KYANITE

Chemical formula: $Al_2[O|SiO_4]$

Crystal system: triclinic

Color in thin section: colorless, sometimes pleochroic with:

X = colorless
Y = light violet blue
Z = light cobalt blue

Form: long-bladed or columnar crystal, rarely fibrous

Cleavage: perfect on {100}, good on {010}

Indices of refraction: $n_\alpha = 1.710 – 1.718$ $n_\beta = 1.719 – 1.725$ $n_\gamma = 1.724 – 1.734$

Birefringence: 0.012 – 0.016

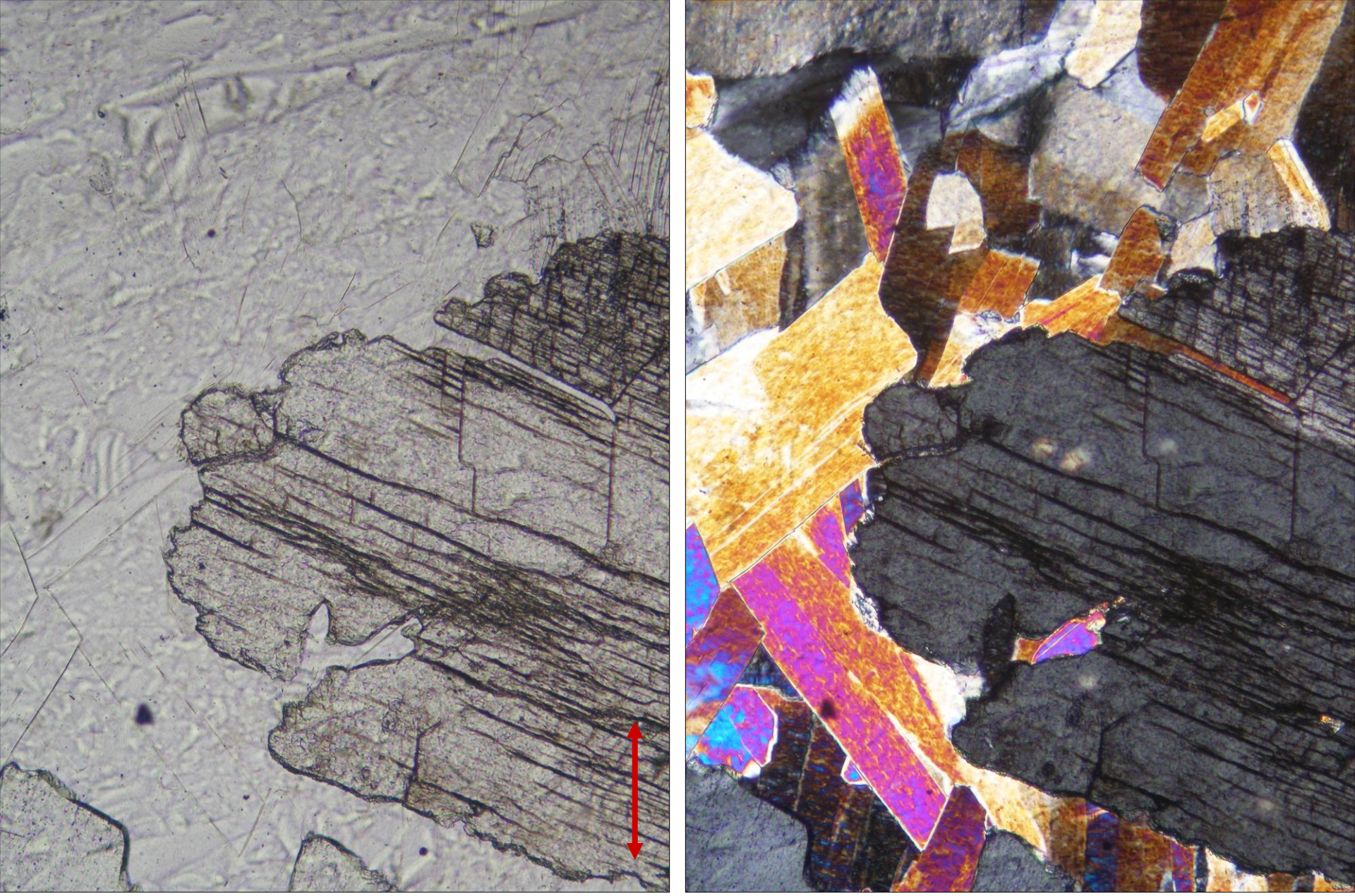
Optic sign: biaxial negative

Sign of elongation: positive

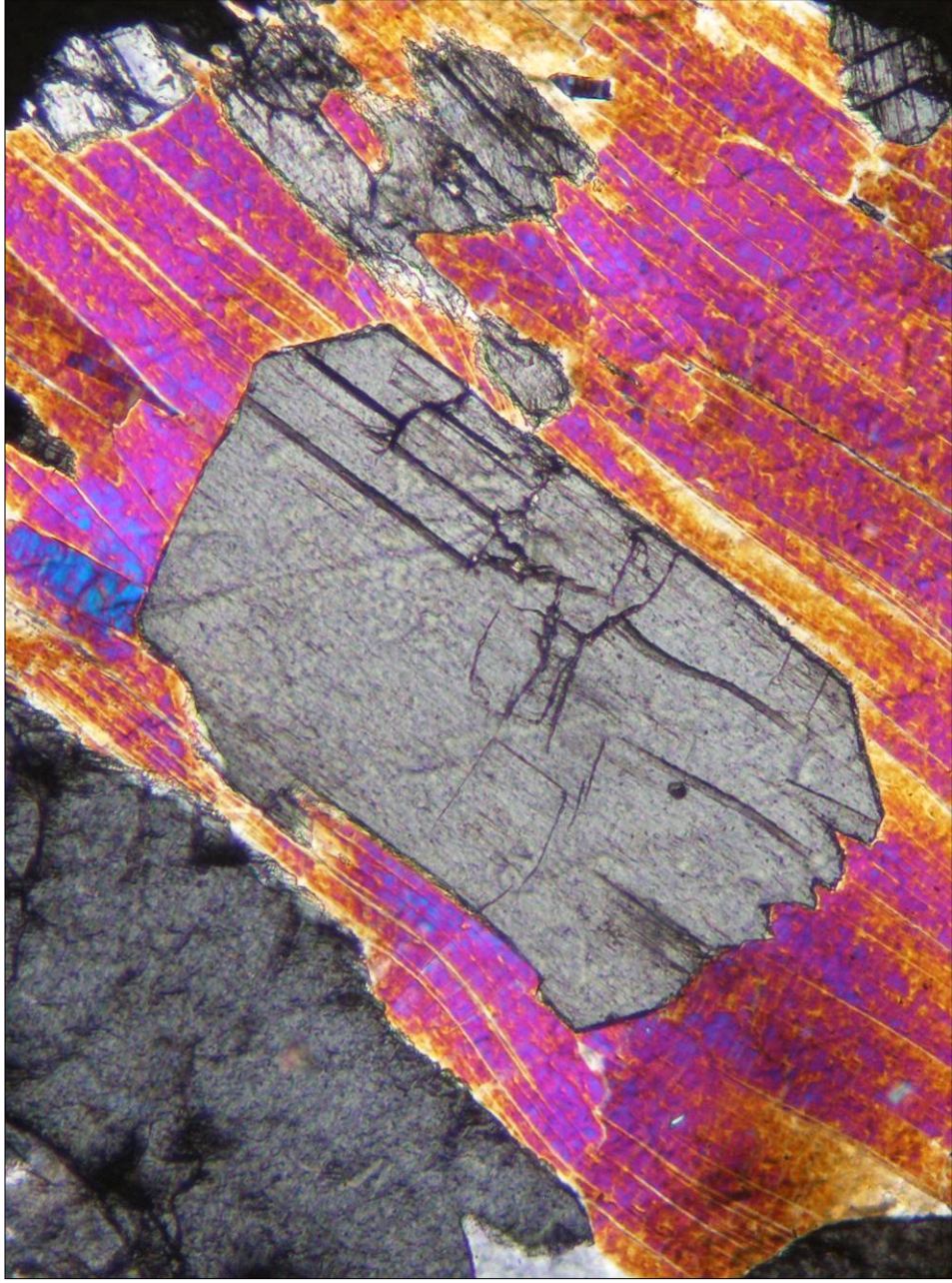
Alteration: may be altered to fine-grained muscovite (sericite), chlorite or pyrophyllite

