TREMOLITE – ACTINOLITE

Chemical formula: $Ca_2(Mg,Fe^{2+})_5[(OH)_2|Si_8O_{22}]$

Crystal system: monoclinic

Color in thin section: depends on iron contents

tremolite is colorless, pale yellow, or pale green (with a weak pleochroism)

actinolite is strongly pleochroic:

X = pale yellow

Y = yellow-green

Z = pale green

Form: prismatic to bladed crystals, acicular crystals; sometimes fibrous or asbestiform

Cleavage: perfect on {110} – basal cross sections are diamond-shaped with two cleavages intersecting at about 124°

Indices of refraction: n_α = 1.605 – 1.660 n_β = 1.613 – 1.665 n_γ = 1.630 – 1.680

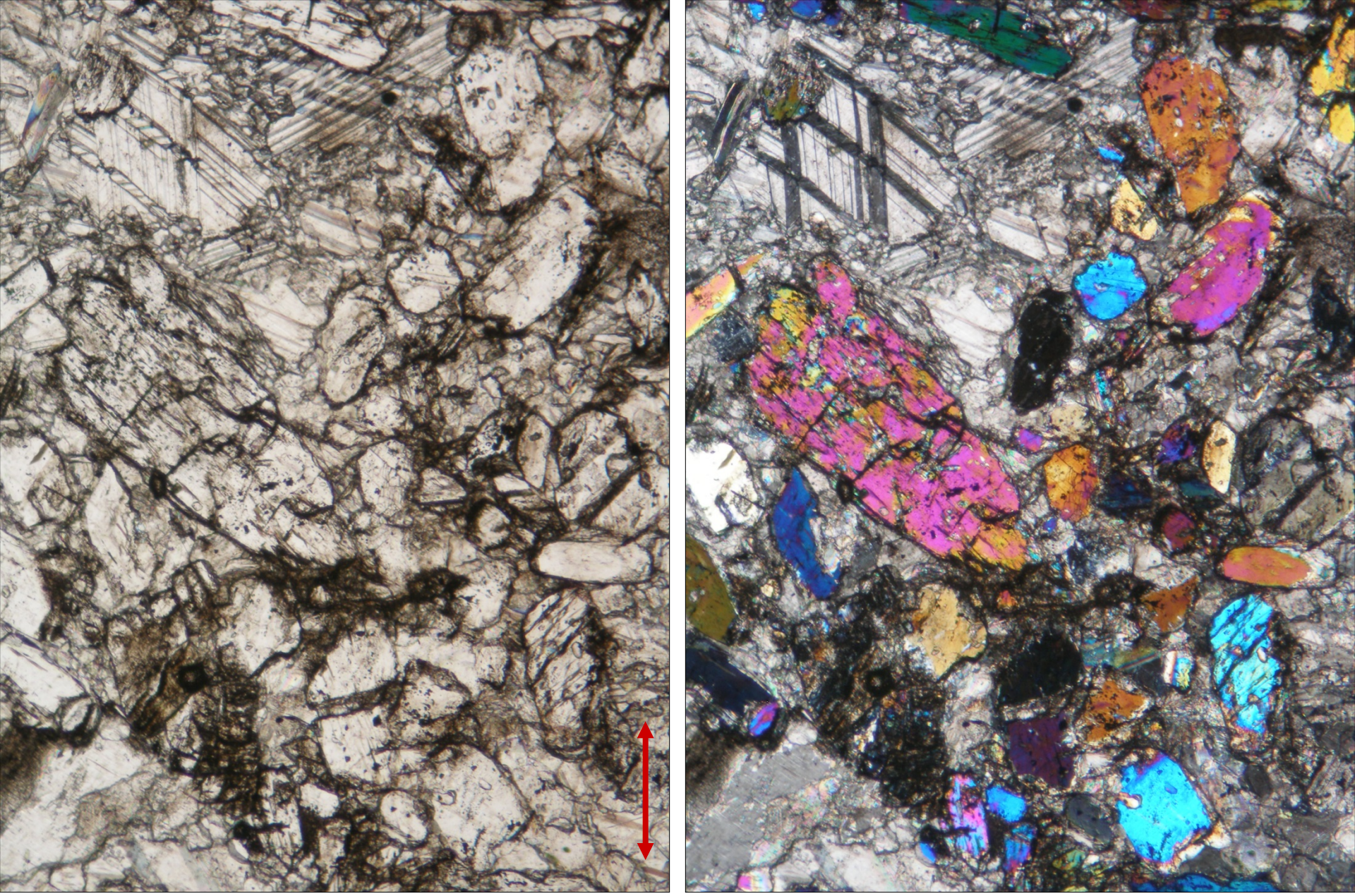
Birefringence: 0.020 – 0.027

Optic sign: biaxial negative

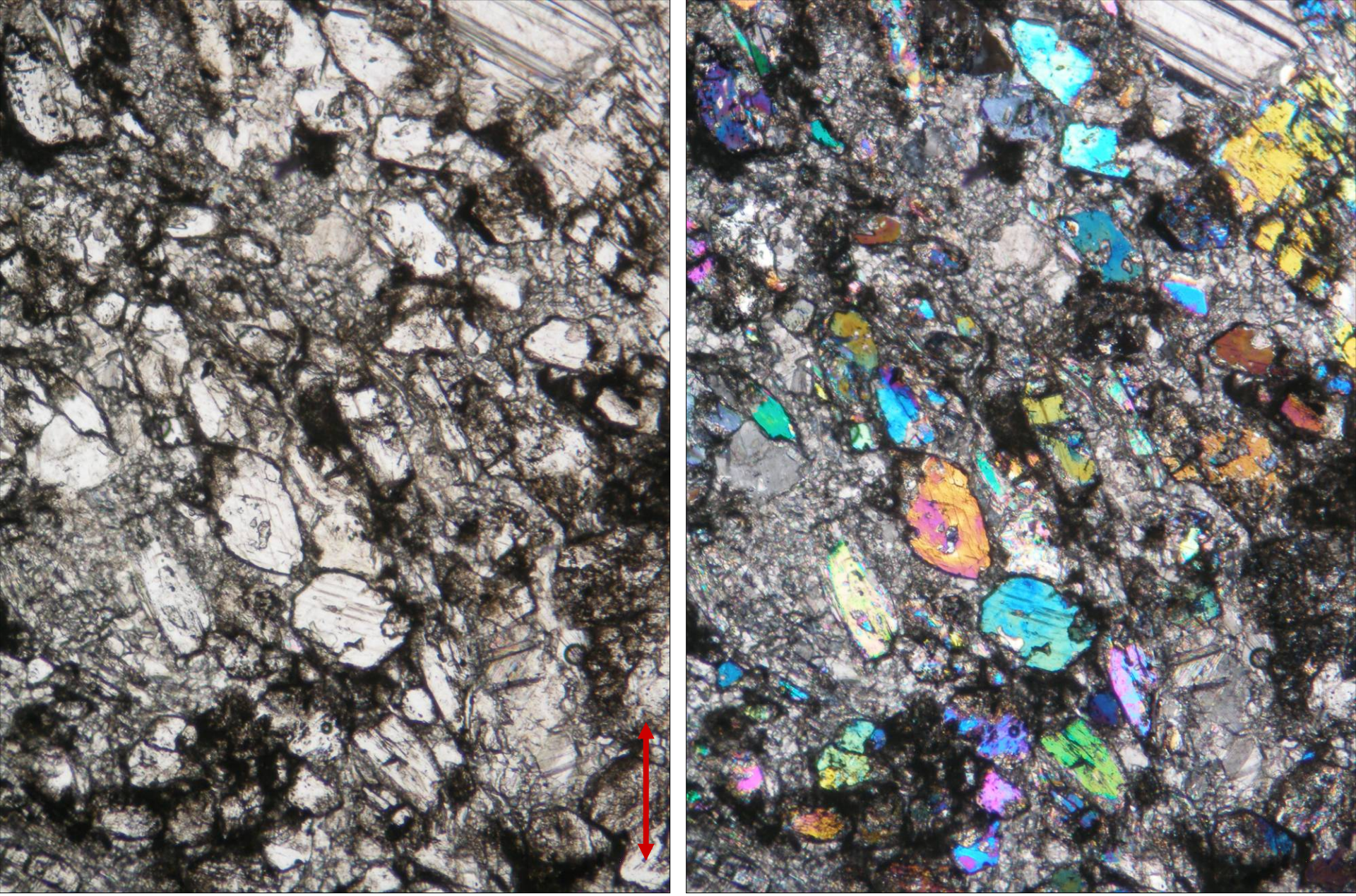
Sign of elongation: positive

Occurrence: greenschist, actinolite schist, tremolite schist, marble, talc schist, soapstone

Similar minerals in thin sections: wollastonite (non-pleochroic, different cleavage), other amphiboles



Tremolite in marble from Olešnice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



