

The Bertrand Lens – Performing Conoscopic Observation

An “Interference Figure” is a phenomena which details what a specimen produces at the rear focal plane of a transmitted light lens system. This colorful figure is used for material diagnosis and identification.

Interference Figures are achieved with certain specimens like crystals whose field of view becomes extinct when viewed under crossed polars.

To perform conoscopic observation:

- Place your specimen on the stage, usually a prepared slide.
- Engage the 40x objective by rotating the nosepiece into position.
- Bring your specimen into focus.
- Turn up the transmitted light illuminator up all the way to its brightest setting.

Note: Objectives should be centered otherwise specimen detail may move out of the field of view when turning the stage.

- Engage the analyzer which is the second slider below the viewing head and swing in the polarizer which is located just above the transmitted light.
- While looking into the eyetubes, rotate the polarizer and find the point in which the field becomes “extinct” or darkened.
- Engage the Bertrand lens which is the first slider below the viewing head.
- Immediately, one should observe some type of interference figure somewhat similar to what is shown below.
- Rotate the stage to observe the movement and coloration of *isochromes* and *isogyres* which are the colored and blackened figures you observe.

