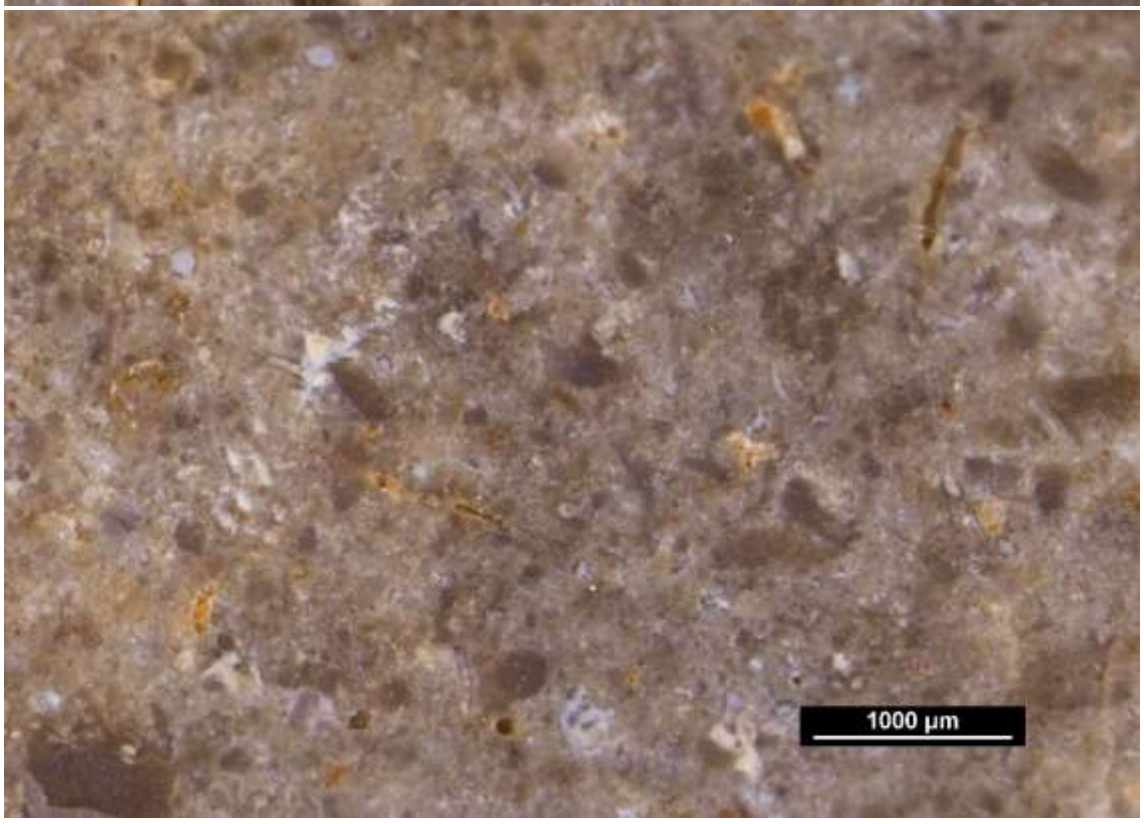

SP59_Jor_003 (PPL and XPL)



