STAUROLITE

Chemical formula: $(Fe^{2+},Mg,Zn)_2Al_9[(OH)_2|O_6|(SiO_4)_4]$

Crystal system: monoclinic

Color in thin section: distinctly pleochroic with:

X = colorless, pale yellow

Y = pale yellow to yellowish brown

Z = golden yellow to reddish brown

Form: prismatic crystals, often penetration twins (“cross twins“), allotriomorphic grains and aggregates of grains

Cleavage: poor on {010}

Indices of refraction: $n_\alpha = 1.736 – 1.747$ $n_\beta = 1.740 – 1.754$ $n_\gamma = 1.745 – 1.762$

Birefringence: 0.009 – 0.015

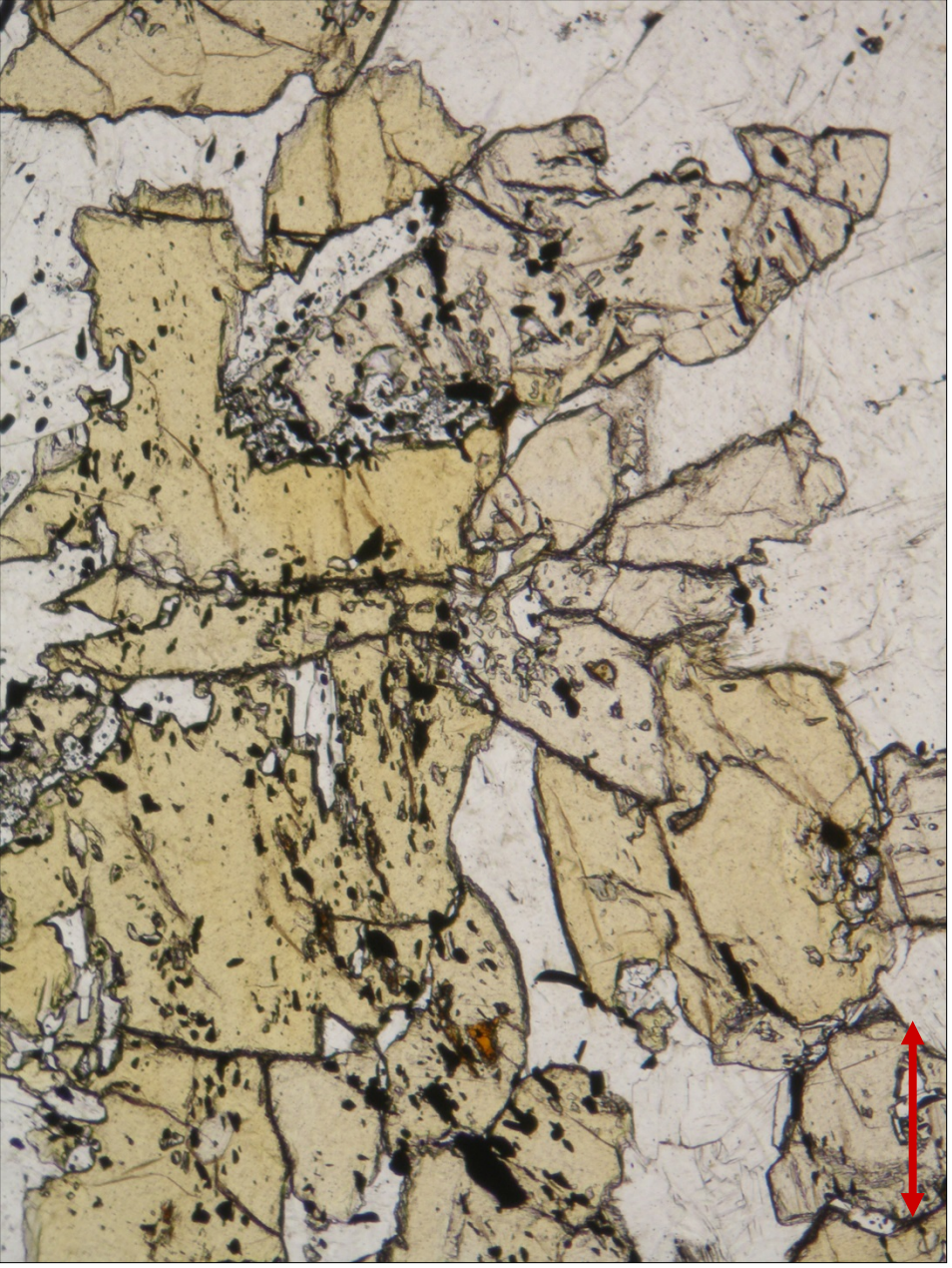
Optic sign: biaxial positive

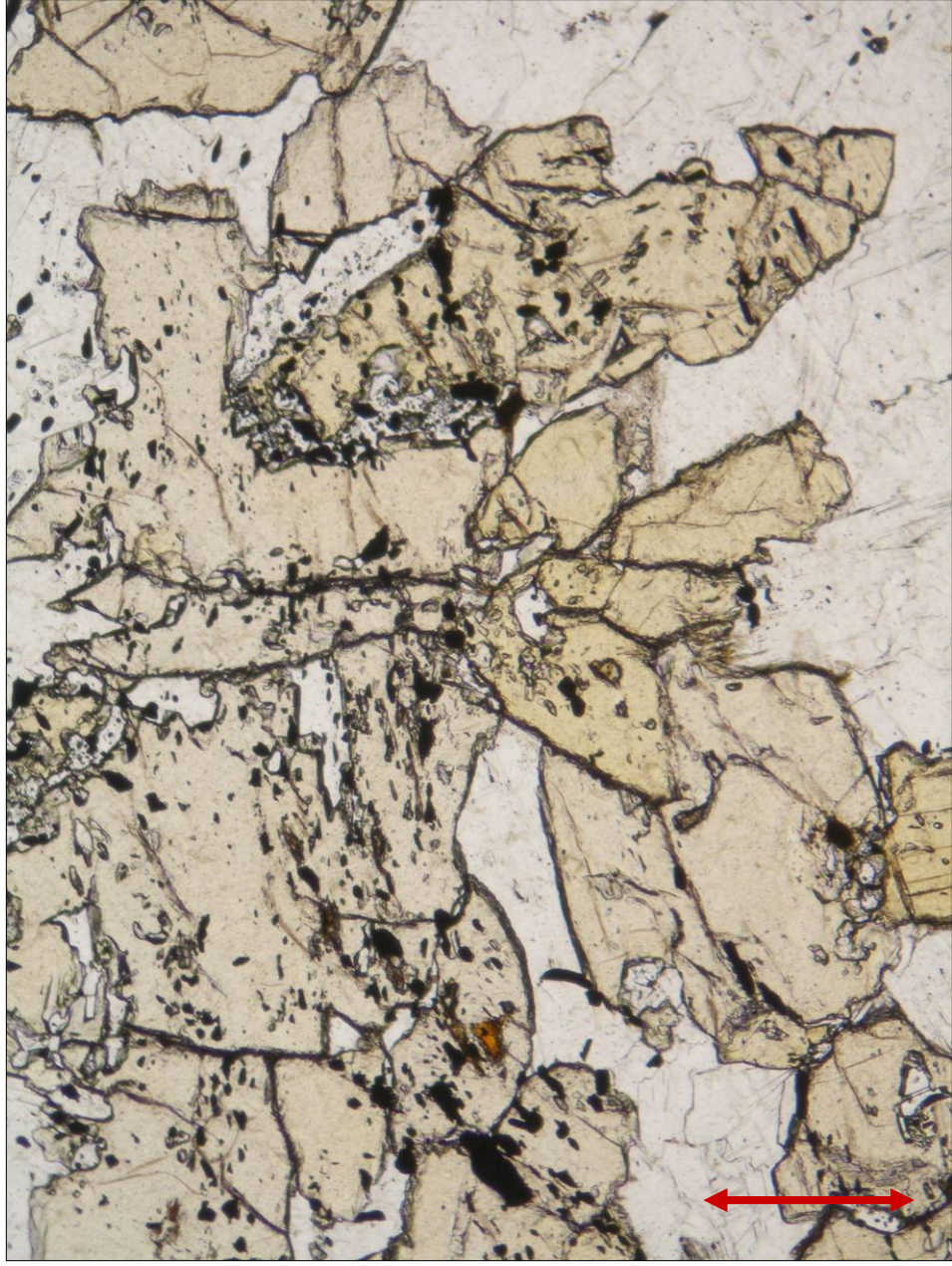
Alteration: may be altered to fine-grained muscovite (sericite) or chlorite

