birefringence noun

bi·re·frin·gence ˌbī-ri-ˈfrin-jən(t)s

plural birefringences

1 : the refraction of light in an anisotropic material (such as calcite) in two slightly different directions to form two rays

According to G. Blom of Philips, video disc acrylics must be optically clear and free of striations and *birefringence*. Clear vinyl often is highly birefringent.
– *Technical Survey*

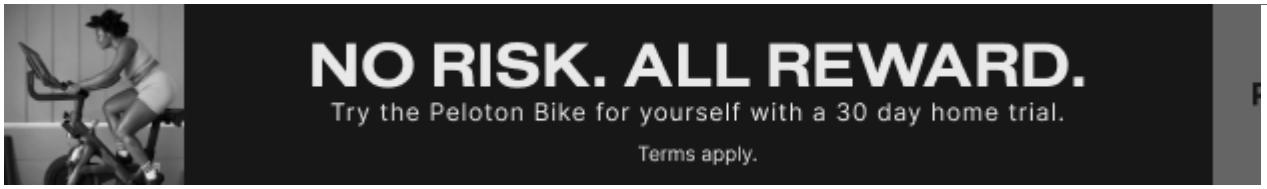
→ called also *double refraction*

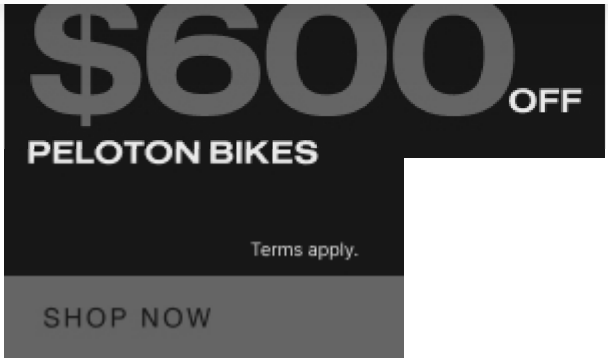
2 : the visual effect produced by birefringence

The diagnosis was made before scanning in 22 patients by the detection of deposits with apple-green *birefringence* ...
– Philip N. Hawkins et al.

3 : the difference between the angles of refraction of light rays exhibiting birefringence

ˌbī-ri-ˈfrin-jənt **adjective**





Recent Examples on the Web

To get a faster response time on the PG27AQN, Asus made an IPS panel with liquid crystals carrying higher *birefringence* (basically, light refraction in two directions) and lower viscosity (or stickiness) to allow the liquid crystals to twist rapidly so light can pass through.

– Scharon Harding, *Ars Technica*, 8 Jan. 2022

When light passes through this region of space where vacuum *birefringence* occurs, it gets polarized, but only if this phenomenon inherent to quantum field theory is true.

– Ethan Siegel, *Forbes*, 7 May 2021

Icelandic spars are crystals of calcium carbonate which have a special property called *birefringence*: light hitting the mineral is split and follows two parallel paths through it, which explains how calcite makes objects look doubled.

– Douglas Main, *Discover Magazine*, 4 Nov. 2011

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Etymology

International Scientific Vocabulary BI- entry 1 + *refringent* refracting, from Latin *refringent-, refringens*, present participle of *refringere* to break up — more at REFRACT

First Known Use

1879, in the meaning defined at sense 1

Time Traveler

The first known use of *birefringence* was in 1879

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"Birefringence." *Merriam-Webster.com Dictionary*, Merriam-Webster, https://www.merriam-webster.com/dictionary/birefringence. Accessed 30 Dec. 2023.

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also **:** the visual effect produced by birefringence

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– Philip N. Hawkins et al., *The New England Journal of Medicine*

-jənt **adjective**

Britannica.com: Encyclopedia article about *birefringence*

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