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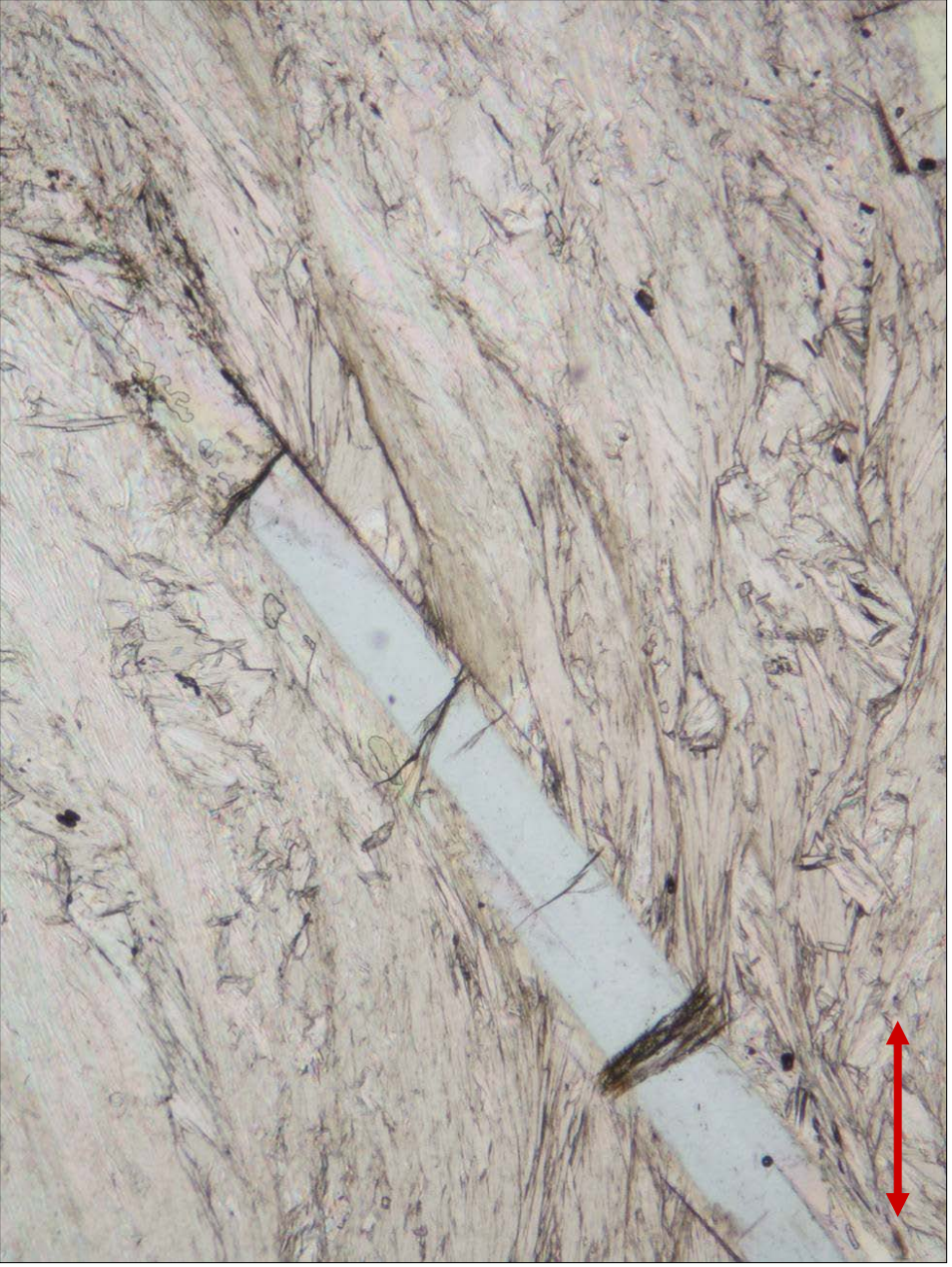