Occurrence: mica schist, gneiss, granulite, eclogite, granitic pegmatite

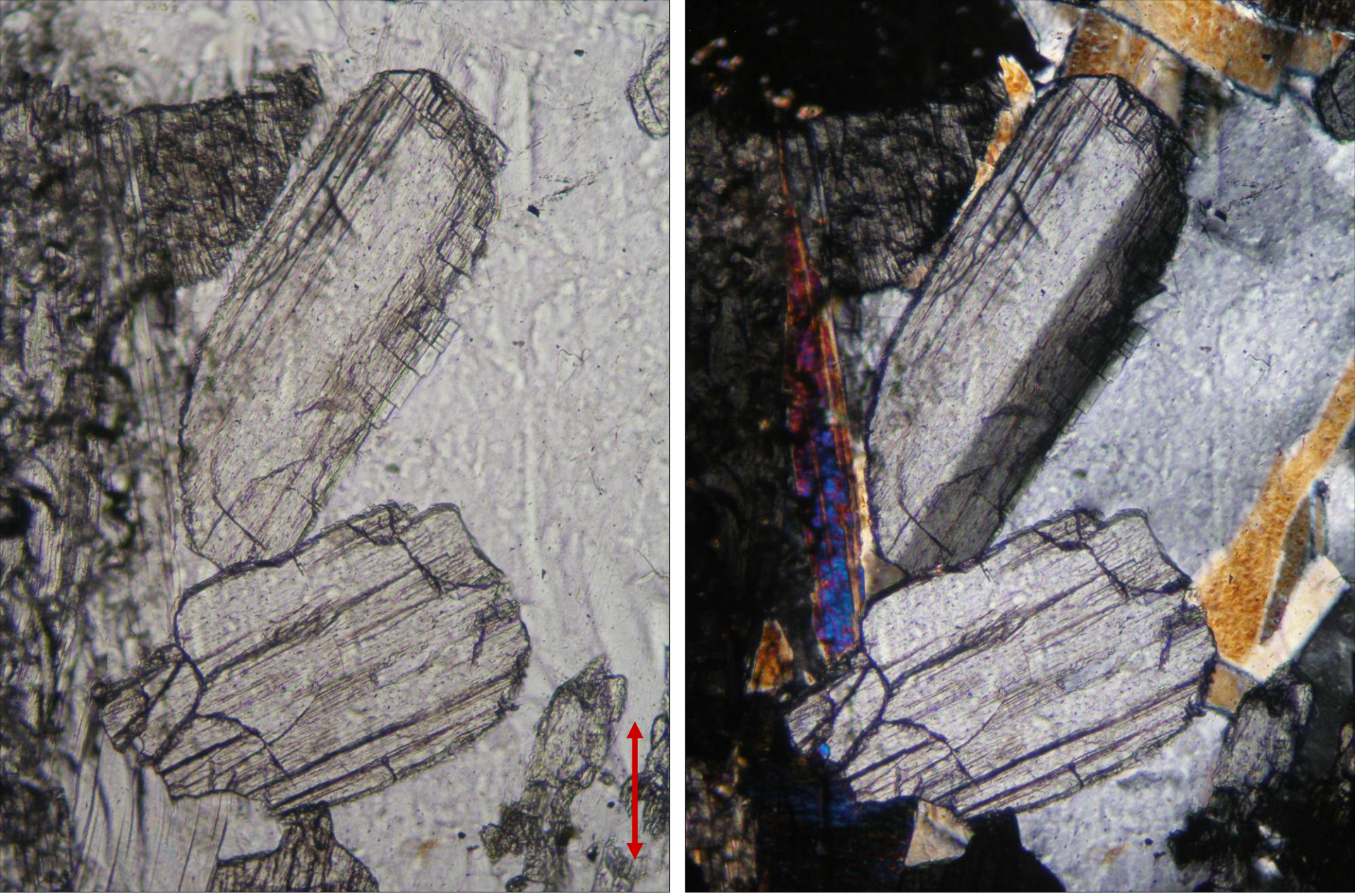
Similar minerals in thin sections: sillimanite (parallel extinction, lower indices of refraction), pyroxenes (higher direfringence)