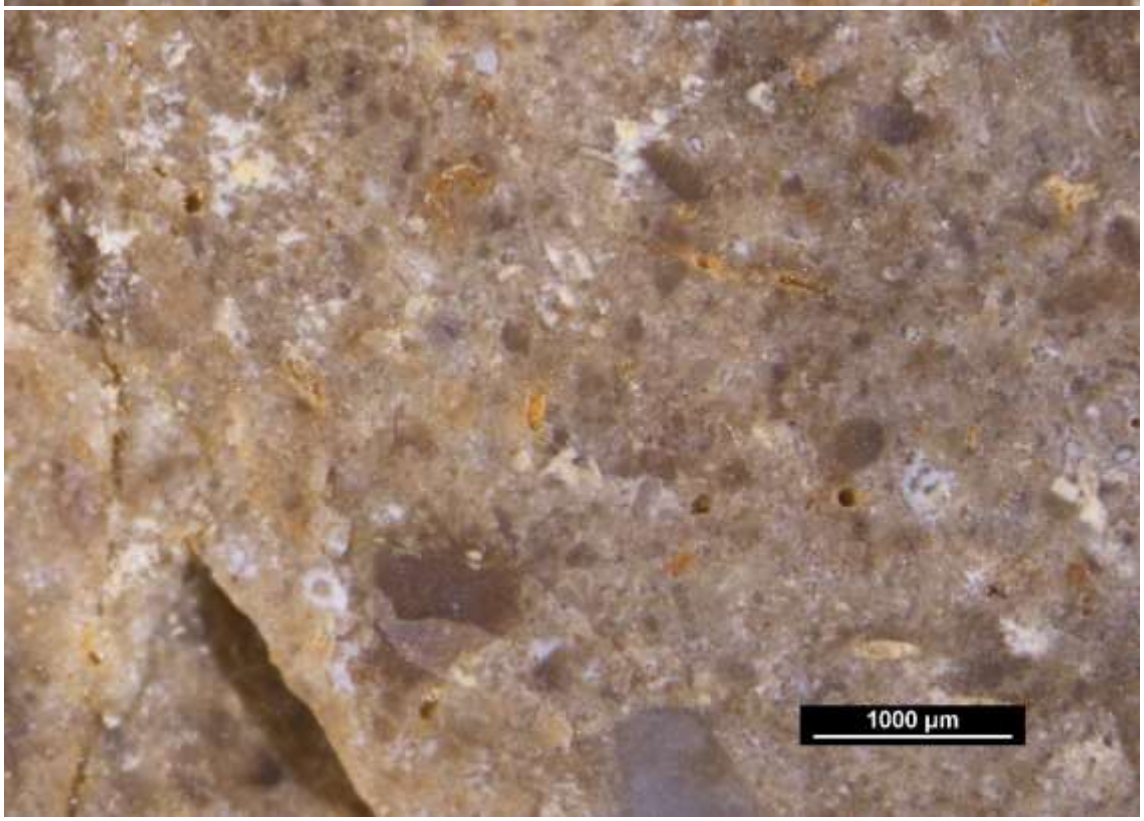

SP59_Jor_004 (PPL and XPL)

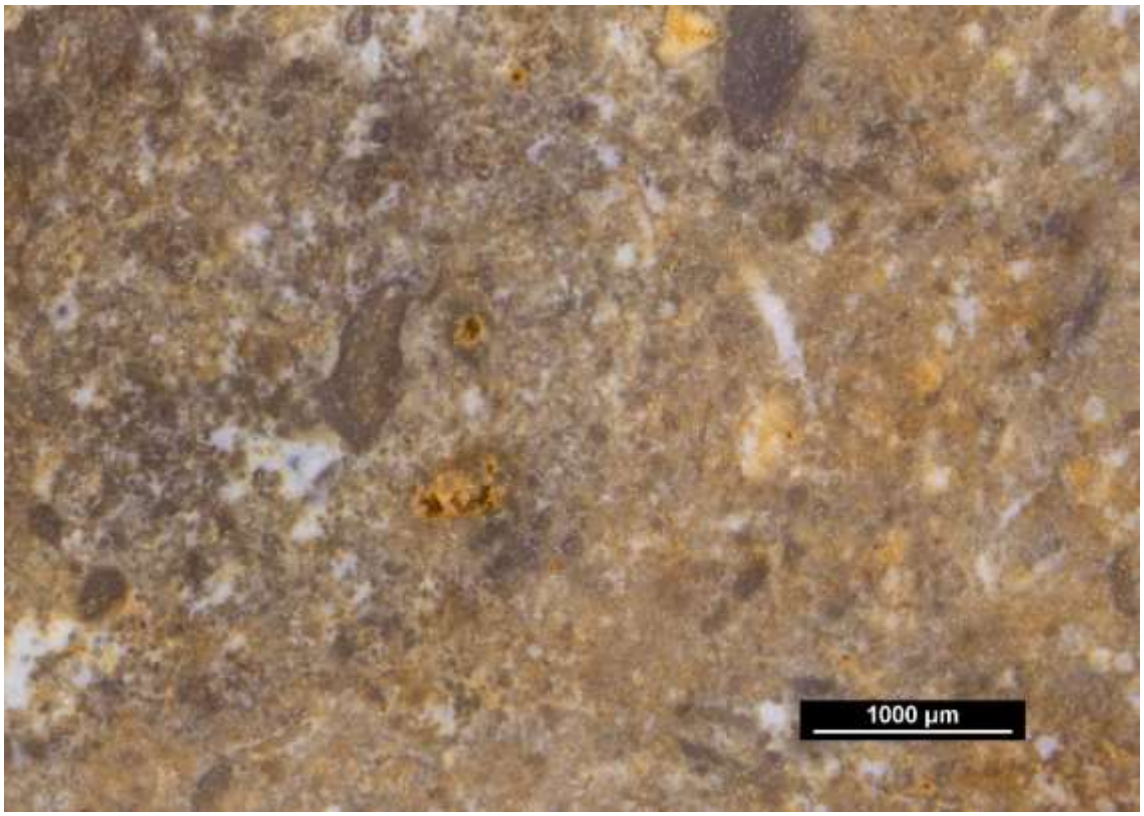

SP59_Jor_005 (PPL and XPL)

