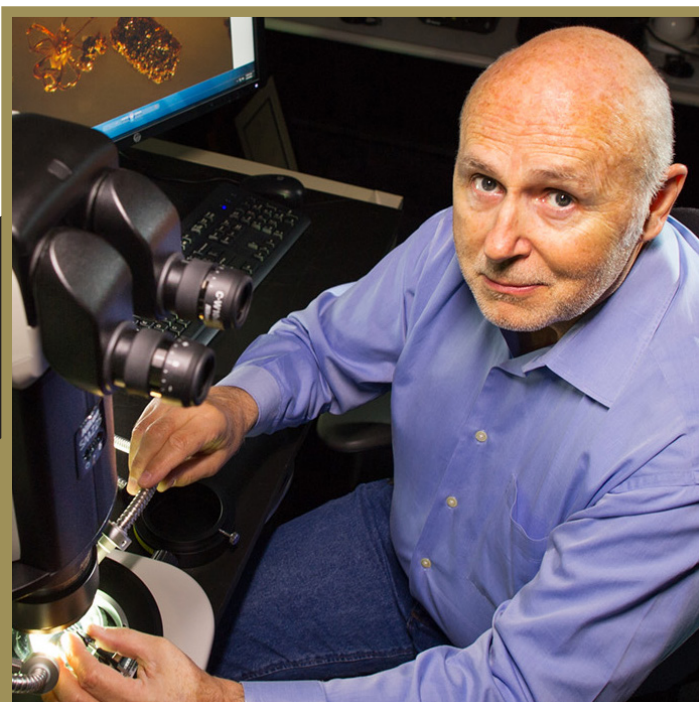
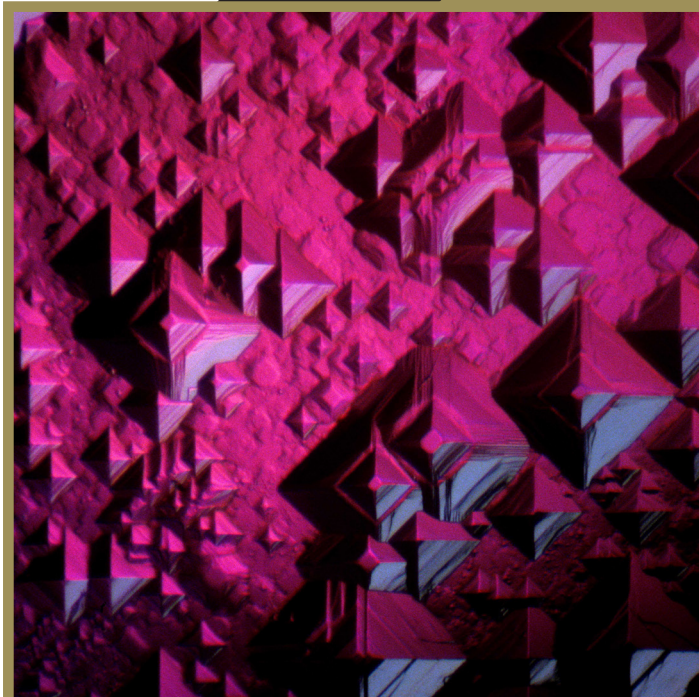


MEET JOHN KOIVULA



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FEATURE interview

Meet John Koivula

John Koivula joined the GIA in 1976. He has spent more than fifty years studying and photographing the microworld of gemstones and has published numerous articles and notes on inclusions in gemstones and related topics.

John is a contributor to several books including the American Geological Institutes Glossary of Geology, Robert Webster's Gems, Geologica, a book on crustal landforms, and the GIA's Diamond Dictionary.

Mr. Koivula is co-author with Dr. E. Gübelin of the Photoatlas of Inclusions in Gemstones, Volumes 1, 2 and 3, and the author of The MicroWorld of Diamonds.

John holds university degrees in both geology and chemistry, the gemological credentials: G.G., C.G., F.G.A., and he was awarded fellowship in the Royal Microscopical Society (FRMS). He is an honorary life member of the Finnish Gemmological Society and the Gemmological Association of Great Britain and was named as one of the 64 most influential people of the 20th century in the jewelry industry by Jewelers' Circular Keystone Magazine. His awards include GIA's Richard T. Liddicoat Award for Distinguished Achievement, the Robert M. Shipley and Richard T. Liddicoat awards from the American Gem Society, the Scholarship Foundation Award from the American Federation of Mineralogical Societies, and the Antonio C. Bonanno Award for excellence in gemology by the international Accredited Gemologists Association.

He previously worked for Cominco American as an exploration field geologist and is currently the analytical microscopist at the Gemological Institute of America, headquartered in Carlsbad, California.