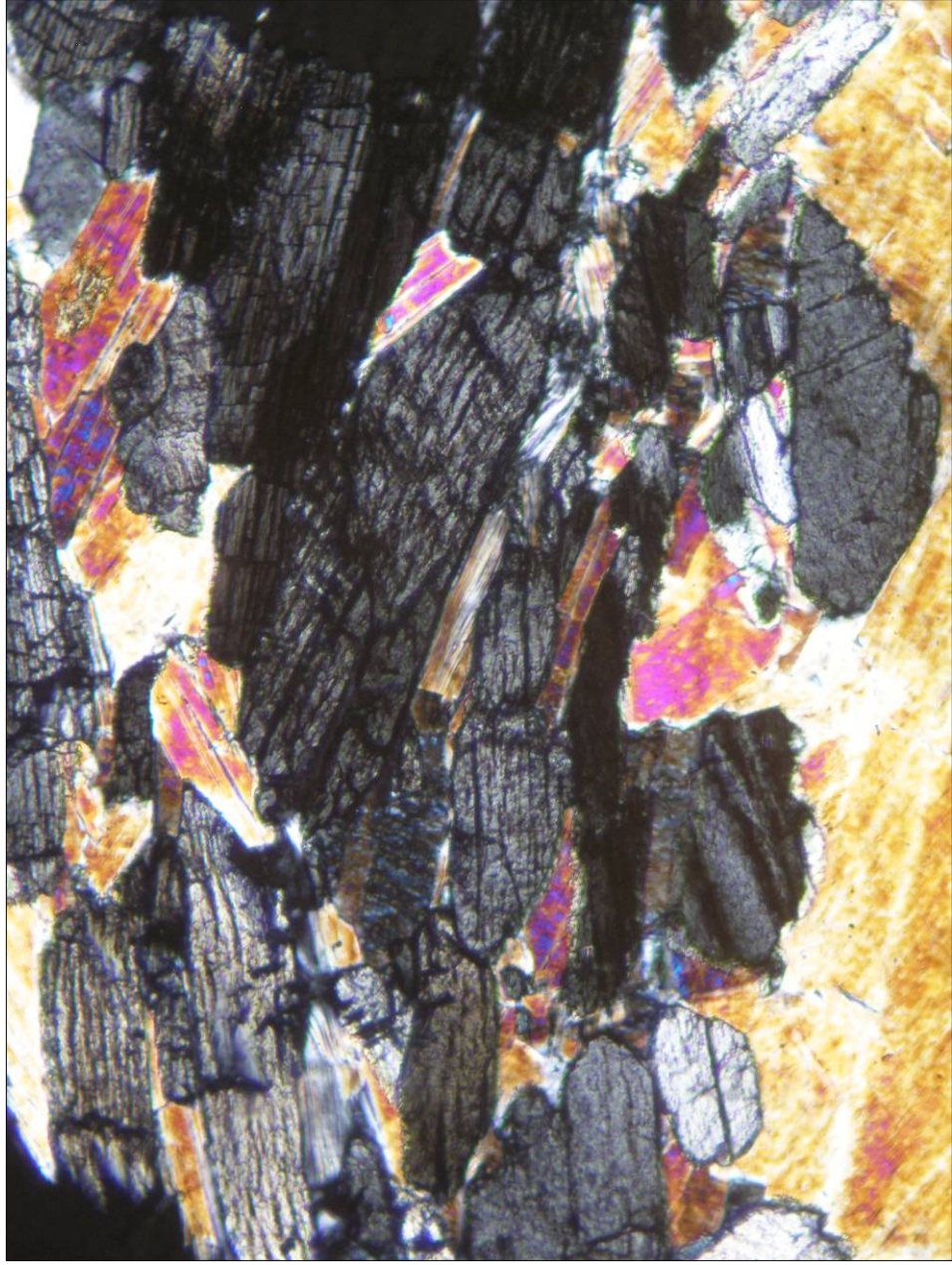
Kyanite and muscovite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.7 mm. Photo: JiZi.