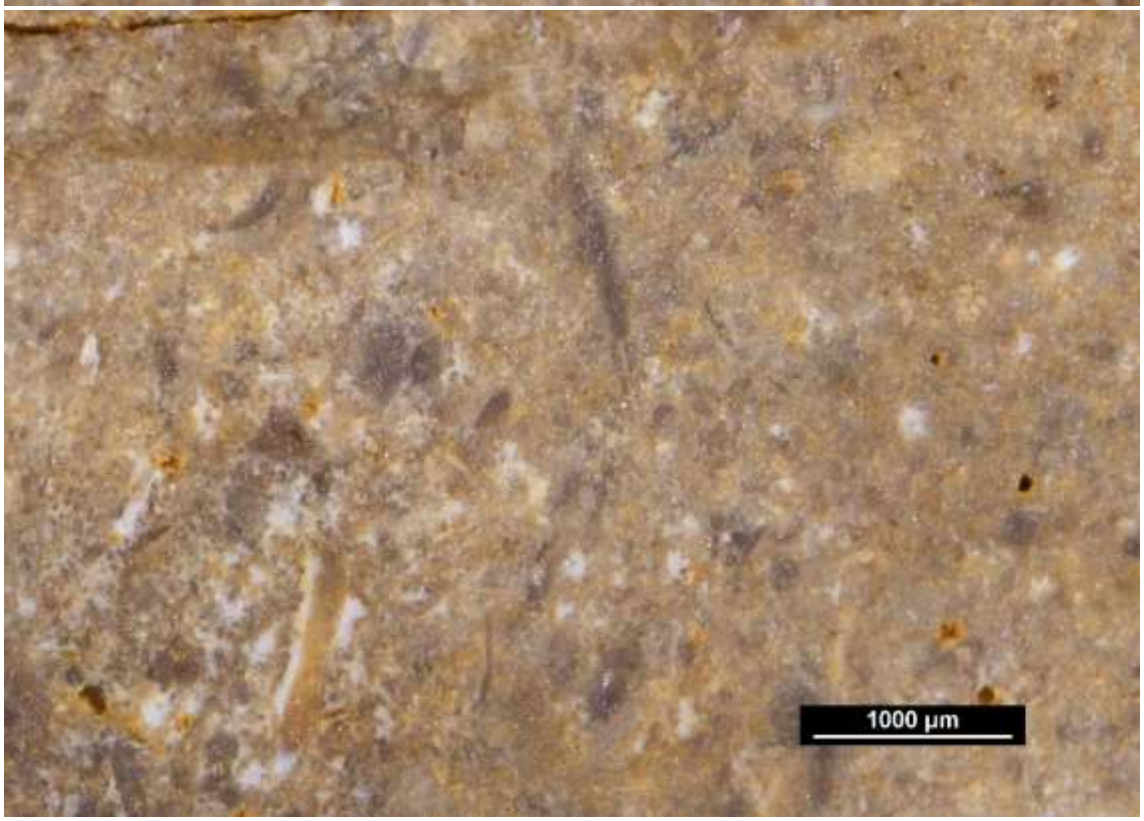
Macroscopic photos

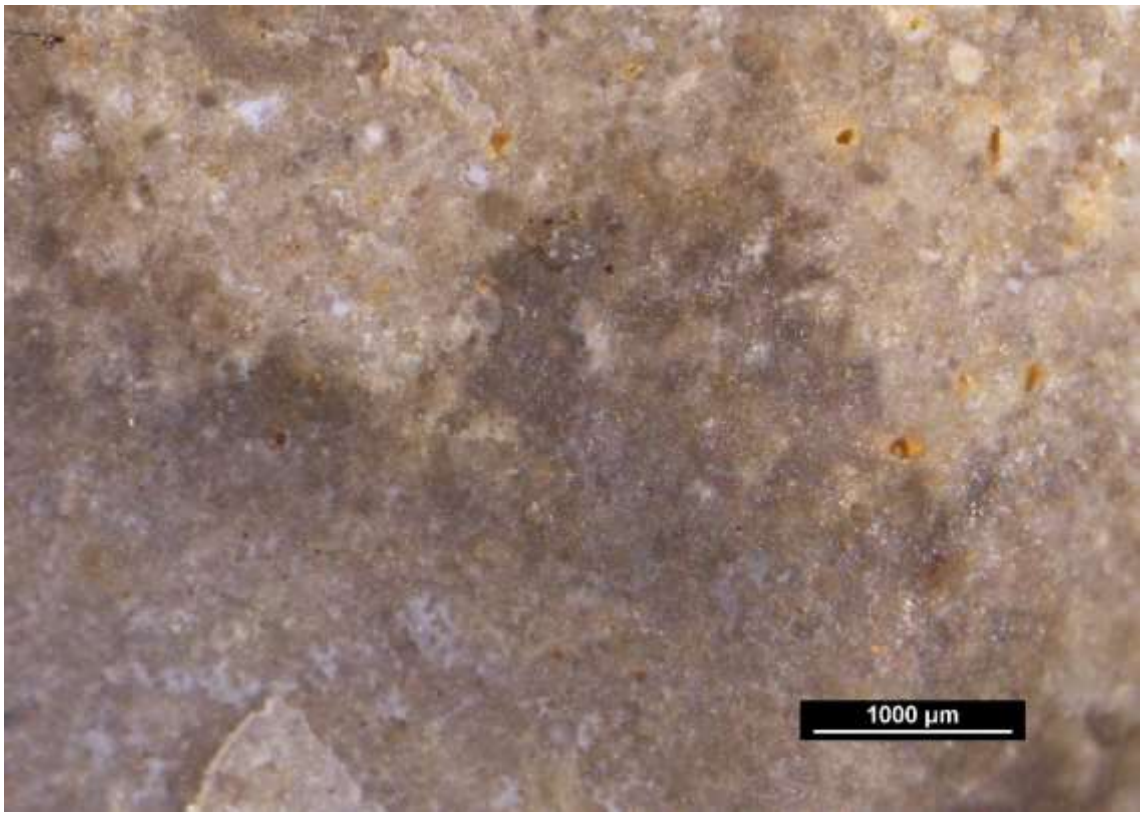