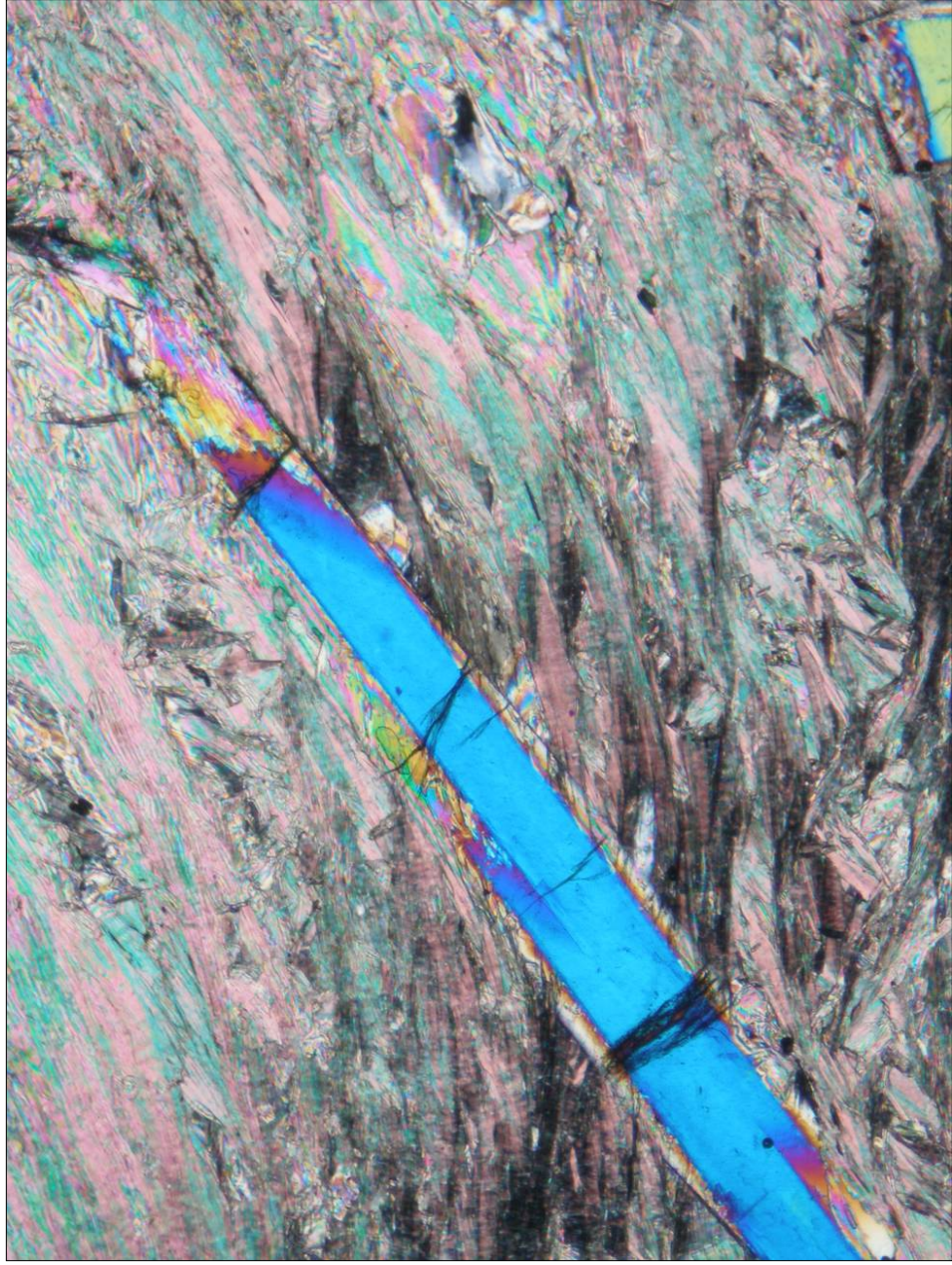
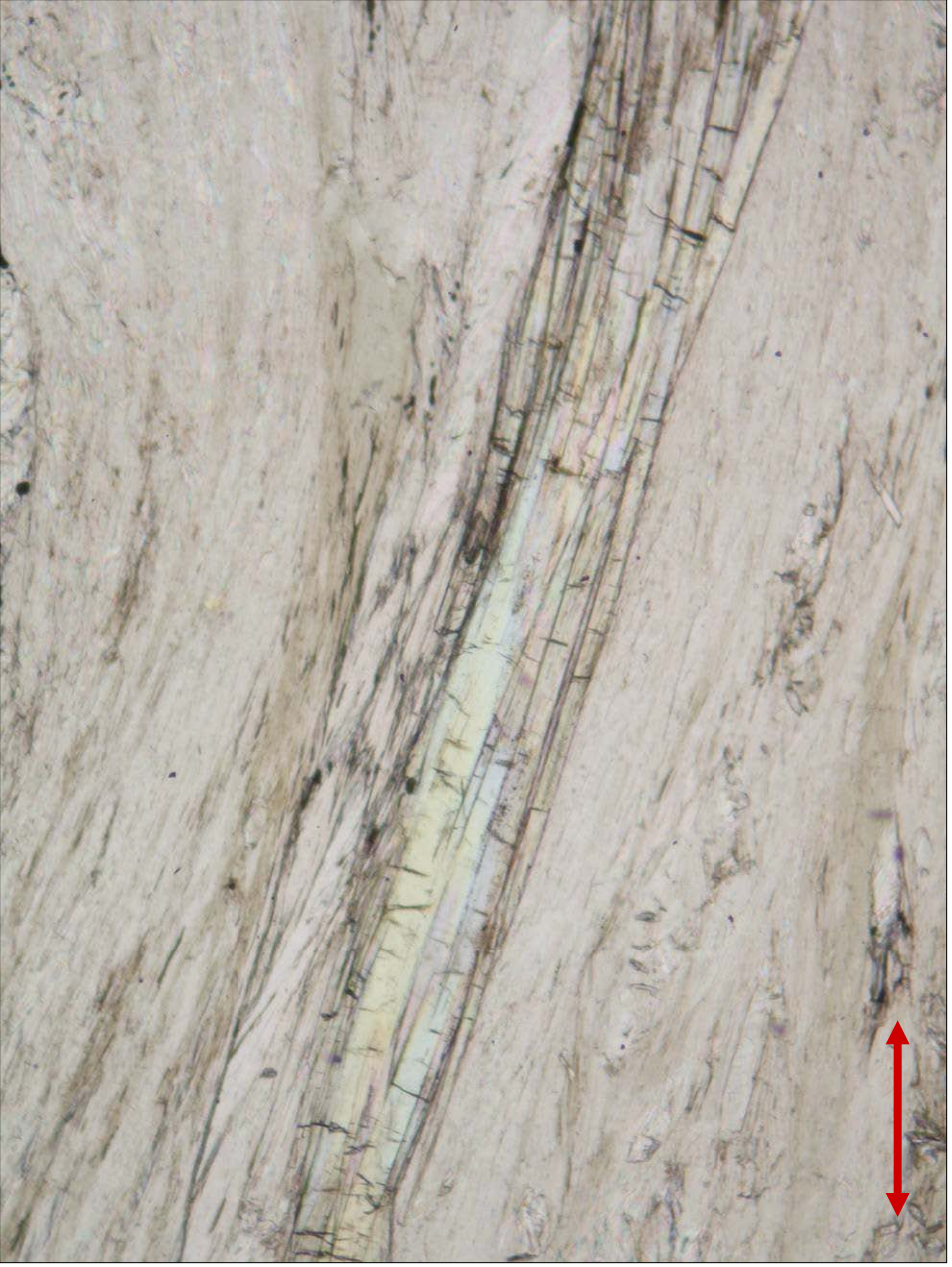
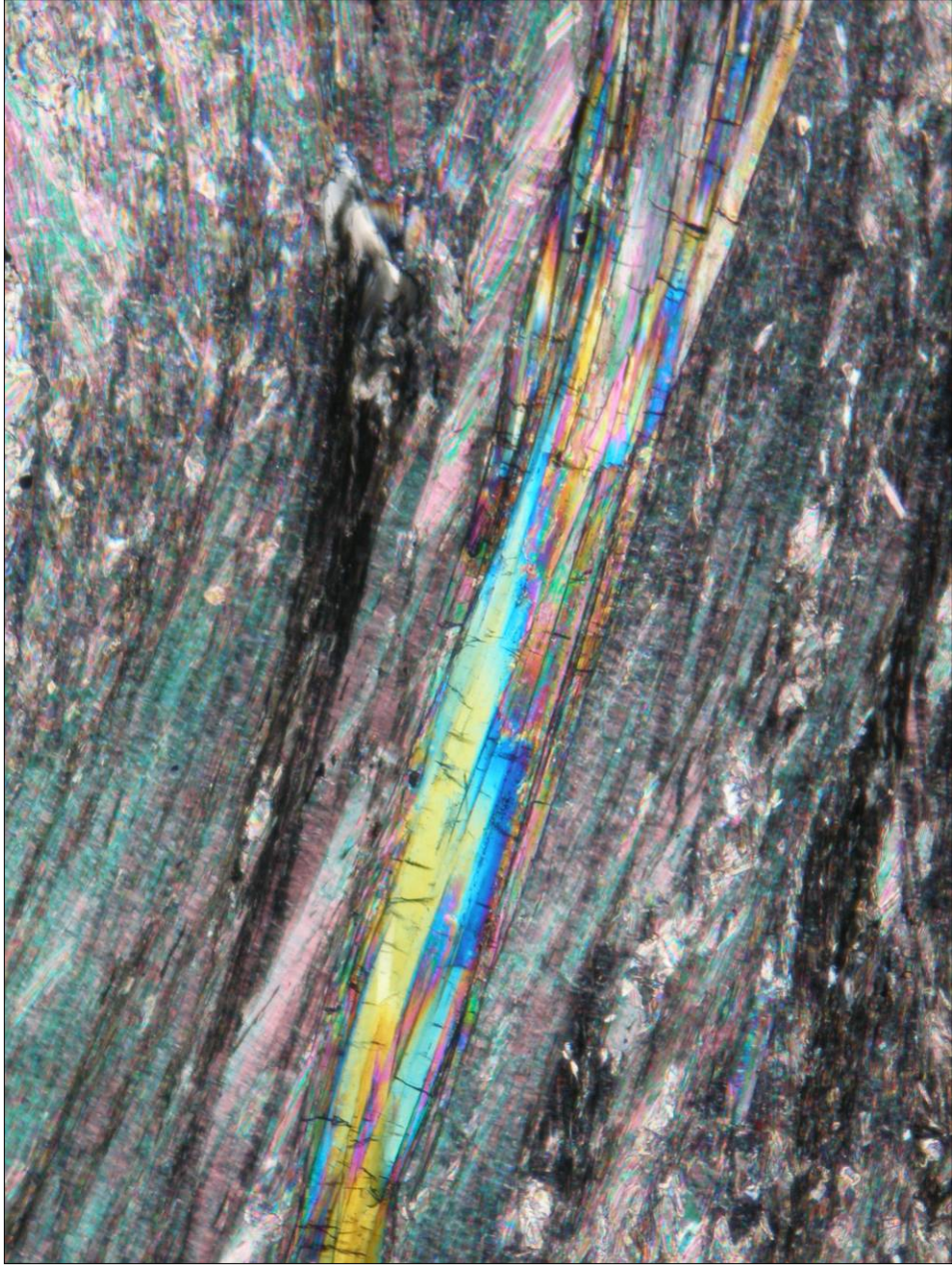