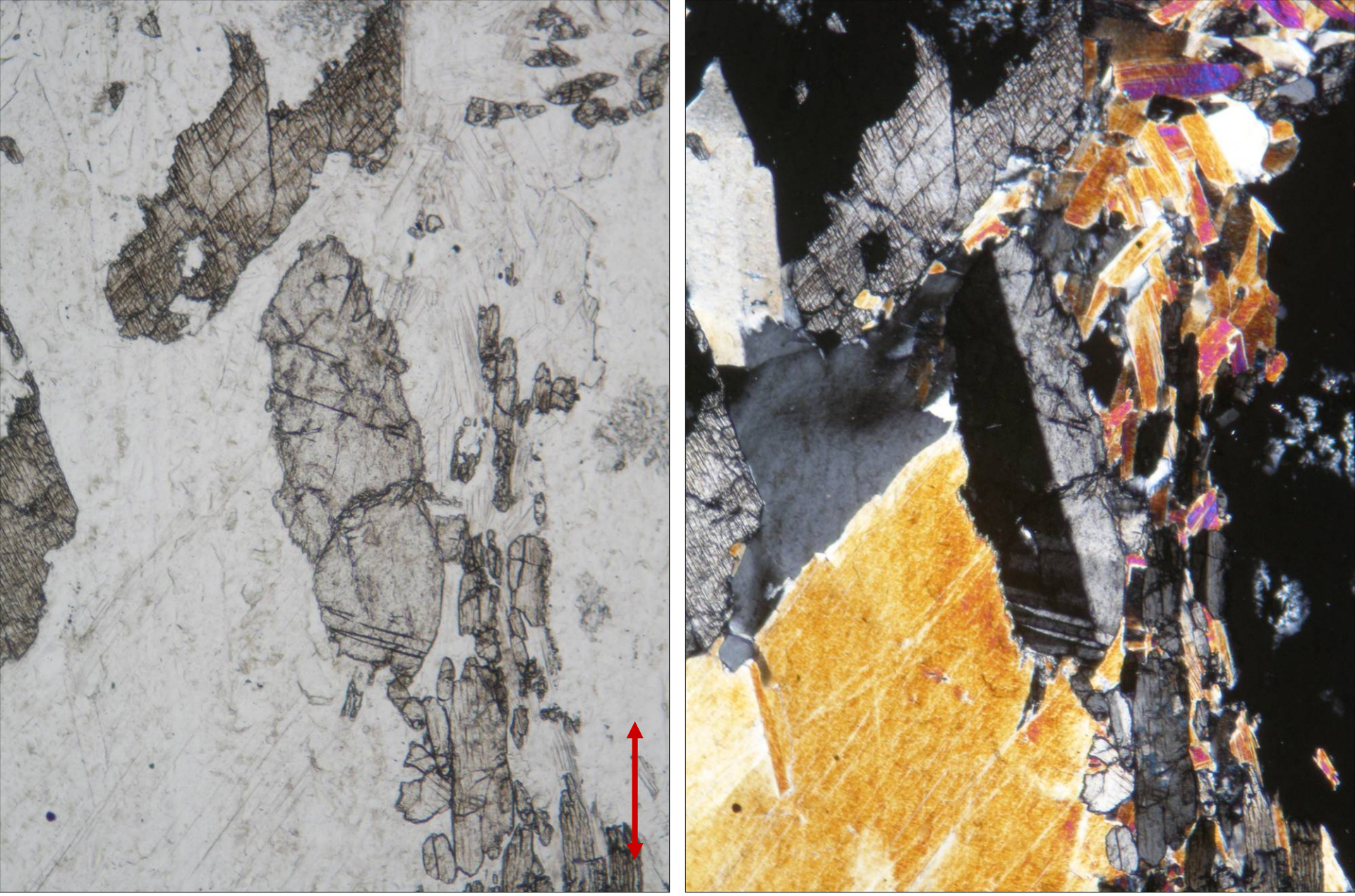
Kyanite and muscovite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.4 mm. Photo: JiZi.