1000 µm

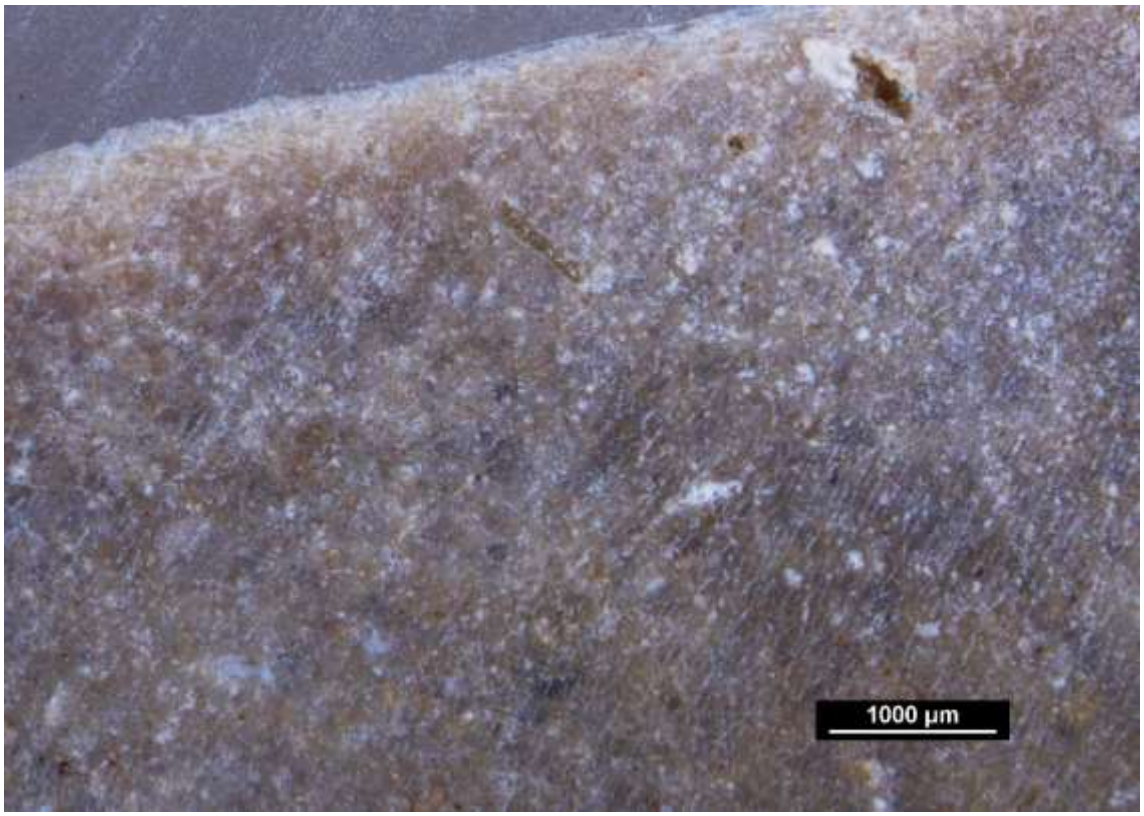

1000 µm


1000 µm


1000 µm


1000 µm


5000 µm


1000 µm


5 cm