Occurrence: mica schist

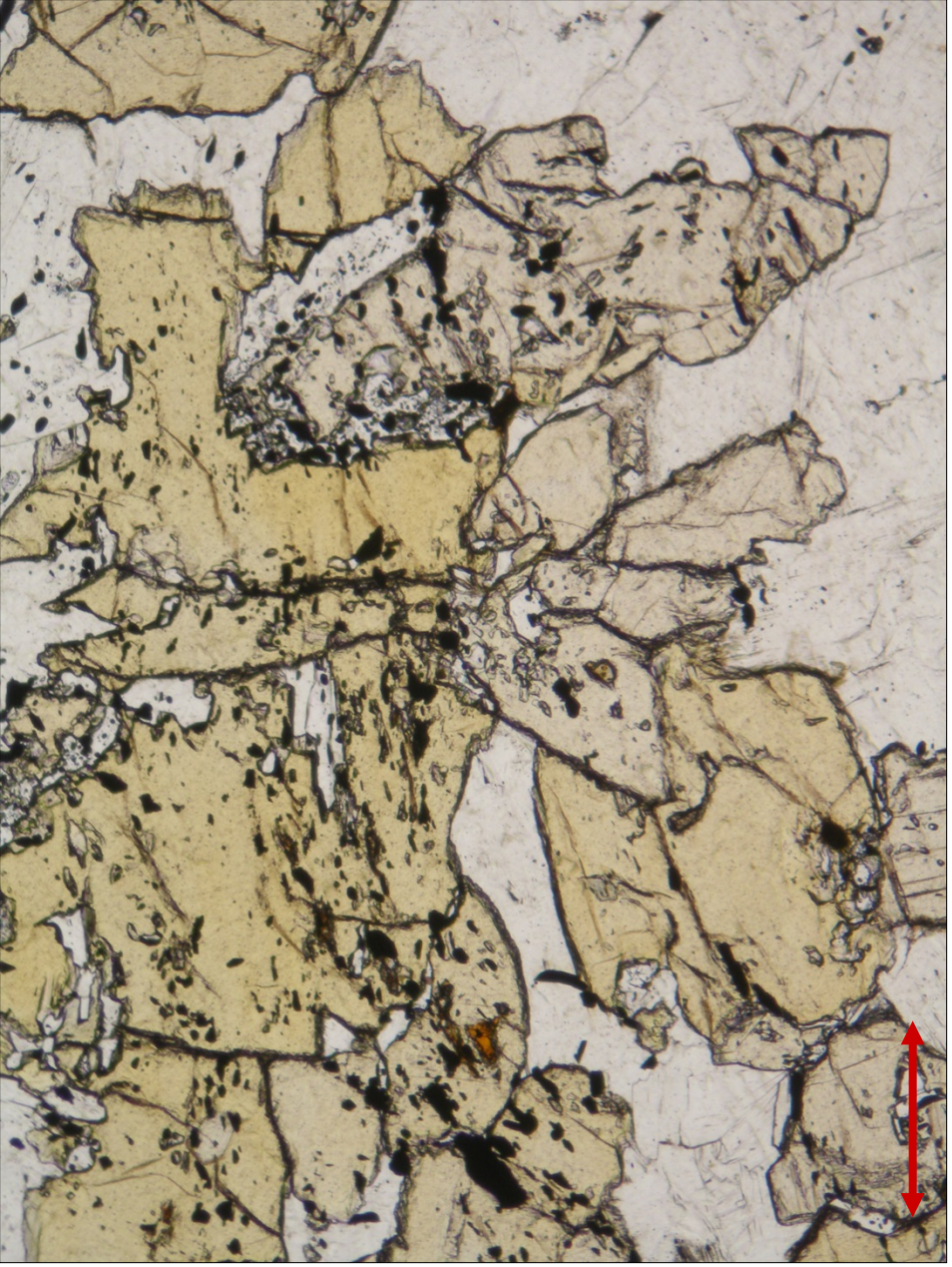
Similar minerals in thin sections: schorl (higher birefringence, uniaxial, different absorption), amphiboles (diverse cleavage)

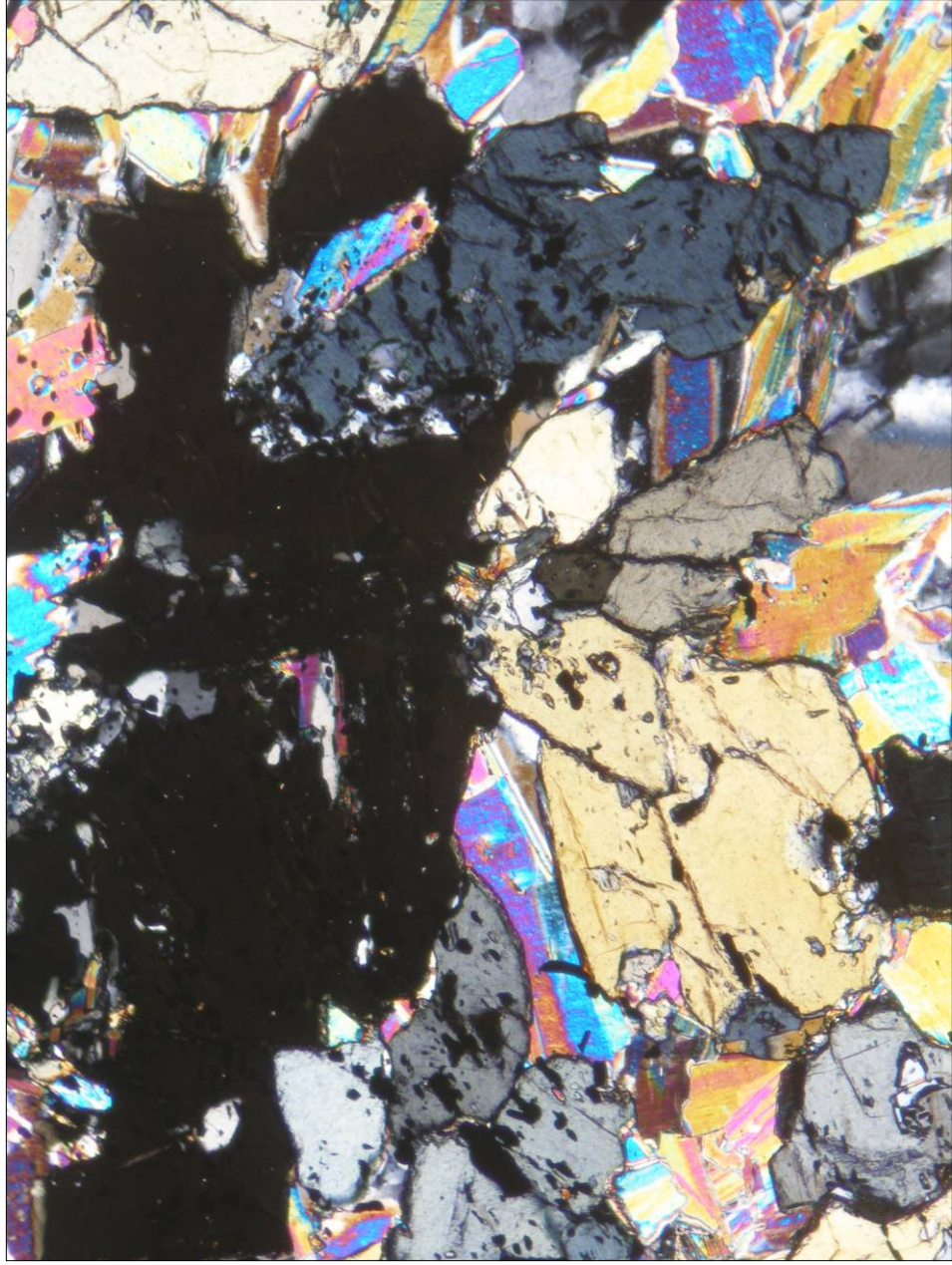
Note: staurolite porphyroblasts commonly contain numerous inclusions of quartz, ilmenite or other minerals