Tremolite in talc schist from Sobotín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2 mm. Photo: JiZi.





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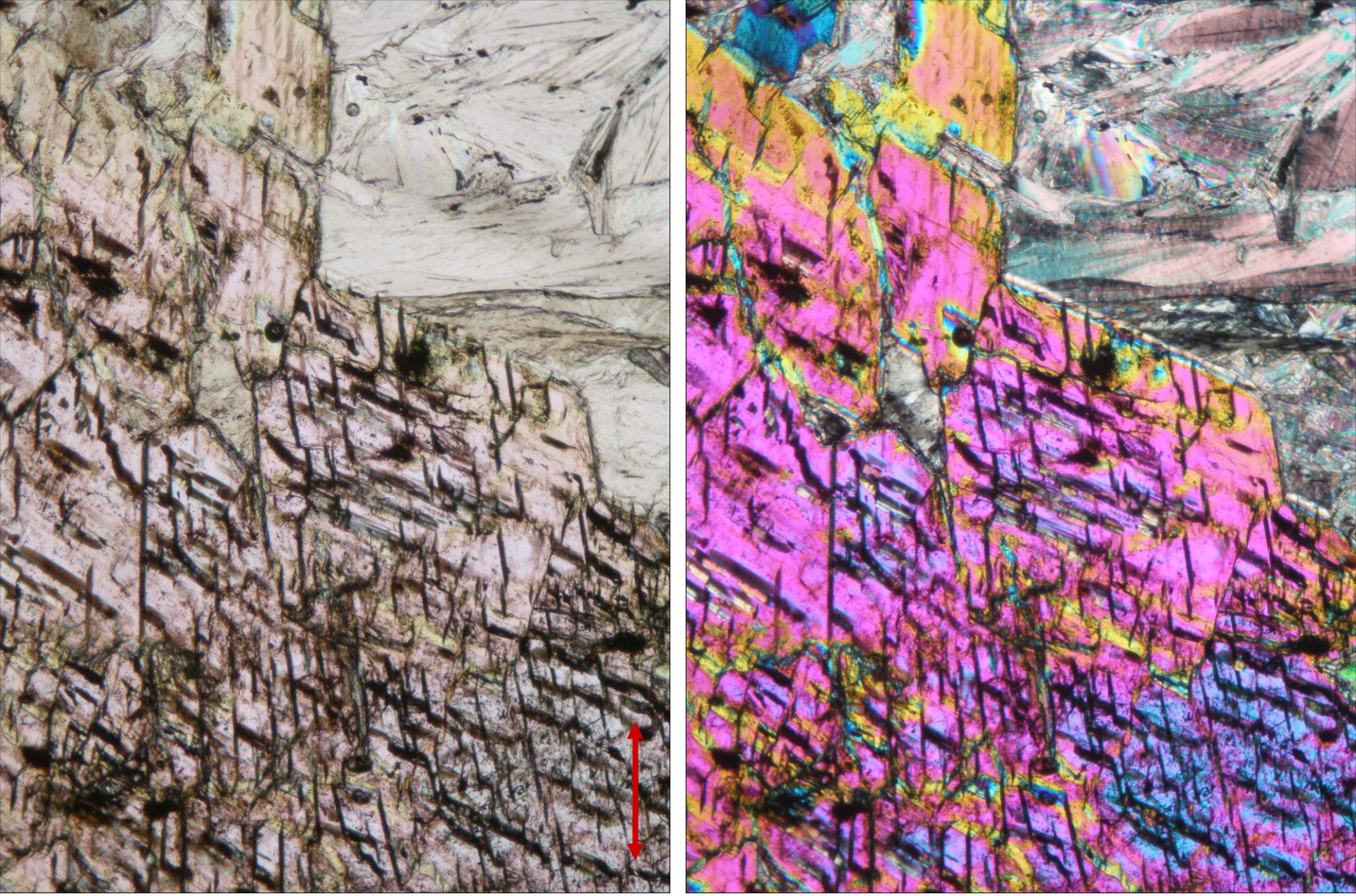
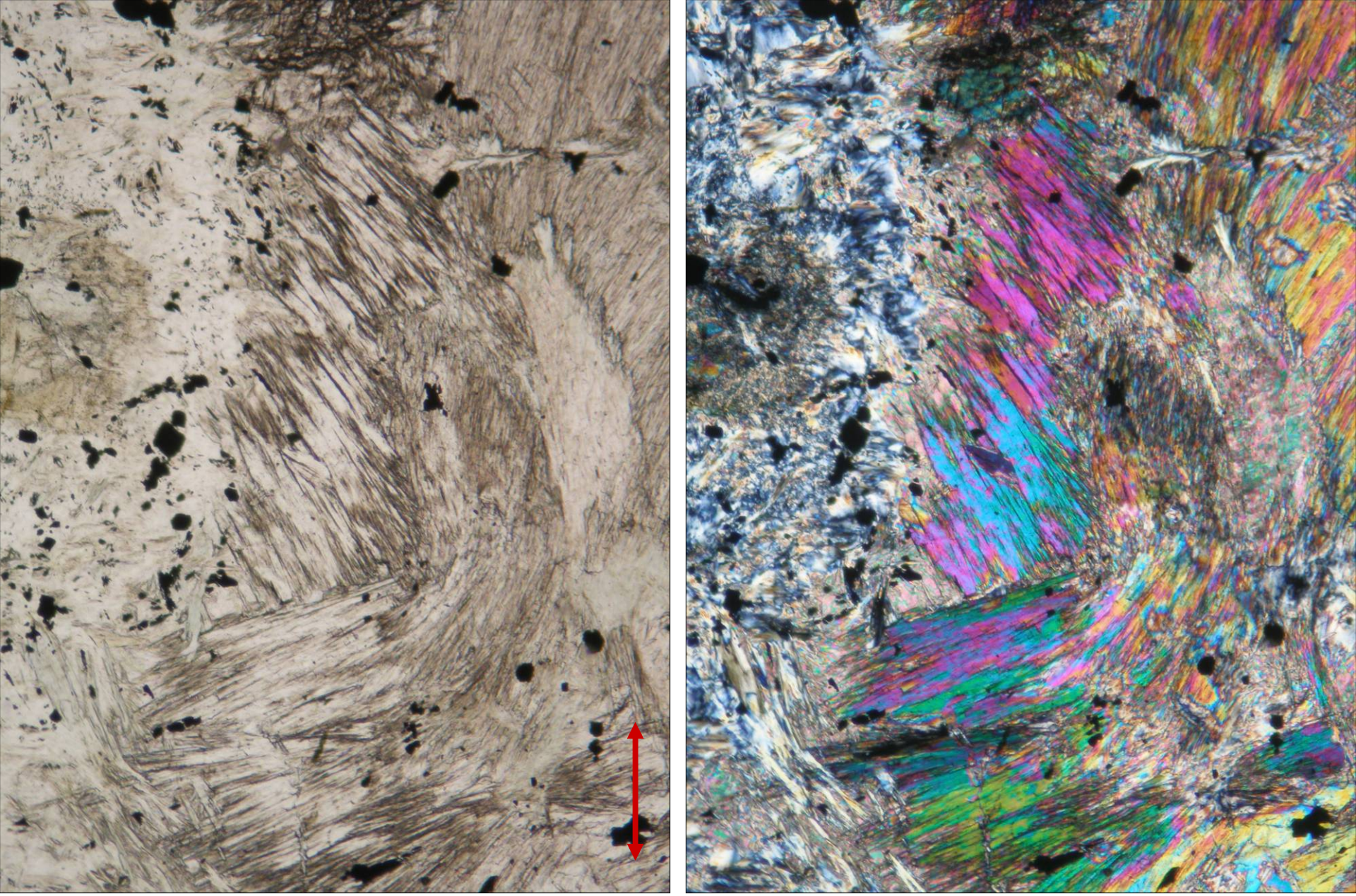
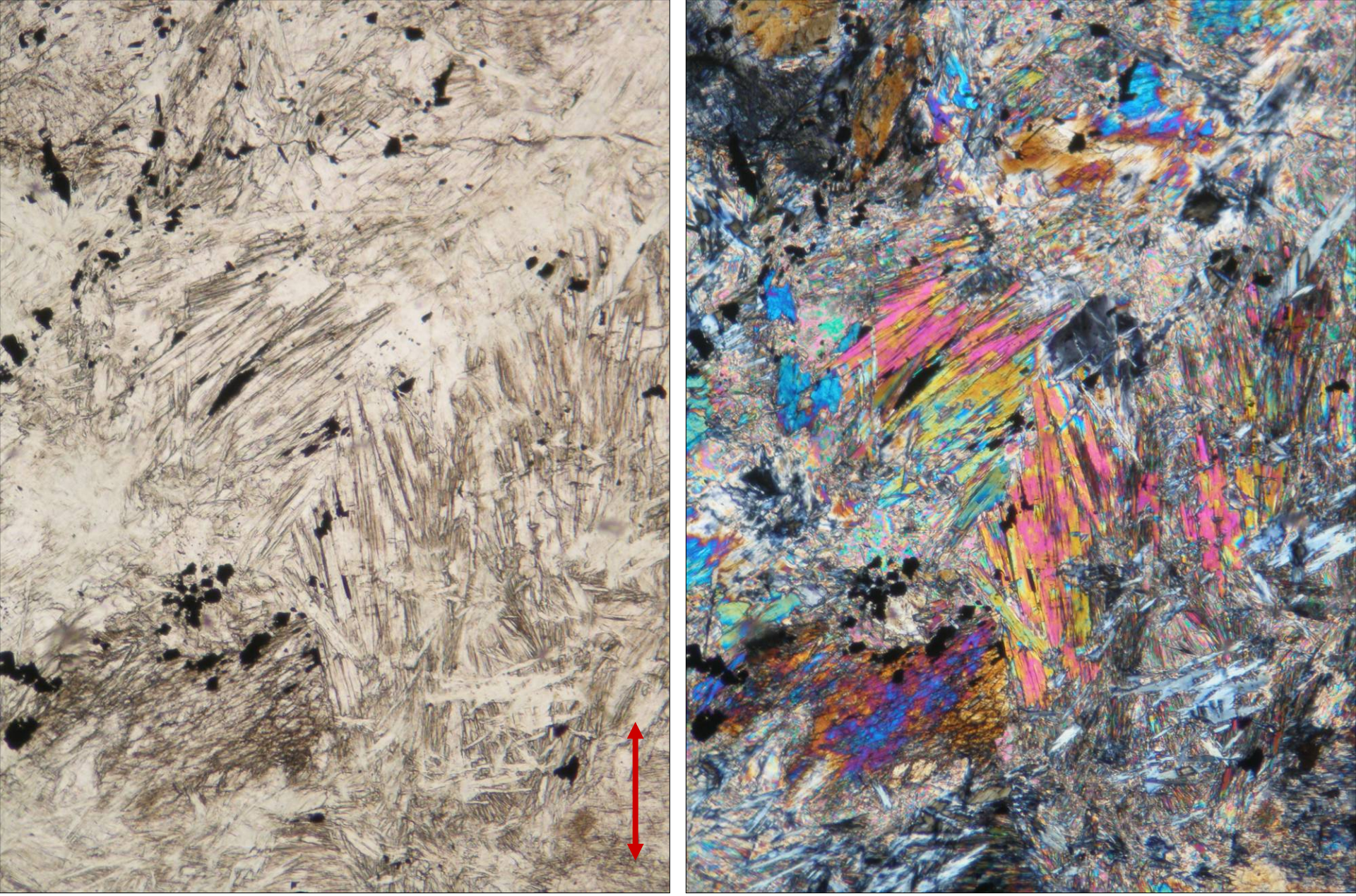