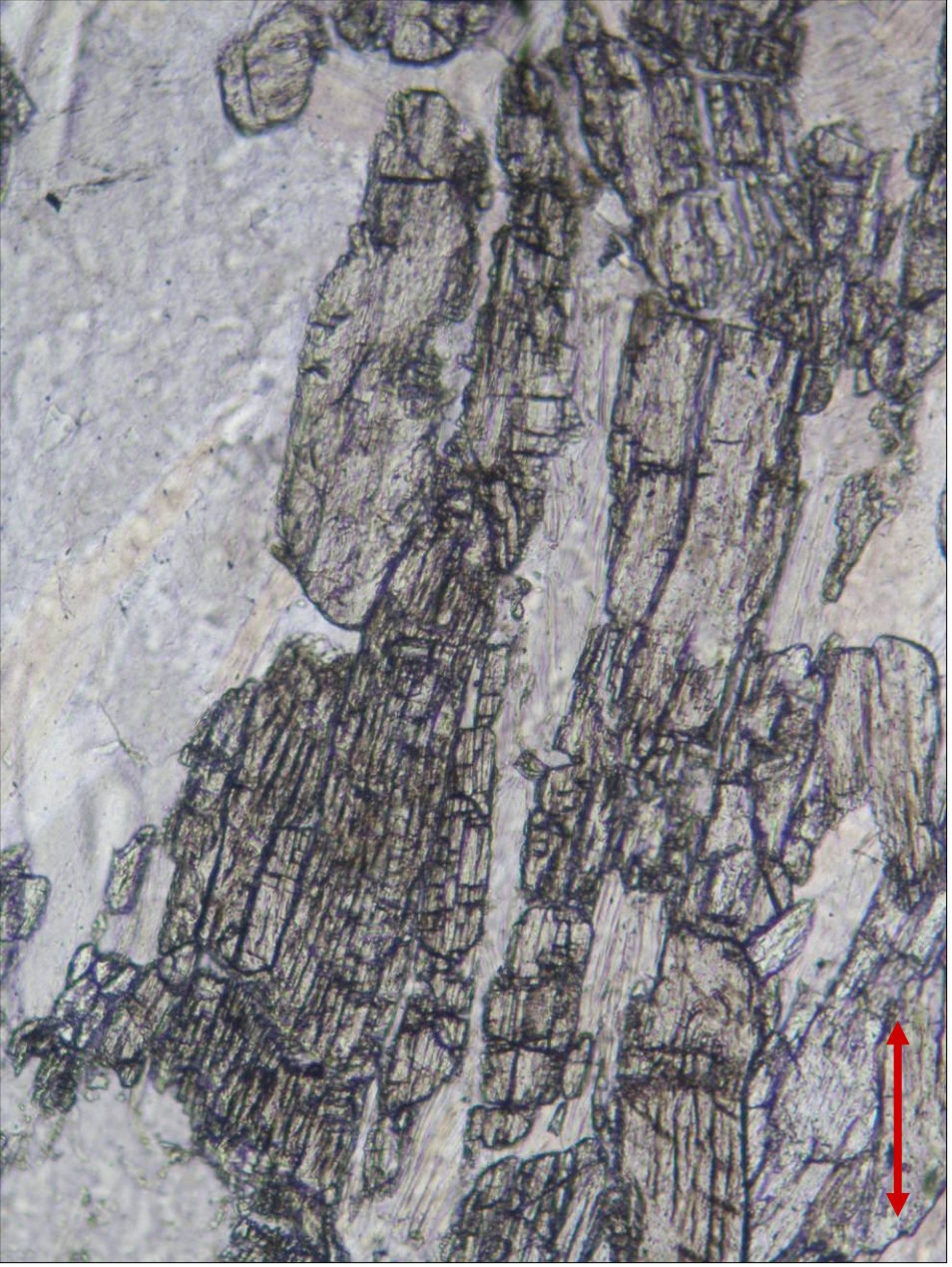
Kyanite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.6 mm. Photo: JiZi.