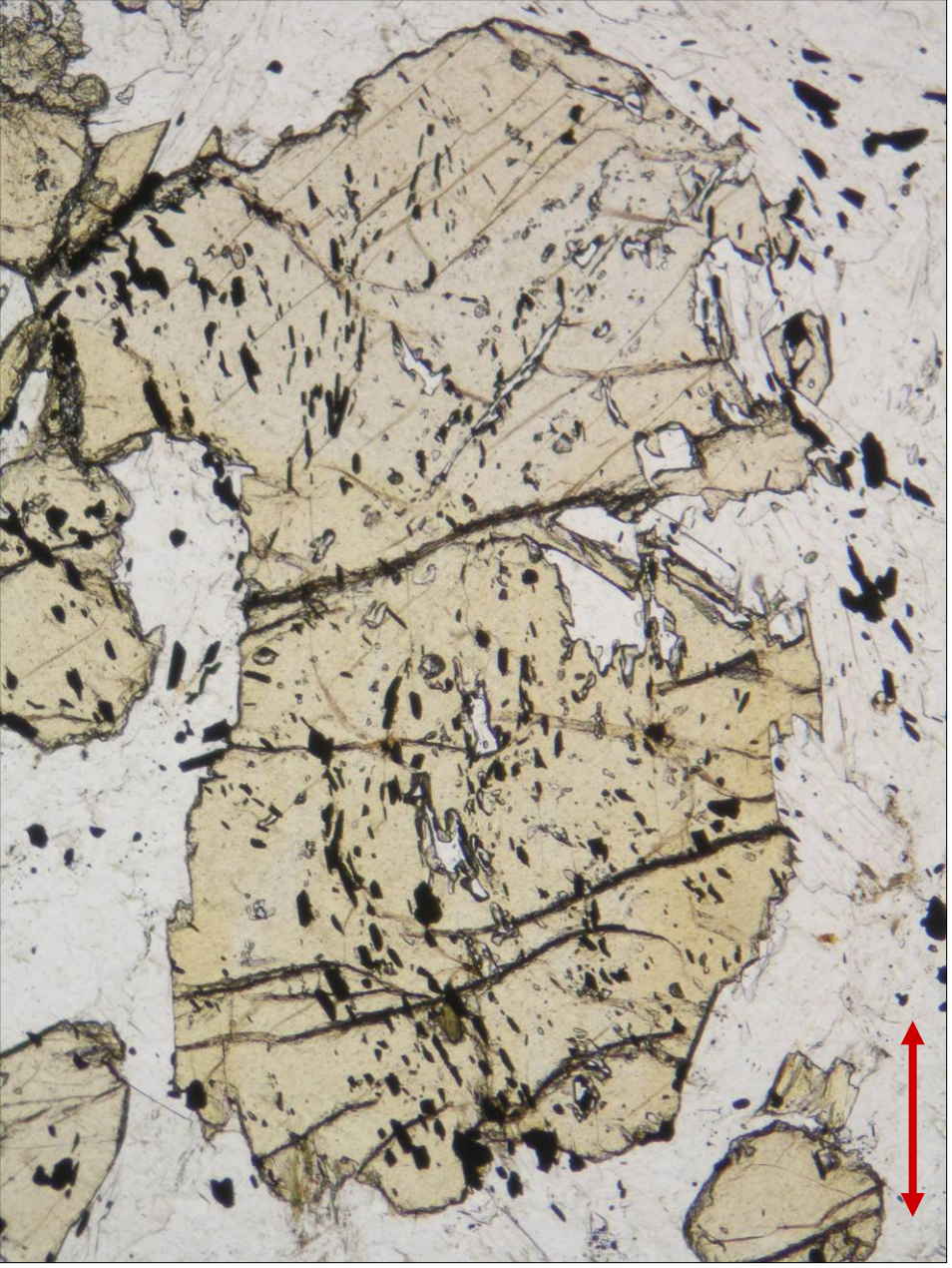


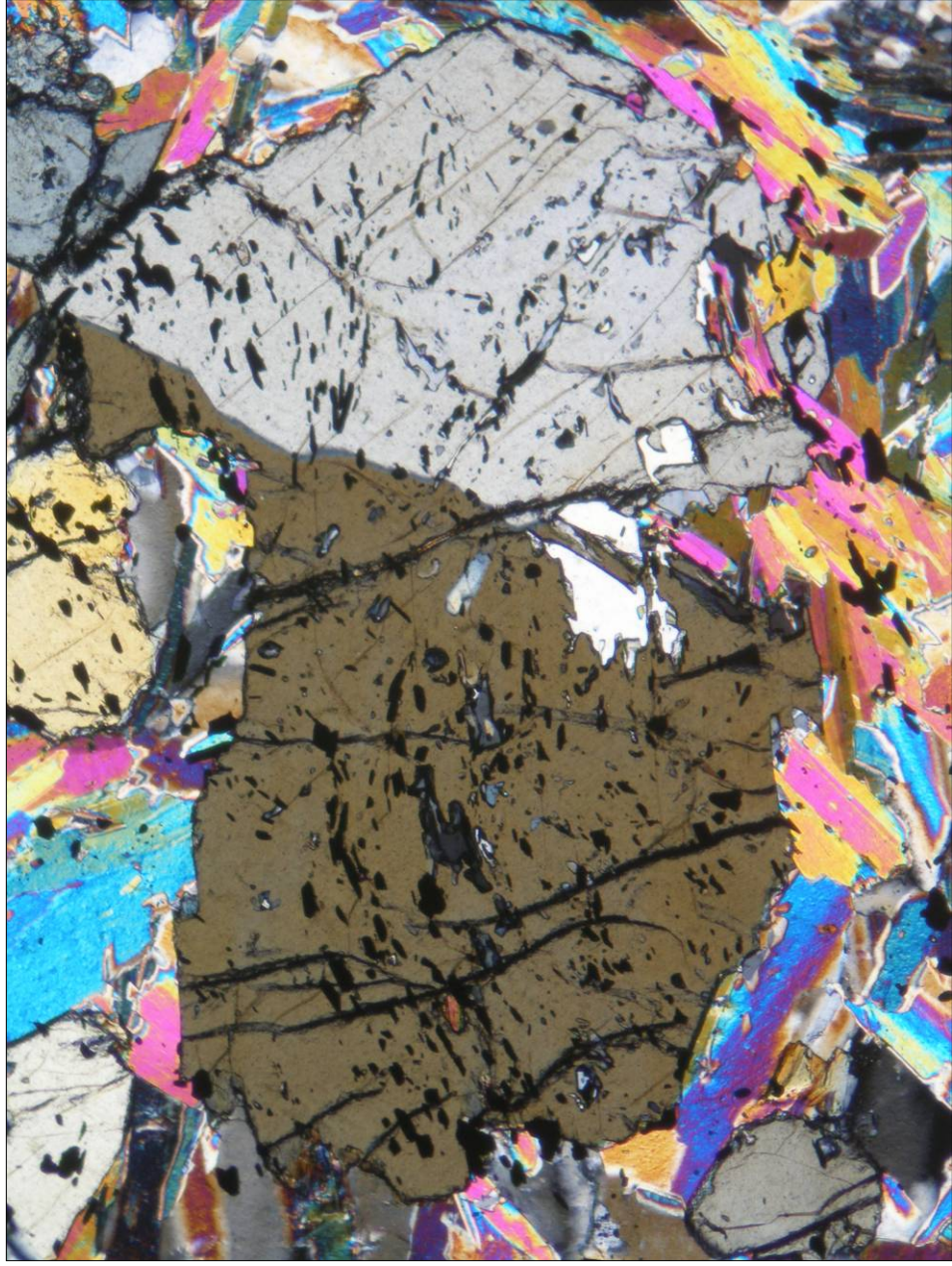
Pleochroism of staurolite in mica schist from Petrov nad Desnou, the Czech Republic; PPL. Width of fields of view is ca. 2.0 mm. Photo: JiZi.



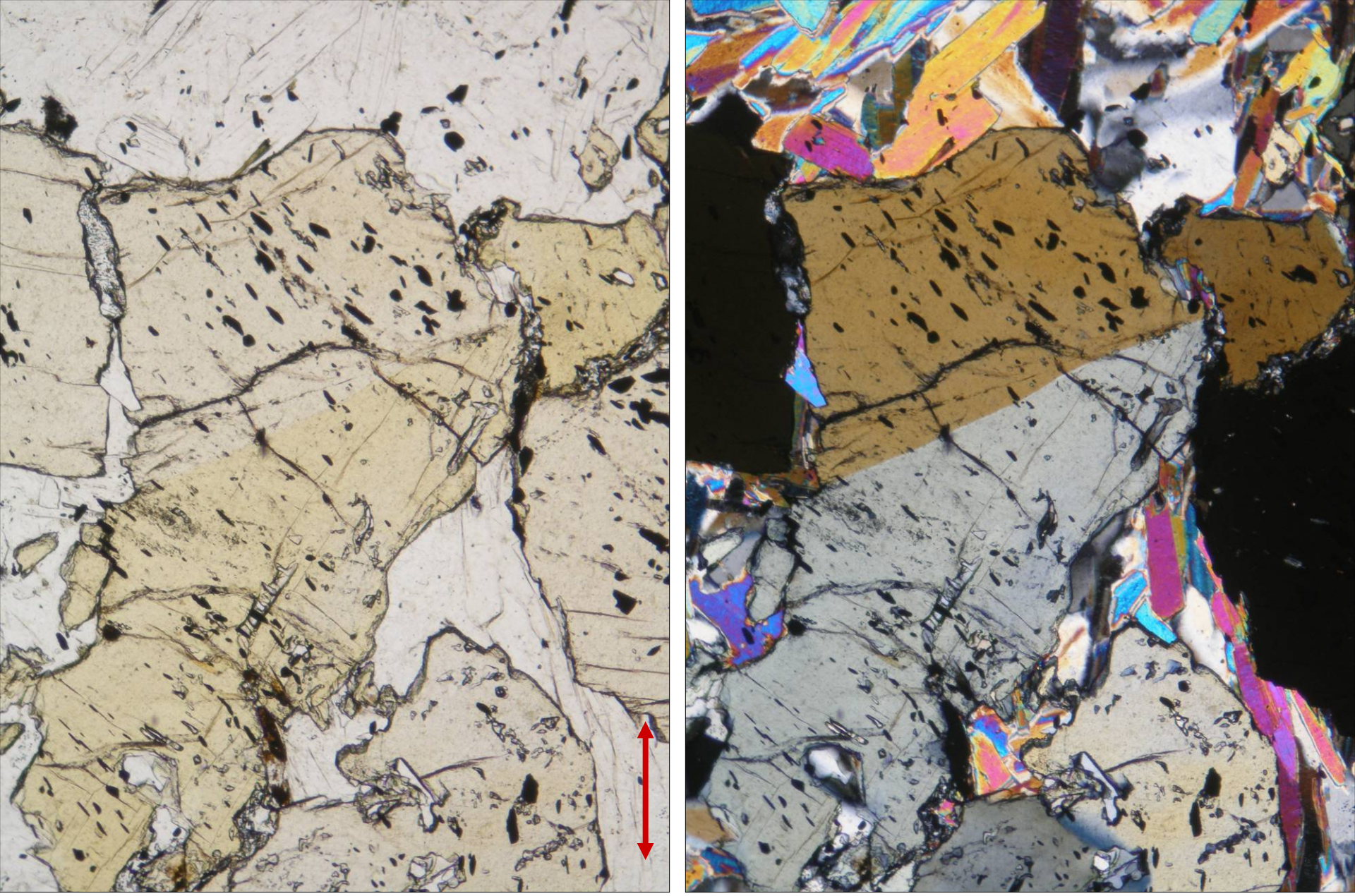


Staurolite in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.