Tremolite-actinolite in talc schist from Sobotín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2 mm. Photo: JiZi.



Tremolite-actinolite, talc and magnetite in soapstone from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



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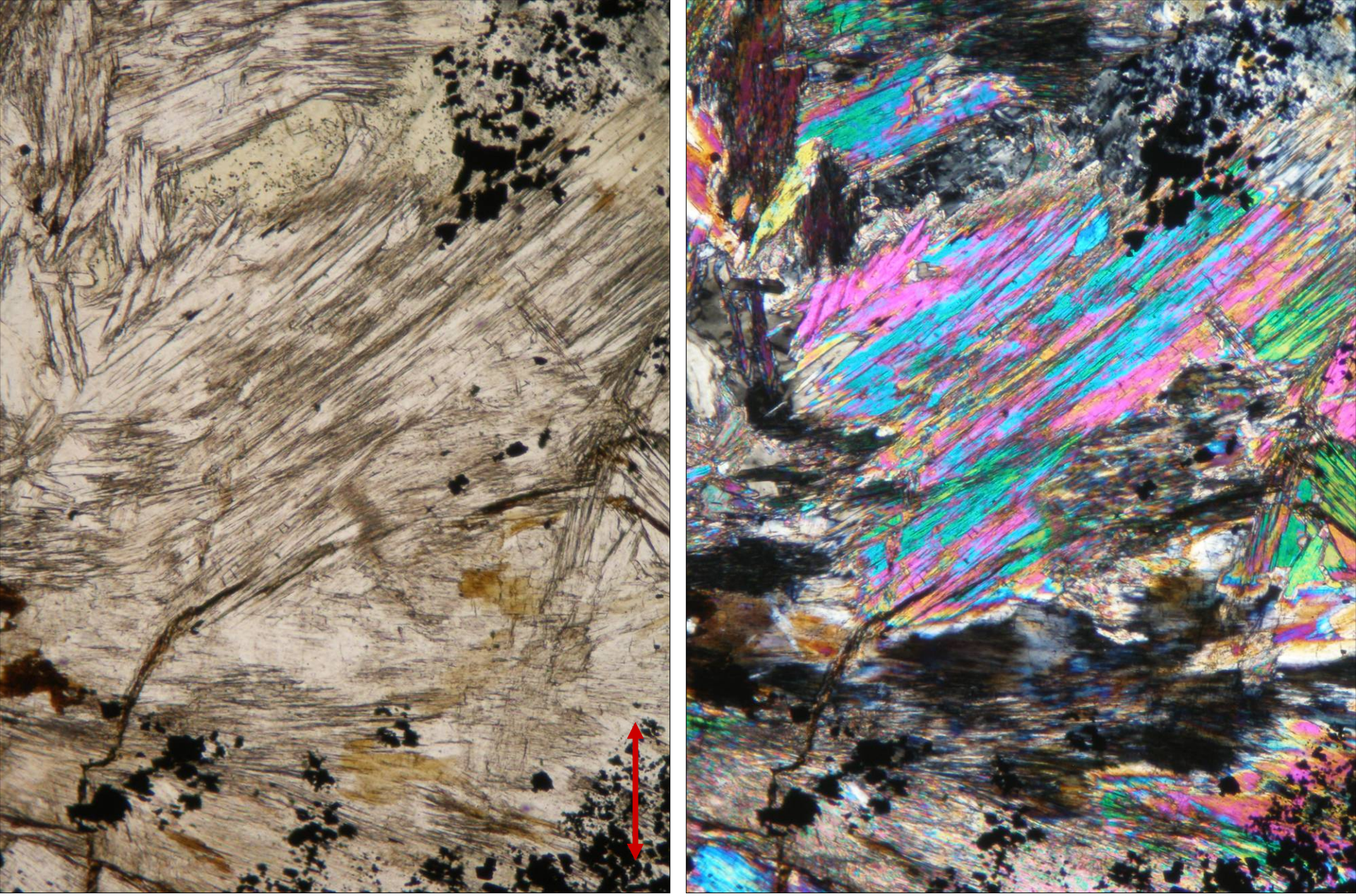