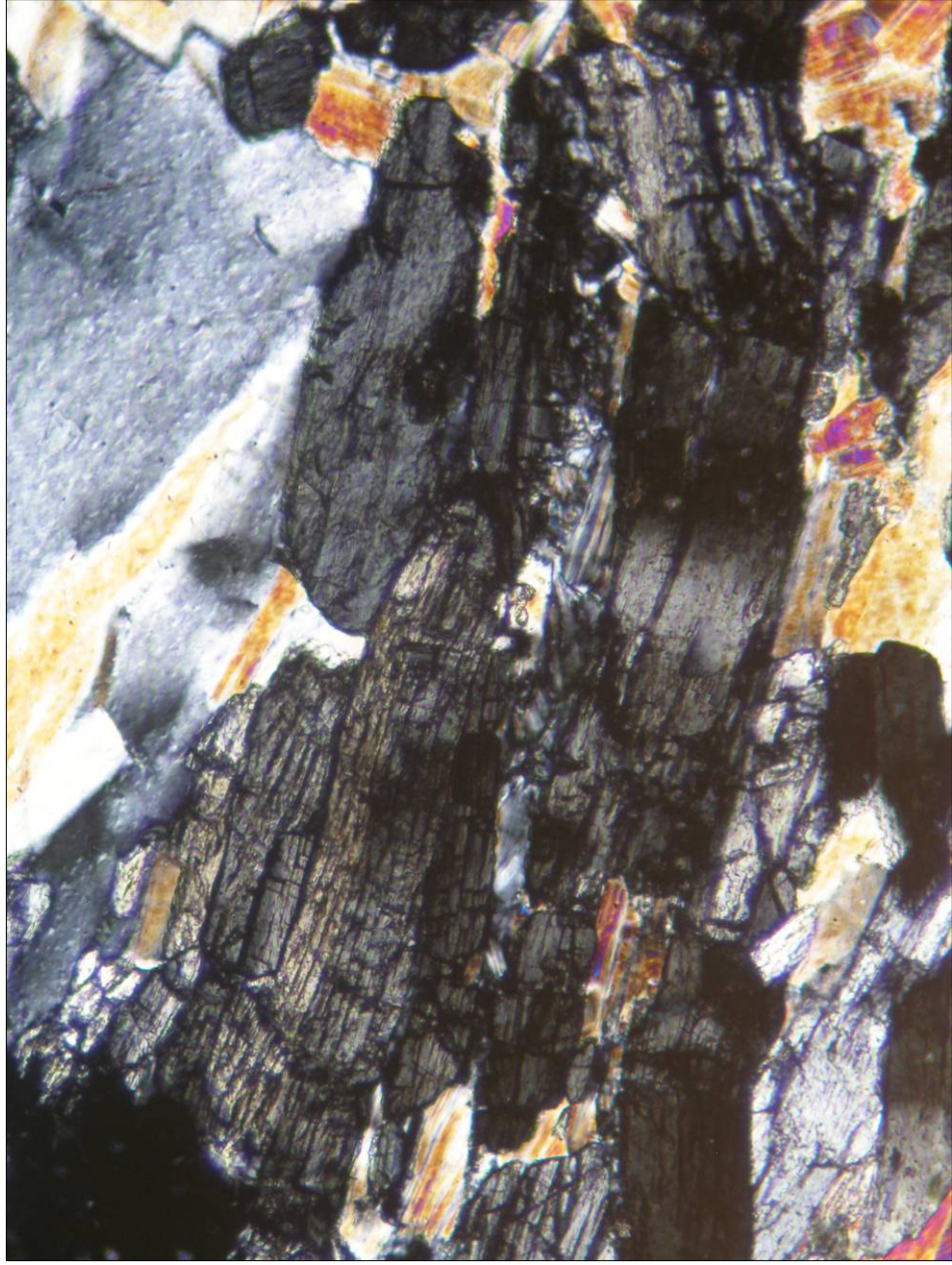


Kyanite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.7 mm. Photo: JiZi.