Staurolite in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



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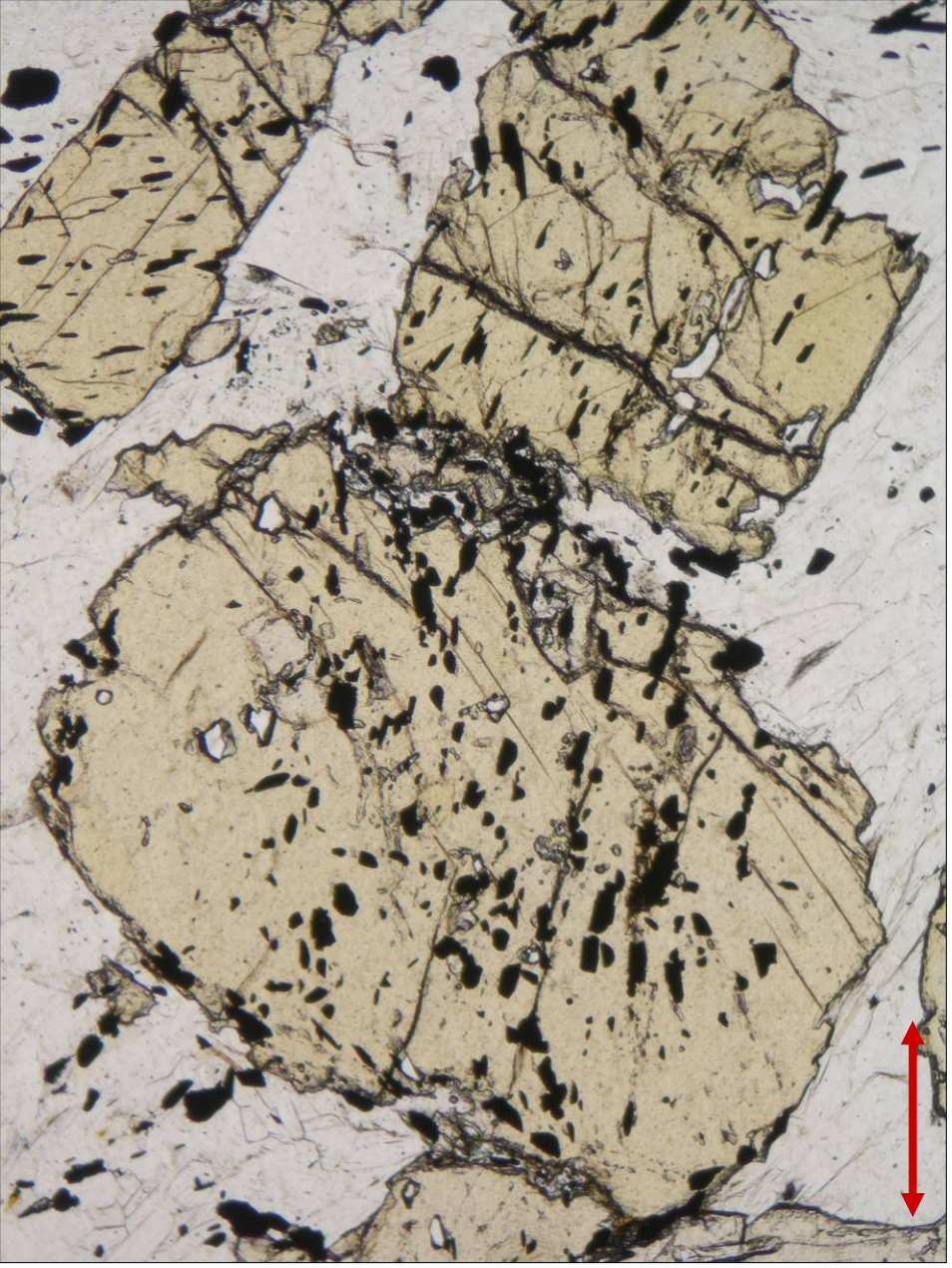
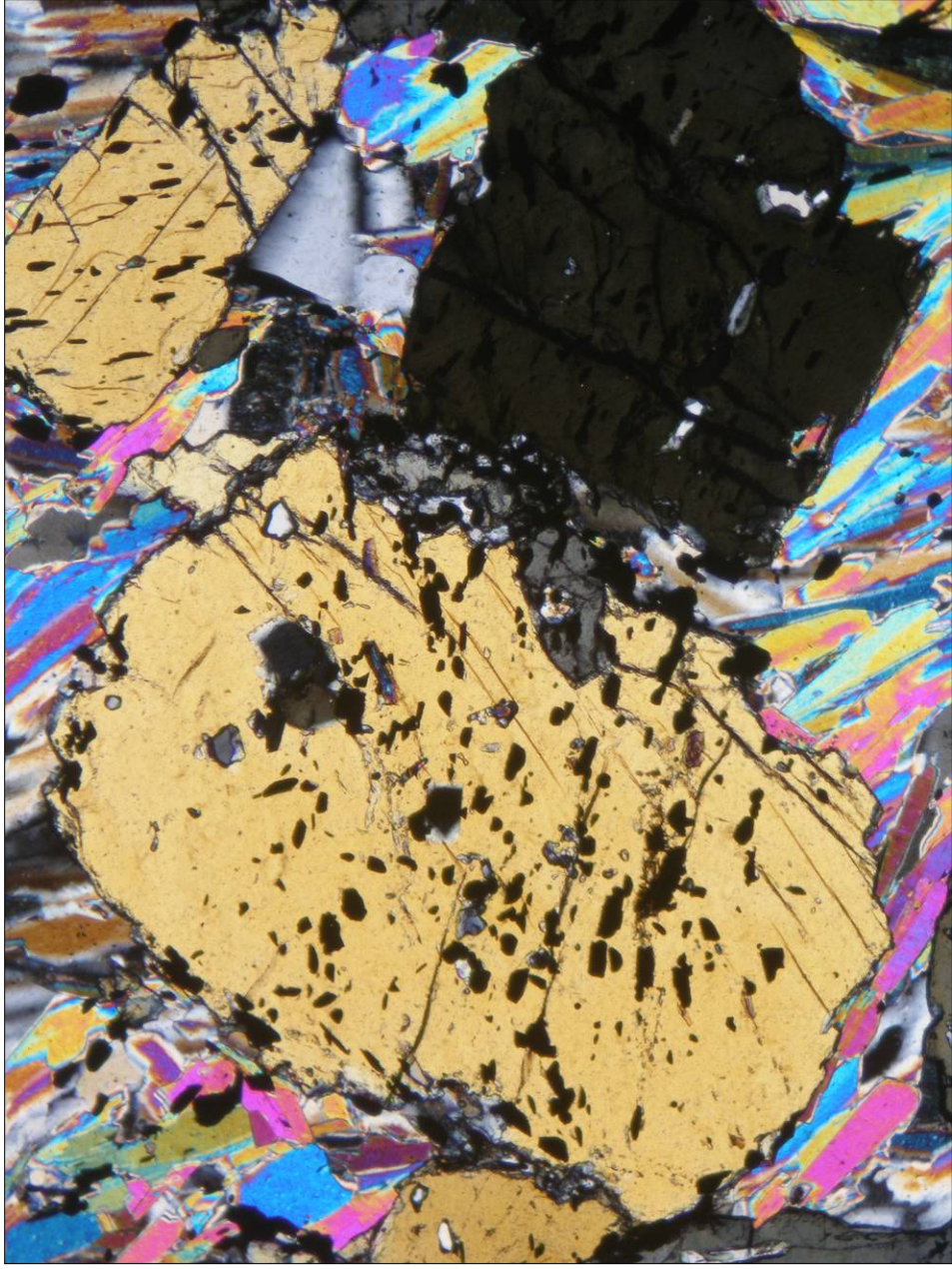
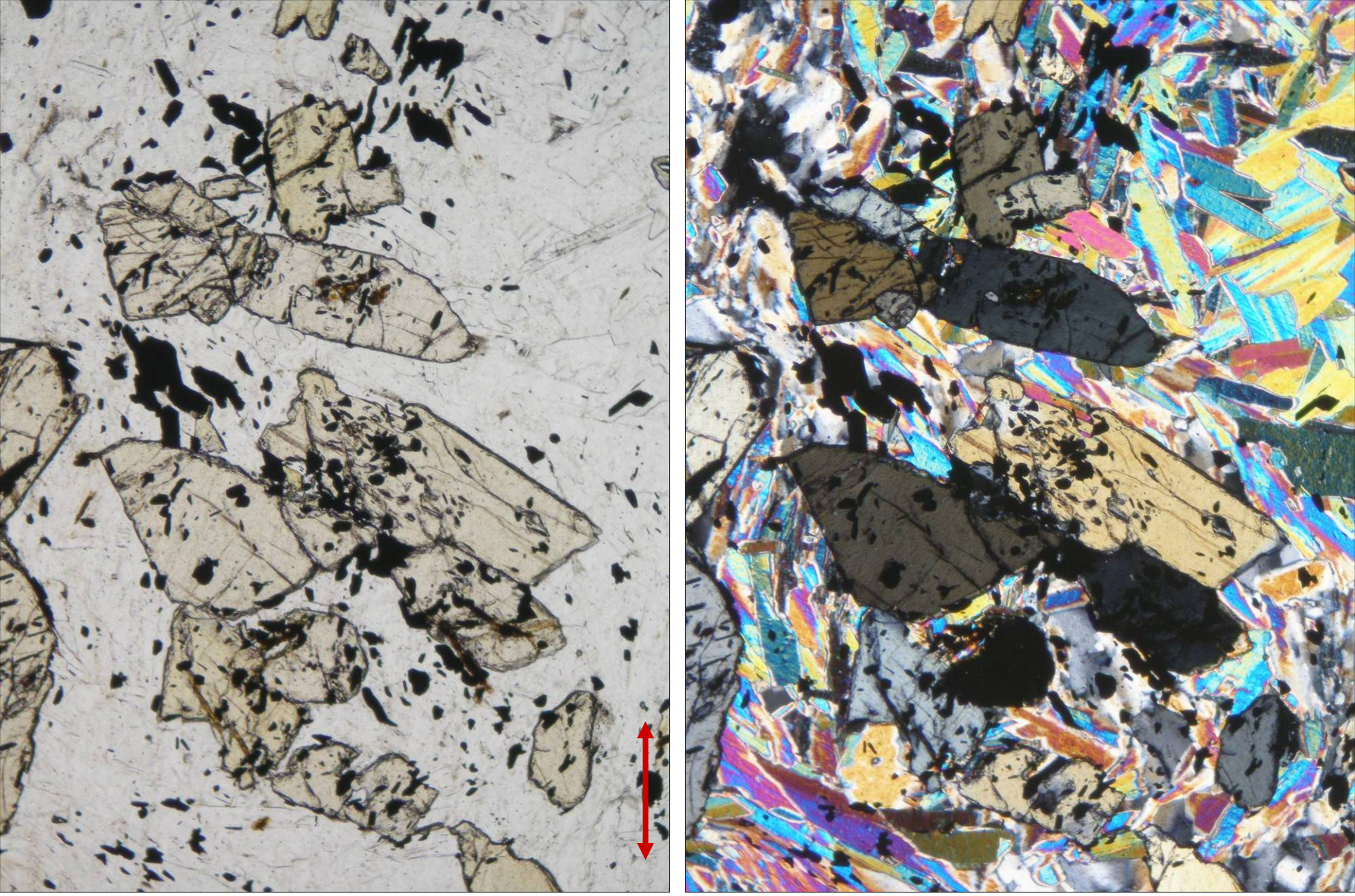
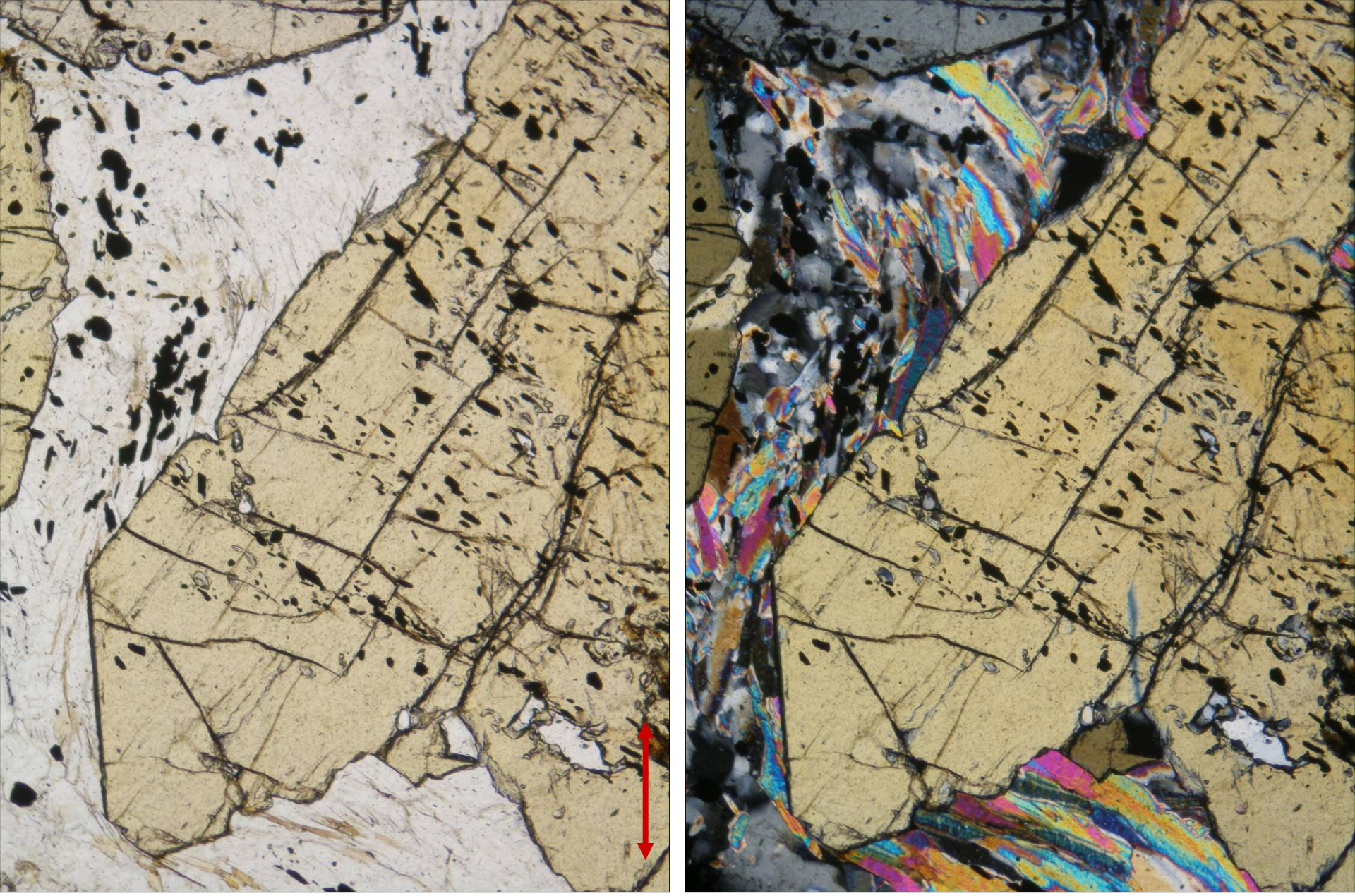