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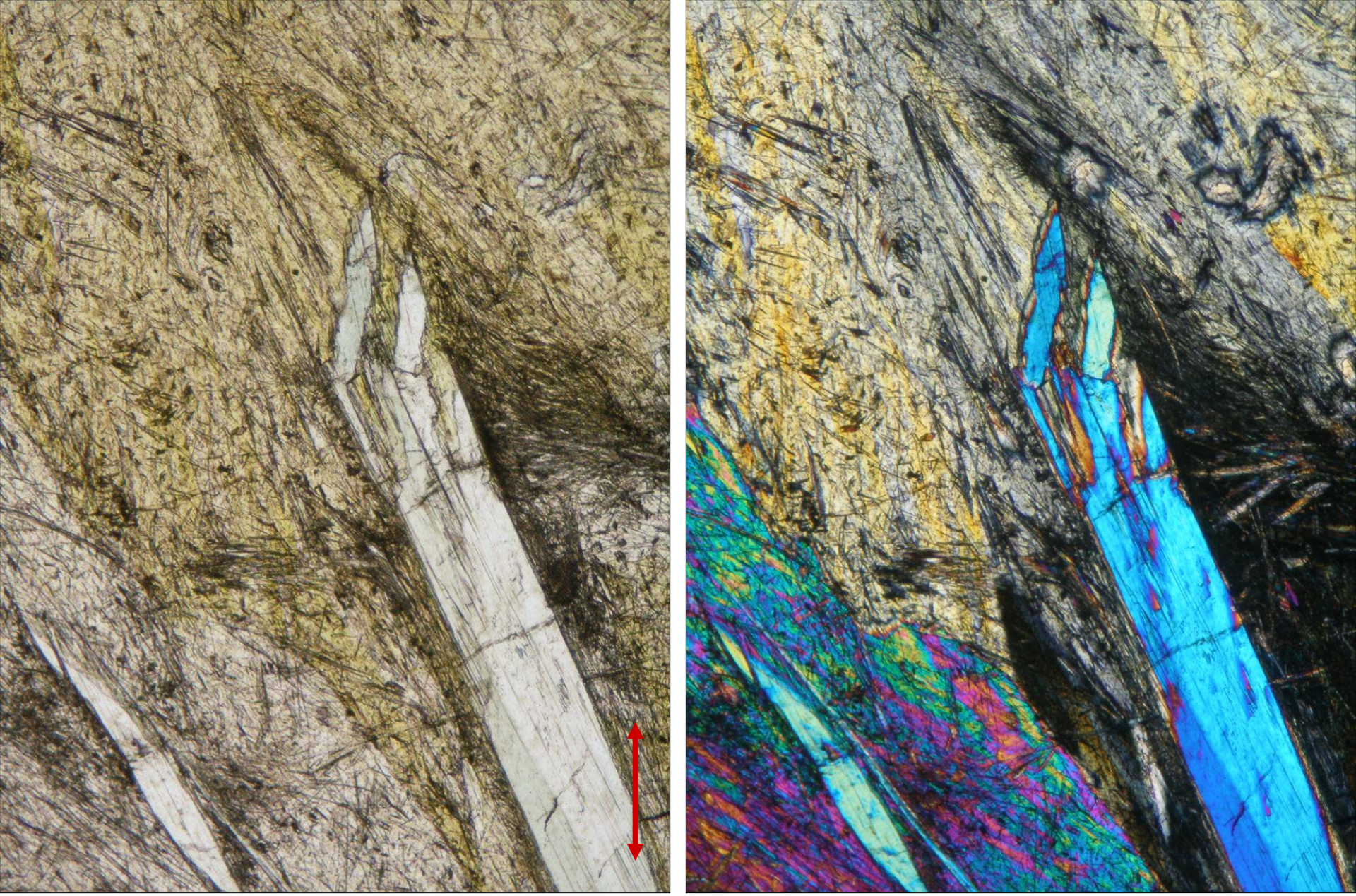
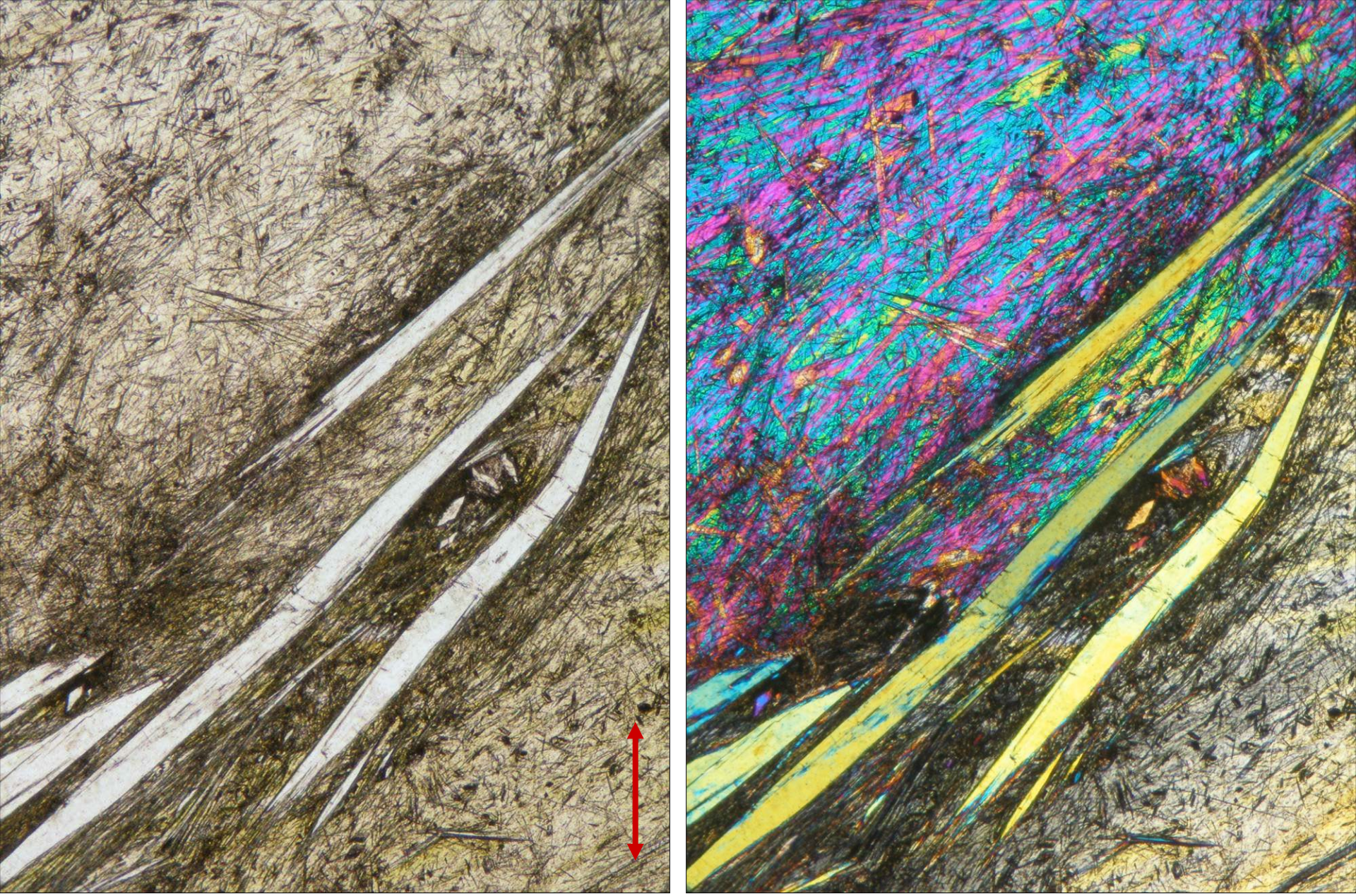


Tremolite-actinolite needles and fibres in epidote in a hydrothermal vein of the Alpine-type from Maršíkov, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