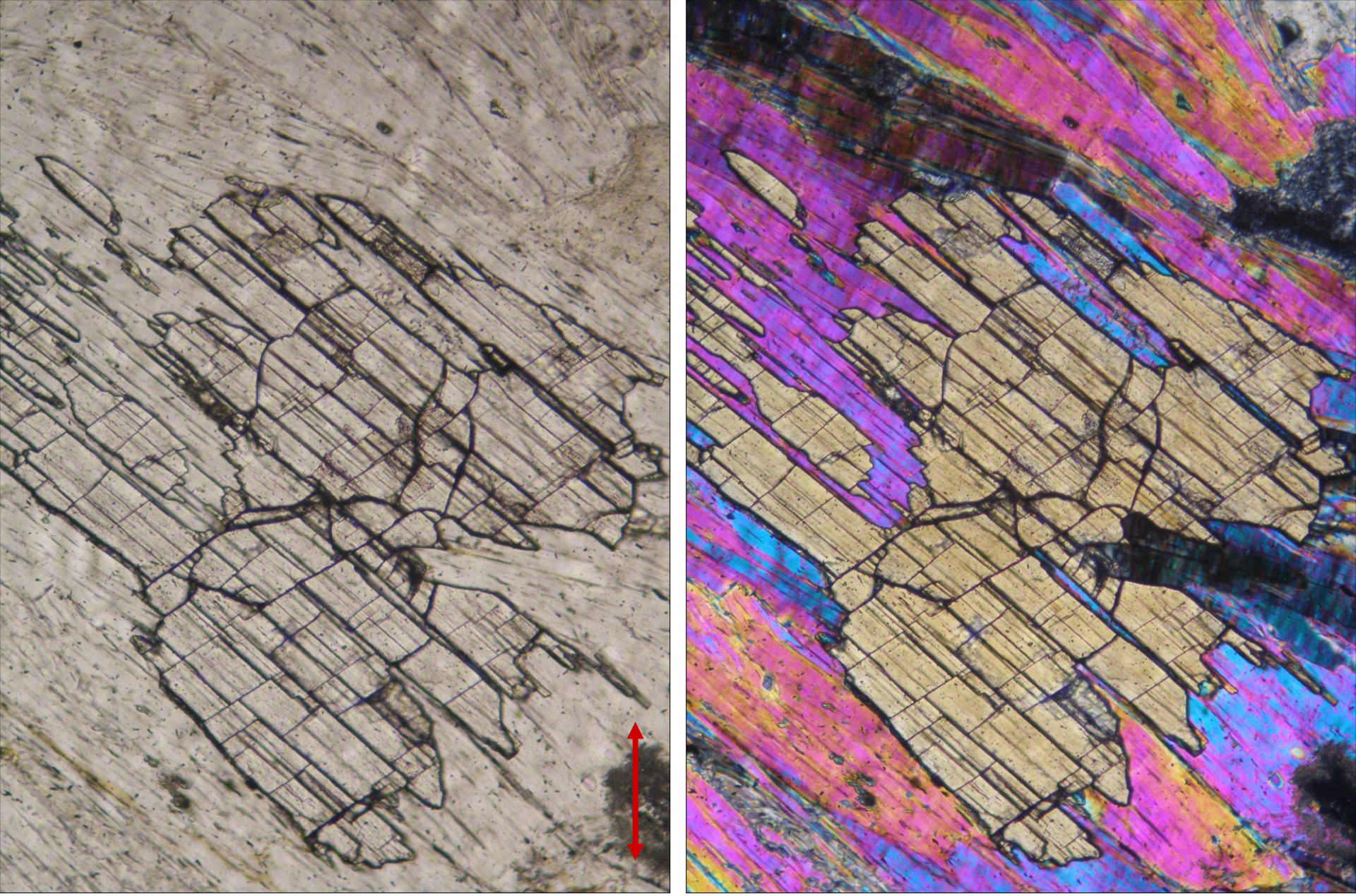
Kyanite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.





Kyanite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.

Kyanite and muscovite in migmatite from Kaňk near Kutná Hora, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.5 mm. Photo: JiZi.



Kyanite and muscovite in mica schist from Kovářová, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.7 mm. Photo: JiZi.

Kyanite in granulite from Plešovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.