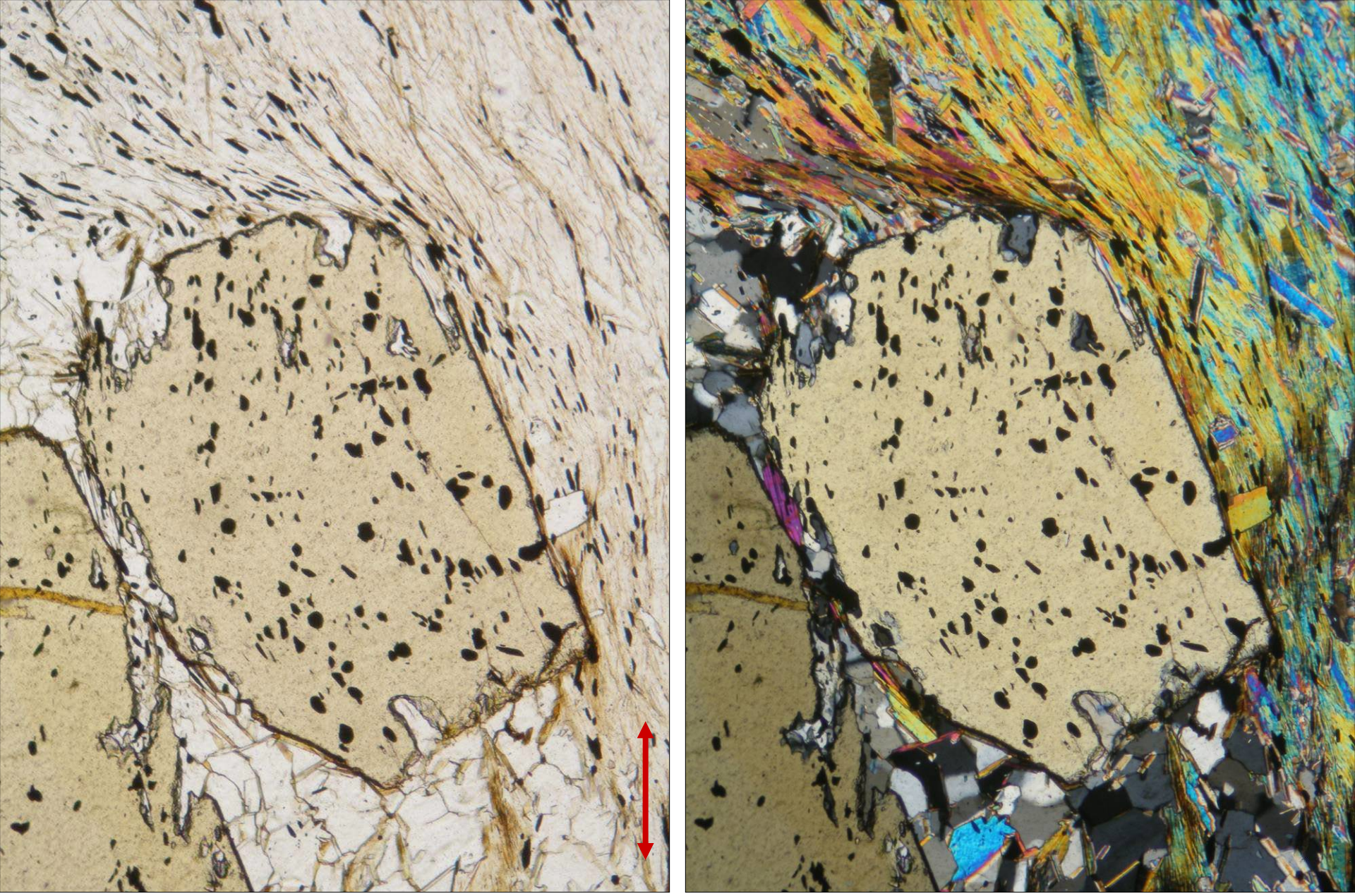
Staurolite with ilmenite inclusions in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