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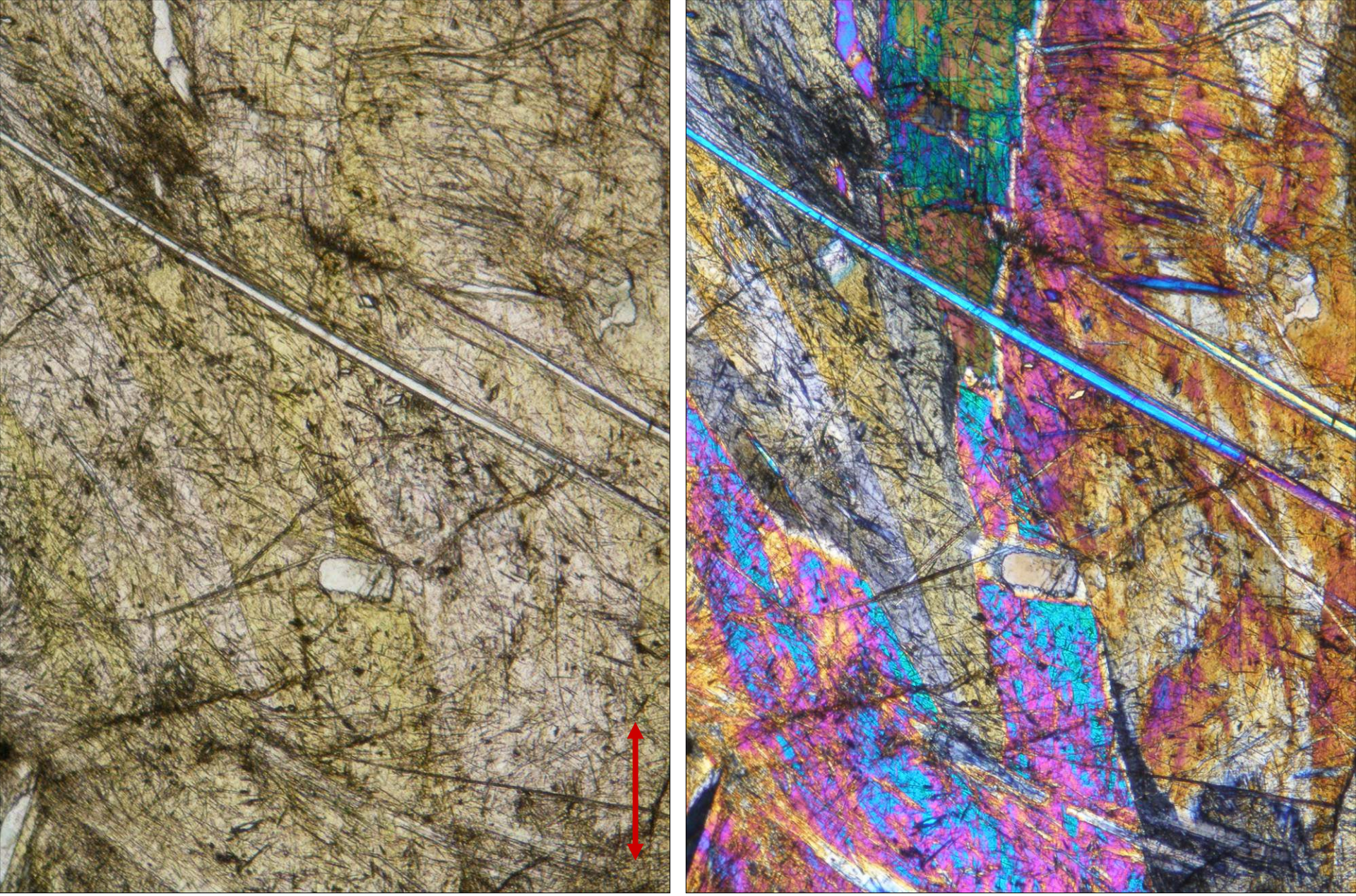

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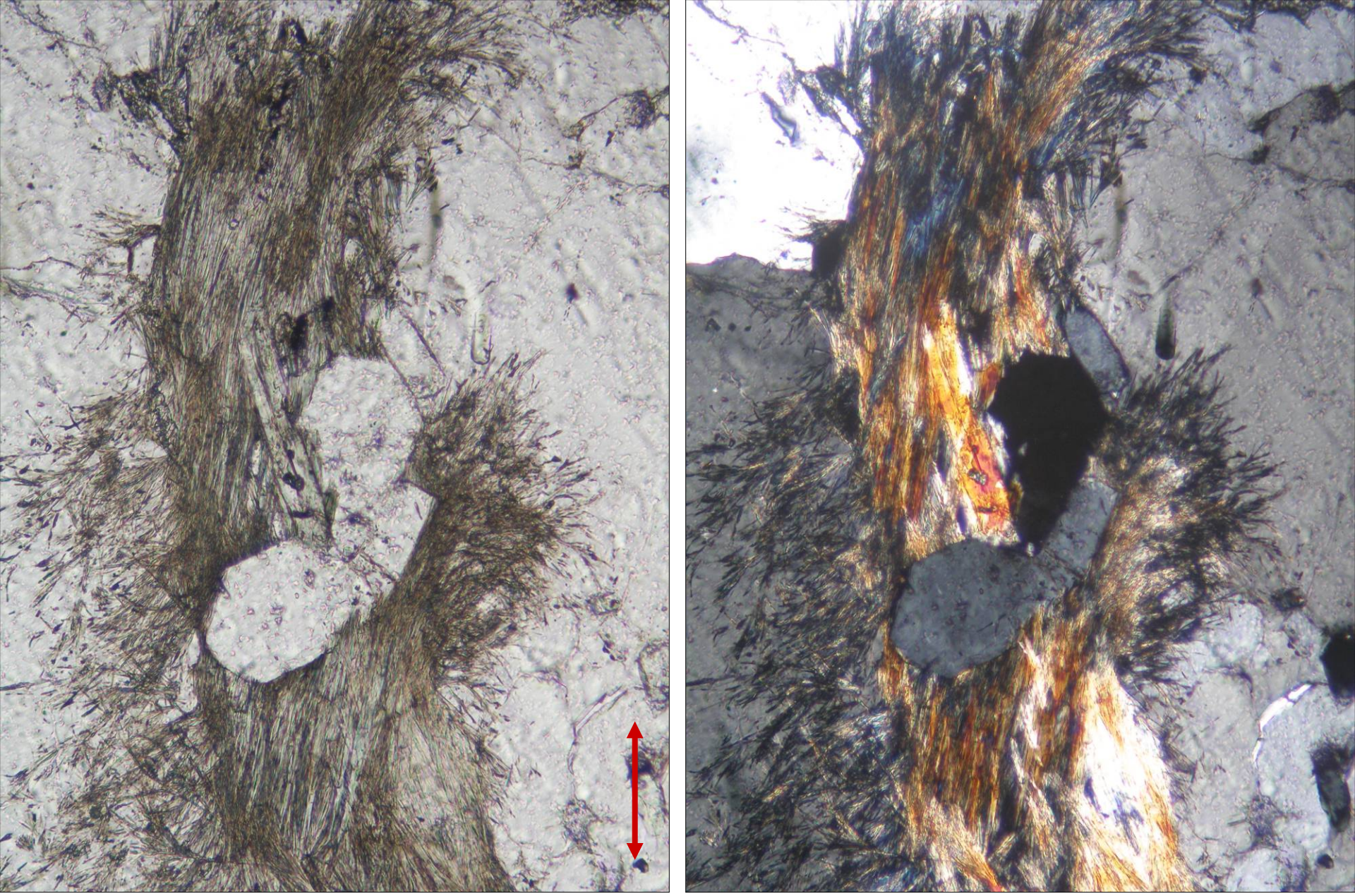

Tremolite-actinolite in pegmatite from Žulová, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.7 mm. Photo: JiZi.