Staurolite in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



Staurolite and ilmenite in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



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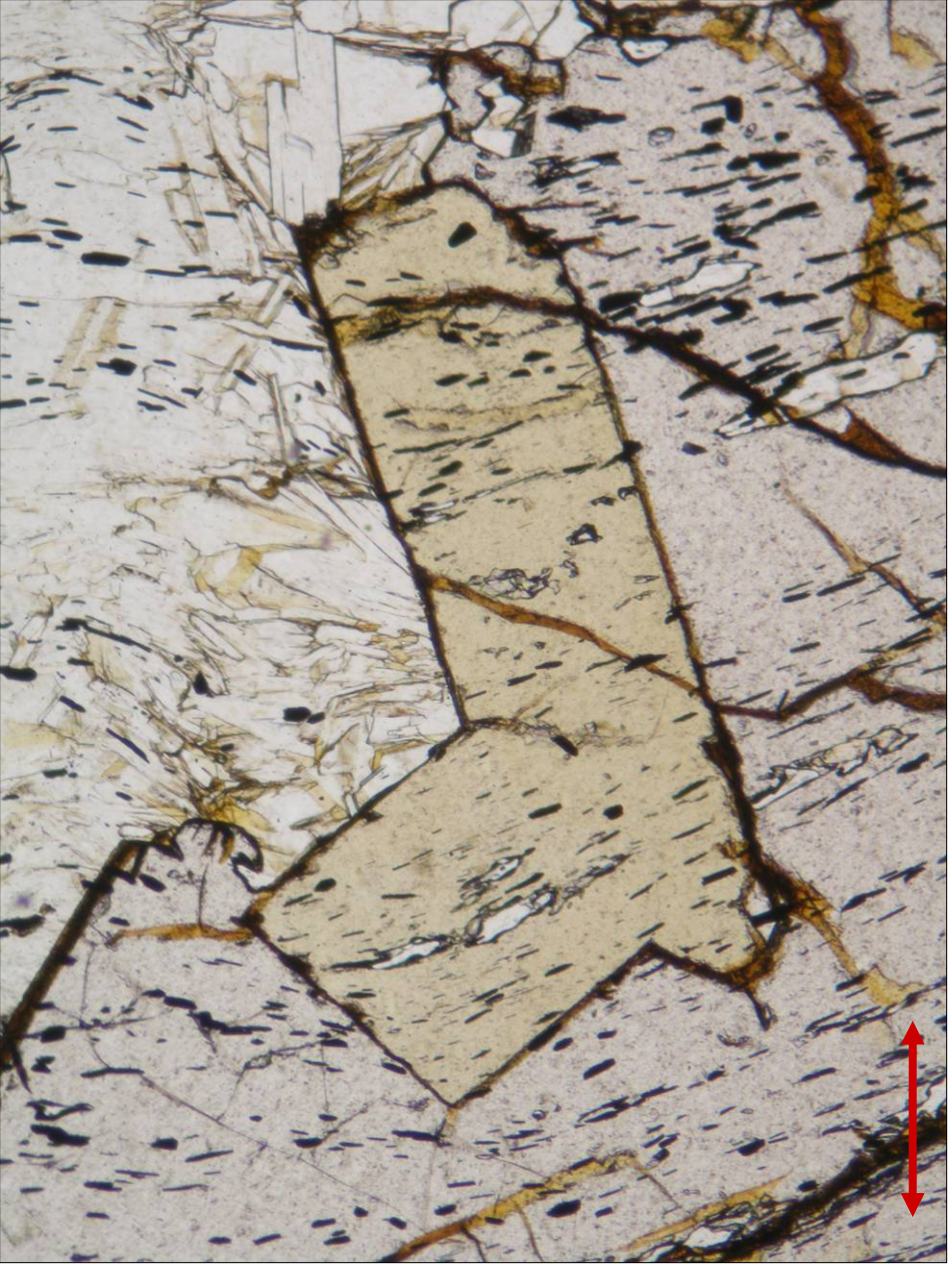
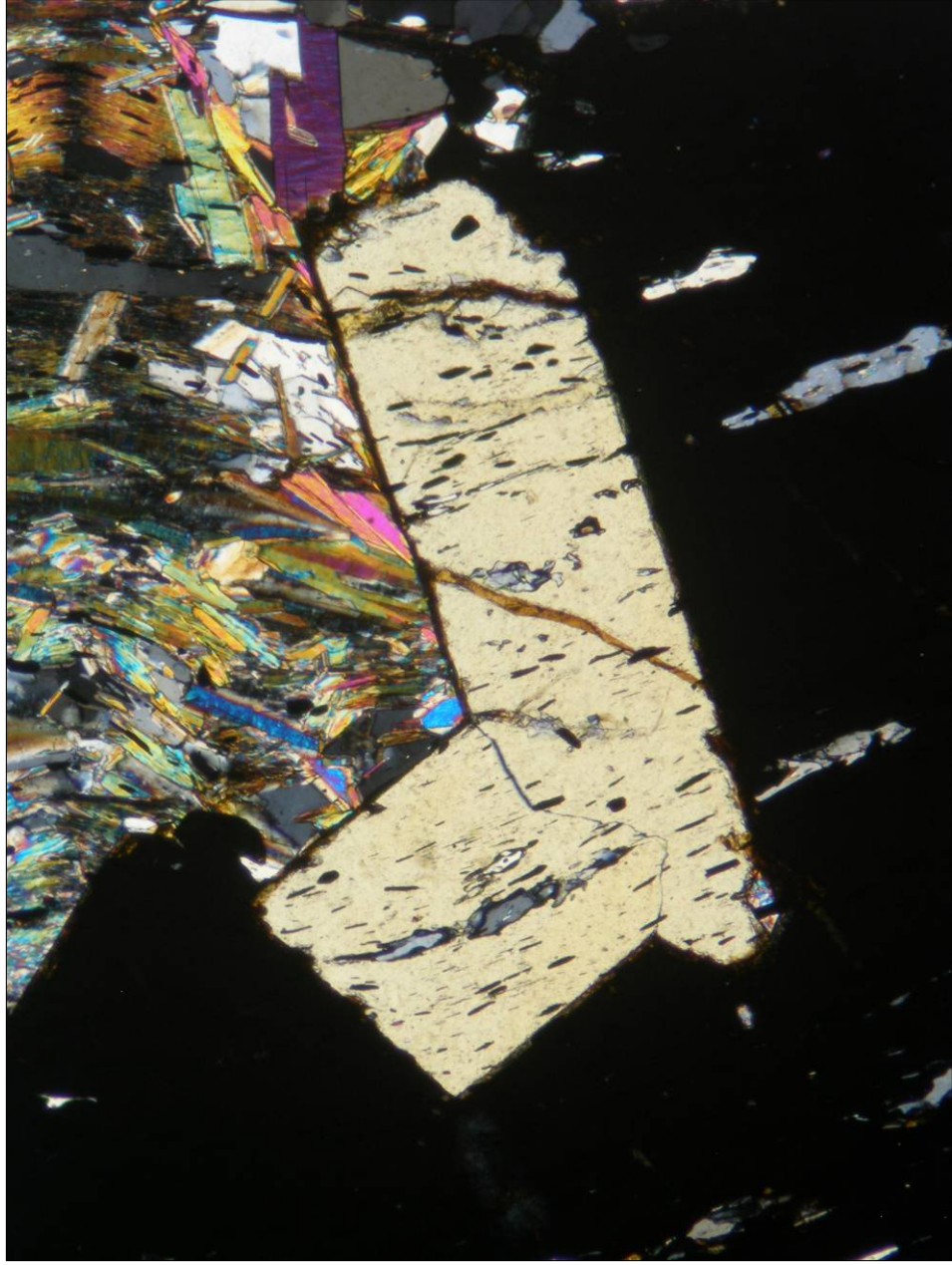
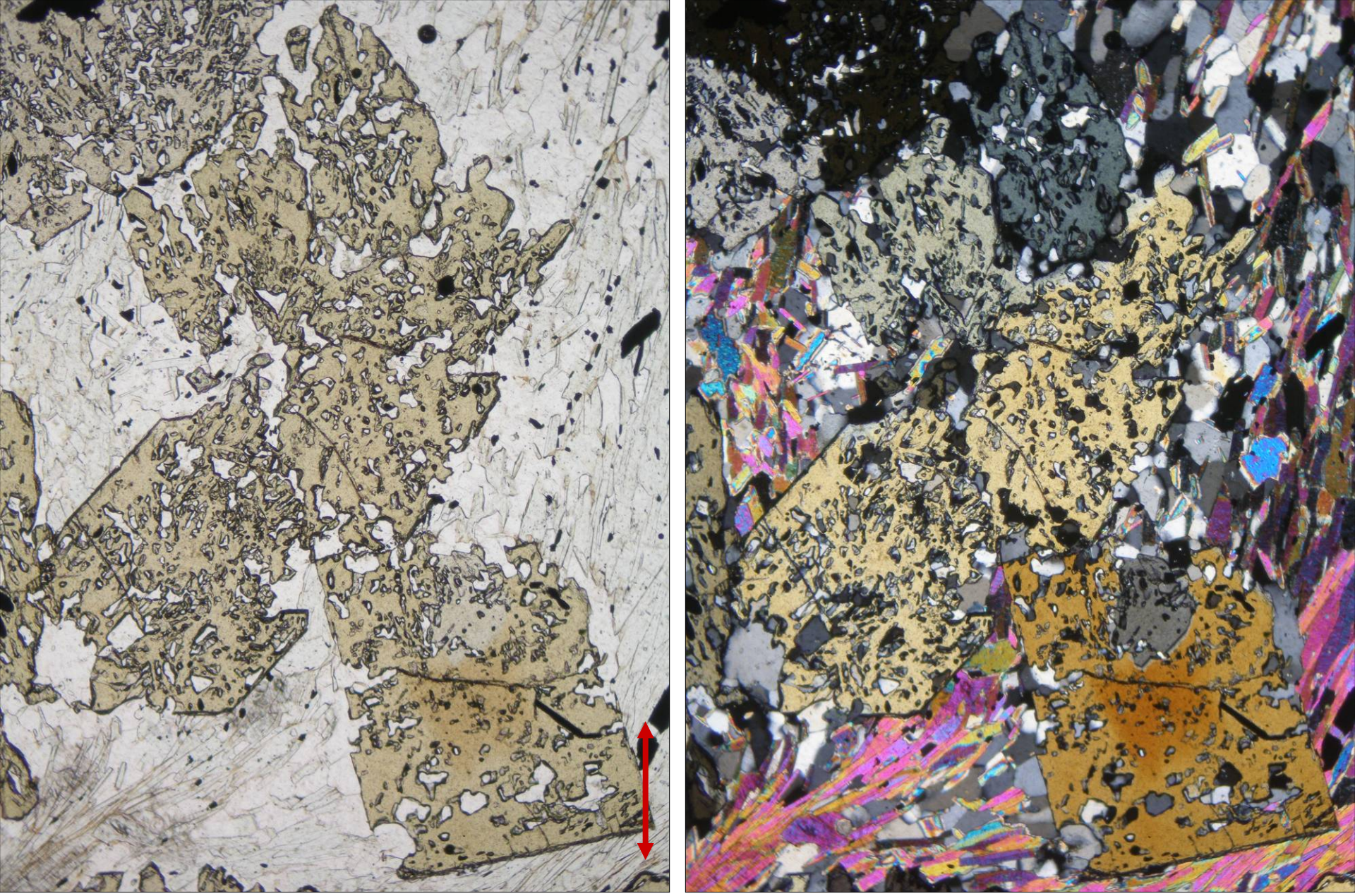




Staurolite and garnet in mica schist from Petrov nad Desnou, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



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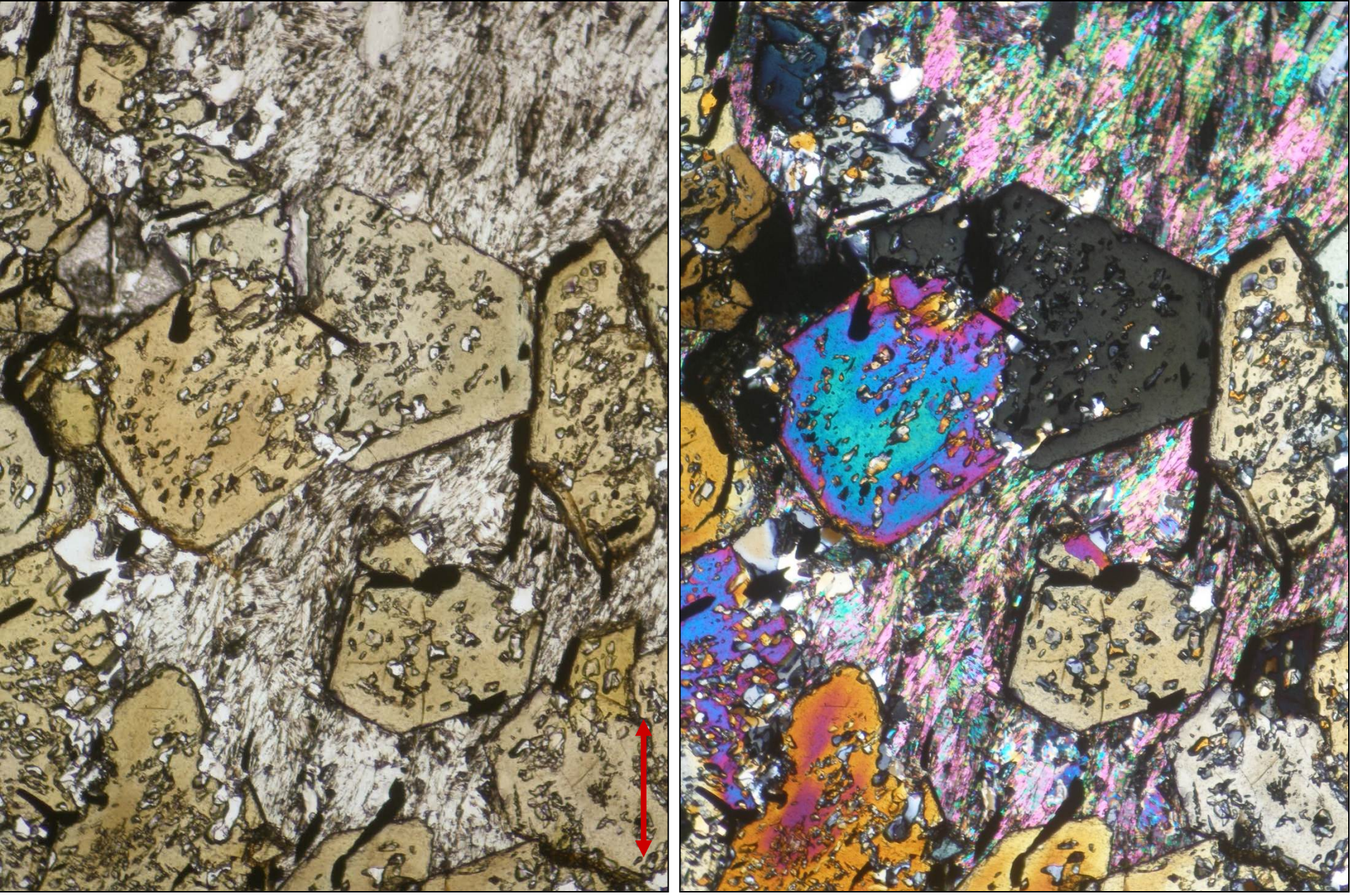

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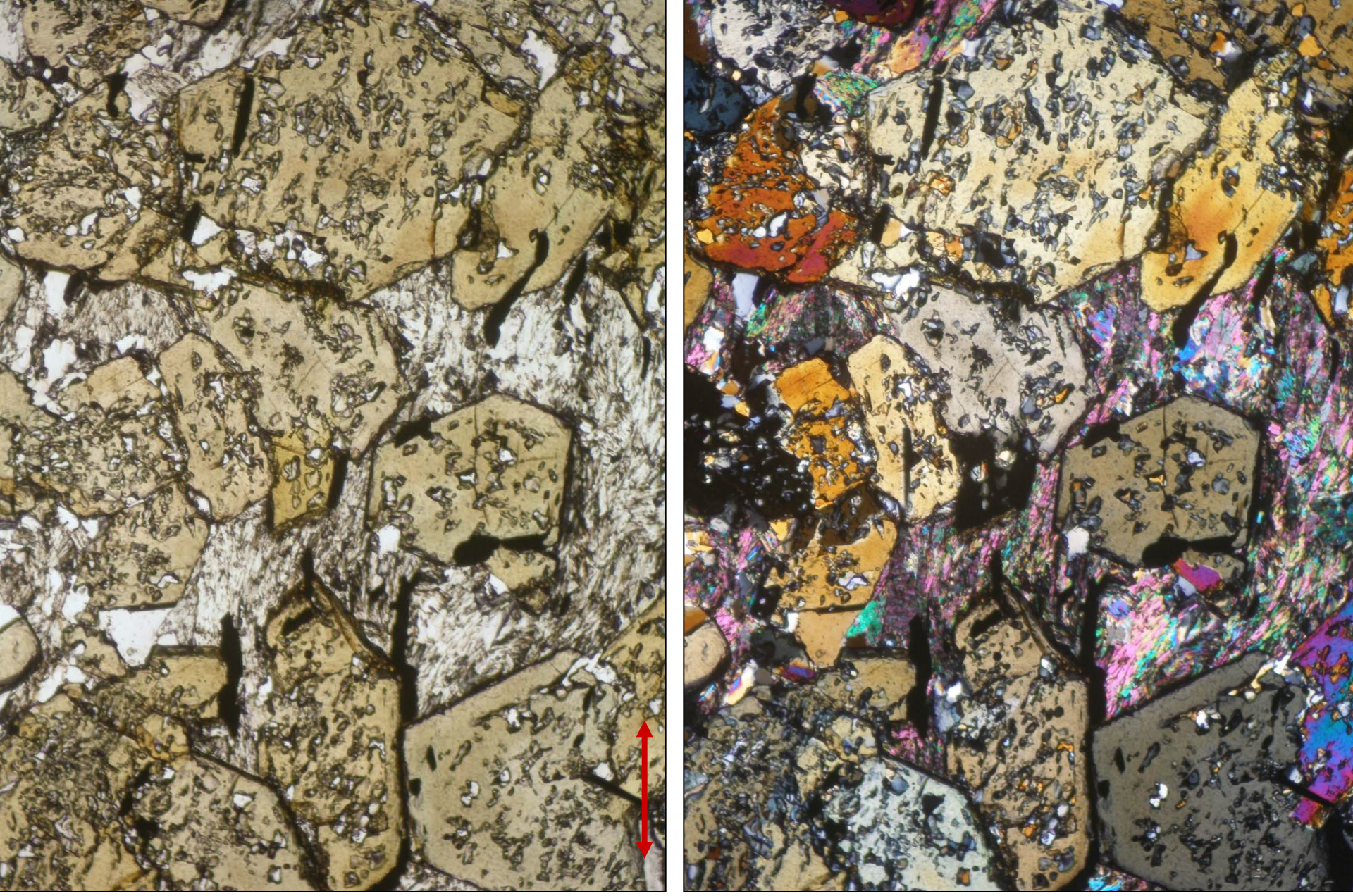

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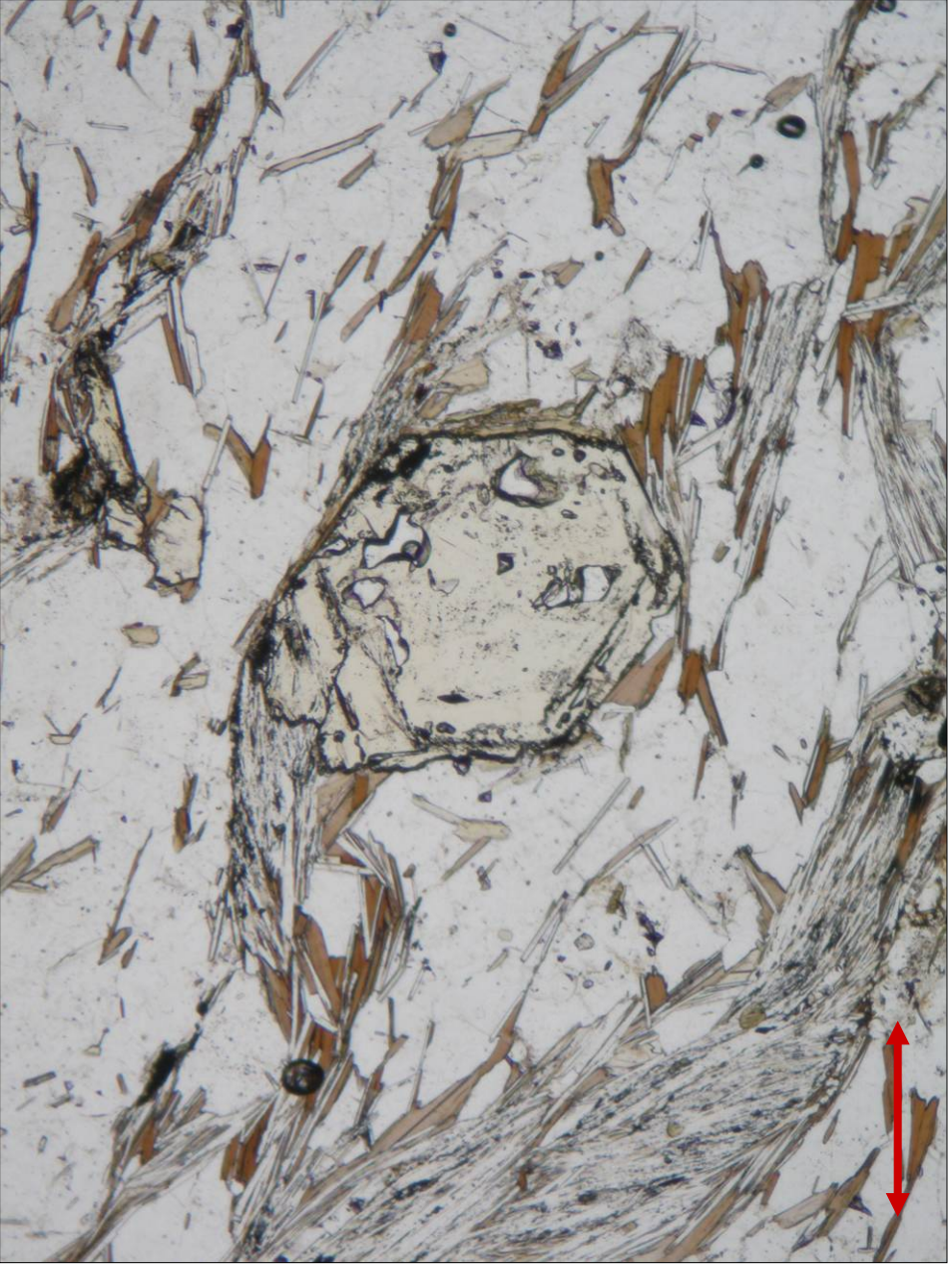
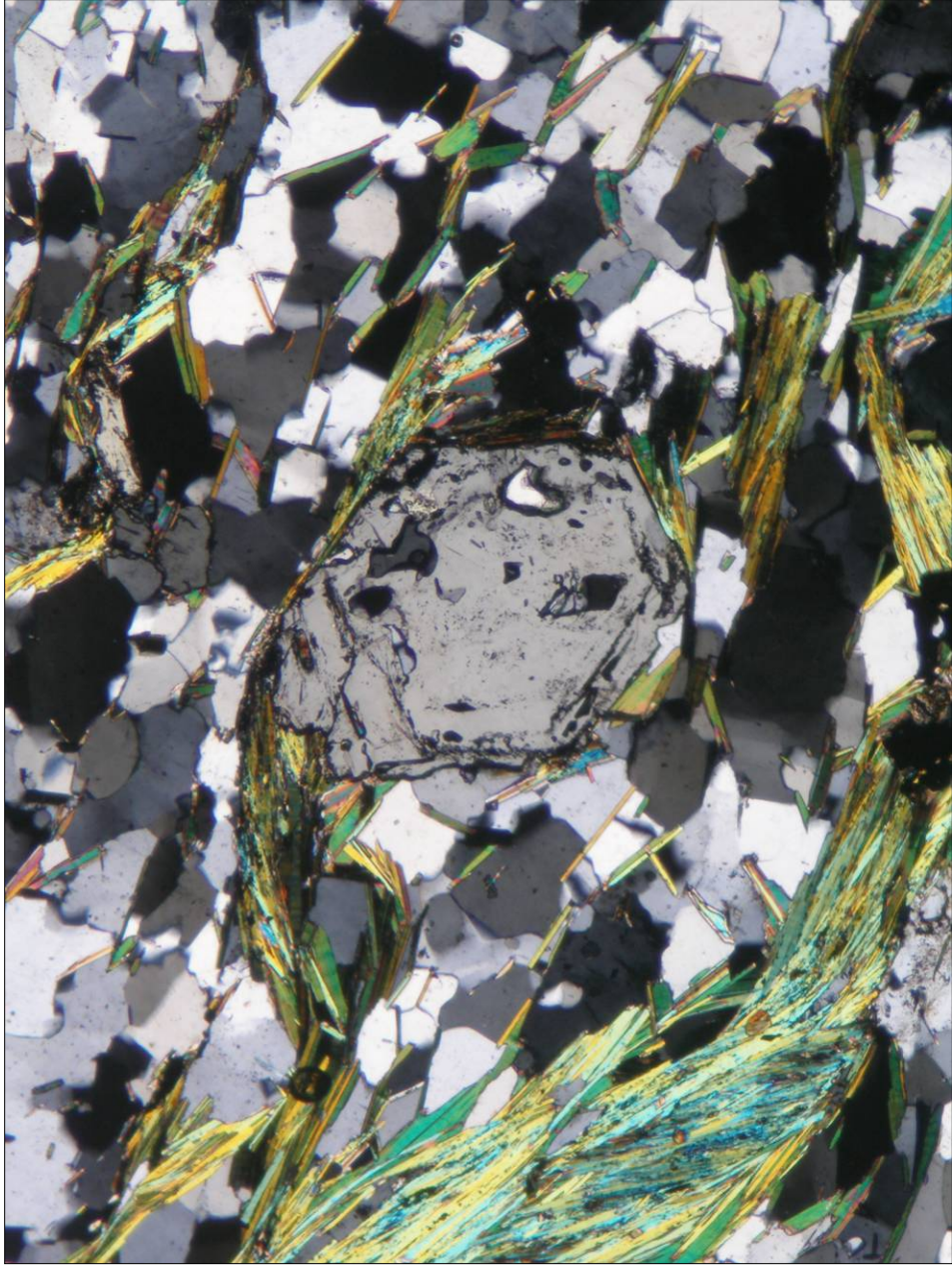
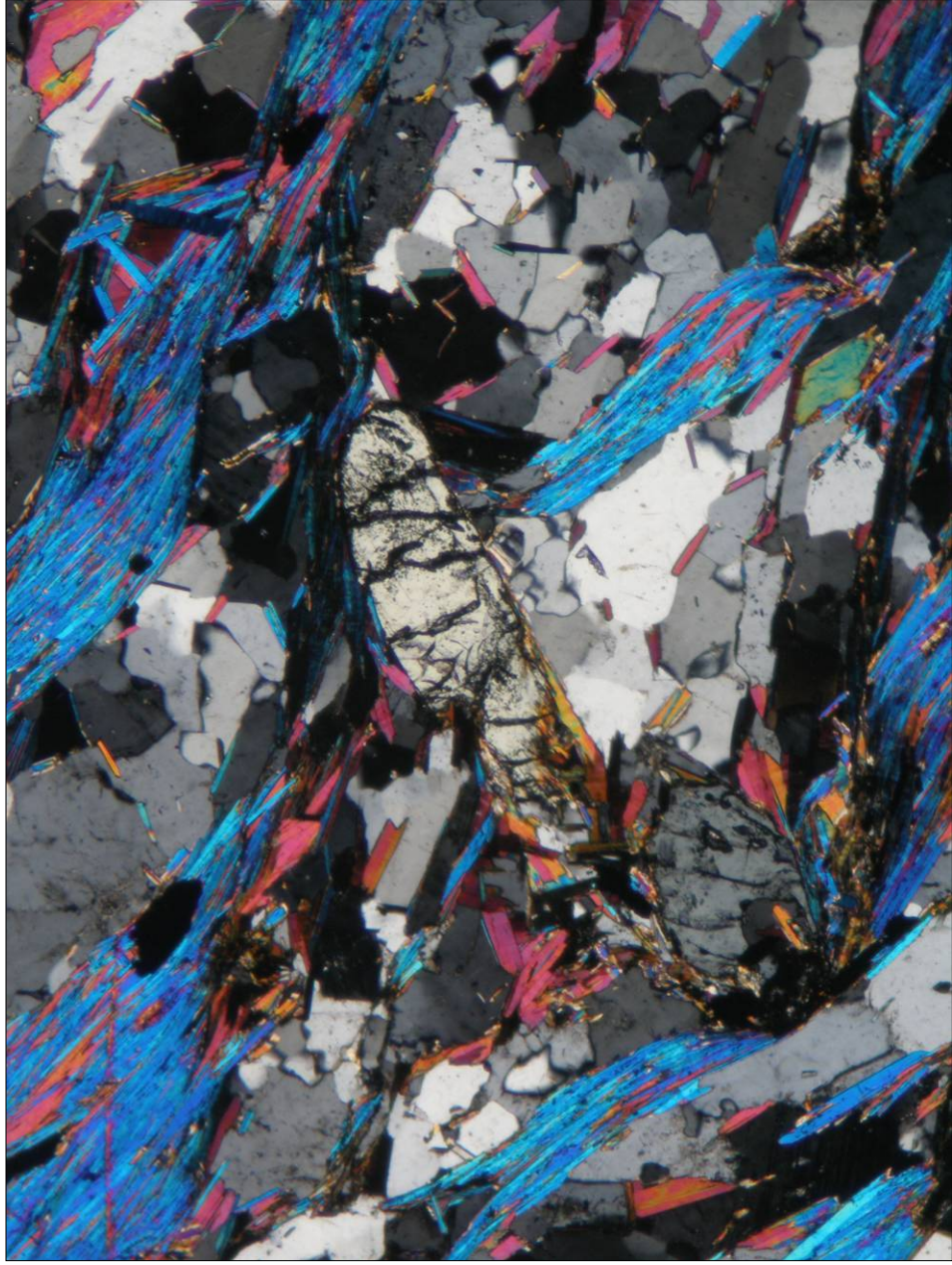
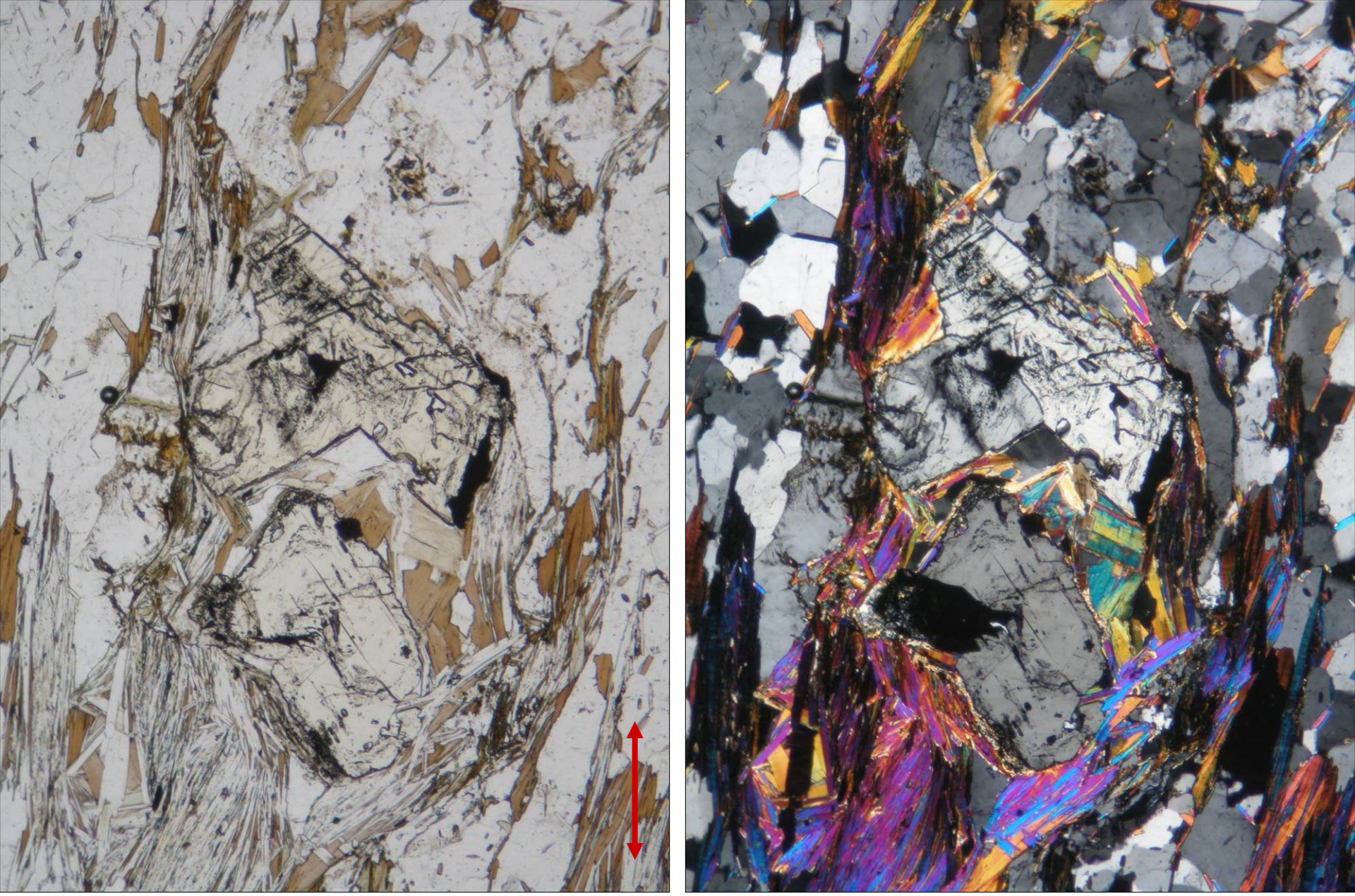




Staurolite porphyroblast in mica schist from Hardegg, Austria; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



Staurolite porphyroblasts in mica schist from Hardegg, Austria; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



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