Without question, John Koivula is the master of gemstone inclusion photography. His Photoatlas of Inclusions in Gemstones (Volumes 1, 2 & 3) is undoubtedly the most valuable reference tool available to gemmologists today. Replacing the need to have physical samples, they provide the most comprehensive and exhaustive collection of inclusion photographs available.

We were thrilled to not only include some of his wonderful photographs in this issue but also to get some insight to what makes John tick.

A giant in our industry and a very friendly one at that!

When did you first develop a passion for inclusion photography? Was there a defining moment when you realised this was what you wanted to do?

Inclusion photomicrography was a natural offshoot of inclusion research and collecting for me. As my collection grew, I found that I wanted to communicate with others the wonderful inclusions that I was seeing on a somewhat regular basis. That meant that I would have to photographically record the inclusions I was studying. My first photomicrographs were taken when I was 12 years old. They were crude by today's standards, but they got the job done. There was never really a defining moment. My passion for inclusion studies and photomicrography just evolved over time.

Accomplished anglers always talk about the 'one that got away'. Is there one inclusion shot that has eluded you over the years?

The 'one that got away' for me was a perfect octahedron of gold included in a colorless transparent quartz crystal. It was for sale in Tucson at the annual gem and mineral show. I didn't have the money to buy it at that time, but I should have stretched my budget somehow. Now I repeatedly kick myself for not getting it. The only "photomicrograph" I have of that gold crystal in quartz is locked away in my mind, in memory, as it once appeared through a 10X hand lens.

What is the one inclusion photograph that sticks in your mind the most, either through the sheer beauty of the inclusion or the challenge in capturing it on film?

The one inclusion photomicrograph that sticks in my mind the most, both for the sheer beauty of it, and also for the difficulty in capturing it on film, would have to be the iridescent hematite and ilmenite plates in oligoclase feldspars from Harts Range, in Australia. To get a good photo of these inclusions you first have to specially

prepare the subject so that the plane of the inclusions is at a shallow angle to the surface of the host feldspar. And for that you will need the skills of a lapidary artist.

In a world where photographs are now primarily taken with digital cameras, is there still room for analog film?

In one respect, as a means of taking a photomicrograph, film has gone the way of the dinosaur. But that is not to say that film is completely useless. As for example, I have a few thousand photomicrographs that have never been published. They are in 35 millimeter slide format. In order to use them in the digital world you have to scan them with a 35 millimeter slide scanner to create digital files. I am in the process of doing that now.

How has digital technology changed your approach to inclusion photography?

Thanks to the digital age I can now shoot many more images of the same subject under a wide variety of lighting conditions. You don't have to worry about the costs of film and developing anymore. The only element of concern is one of time usage.

With software such as Photoshop, many photographers are finding it easier to create stunning imagery. Are you a purist or have you embraced this new technology?

I don't consider myself a film purist, and I have embraced the new digital technology as needed. But I also like to have my subjects "honest". I use Photoshop very sparingly, primarily to remove dust that was missed in the final cleanup of the subject just before photography took place.

What in your opinion is the one mistake all up and coming inclusion photographers make?

They hurry the photo and don't take those extra few moments to make sure that everything is as it should be. Lighting and subject preparation should never be hurried.

Guitarists are always asked about the equipment they use and the ones they most prefer. What are the 'essentials' in your photographic arsenal?

First off, I would say a photomicroscope with excellent optics. In photomicrography there is no substitute for good optics. Then, at the very least, a minimum of one fiber optic illuminator is necessary. I use two units with a single light wand on each. That way you can move one of the lights without moving the other one. And finally, there are an array of cleaning supplies to control dust and dirt. The cleaner your subject is in the field of view before you photograph it, the less time you will need

to spend in Photoshop removing dust and dirt with the Photoshop tool kit.

Having carried your three volumes of the Photoatlas of Inclusions all around the world, are there any future plans to go digital?

The publisher holds the publishing rights to the books, and they have no plans of that nature at this point in time. I do have thousands of excellent images under my control that have never been published before. I have to do something with all of those images, so maybe I will try my hand at digital publishing.

Where do you see the future of gemmology ten years from now?

My primary tool in gemology is the gemological microscope. I feel that the microscope is still the most important tool in our field of study, and I don't see that changing. I see a place at the table both for traditional gemology, and also for advanced forms of instrumentation. The problems that plague us now will still be problems in 10 years, as for example the separation of natural diamonds from synthetics. I am in my late sixties now and plan on working at the GIA for at least another 10-years, so I guess I will see if what I think now does come true.

You are truly an iconic figure in our industry. Do you sometimes find the weight of expectations too much at times?

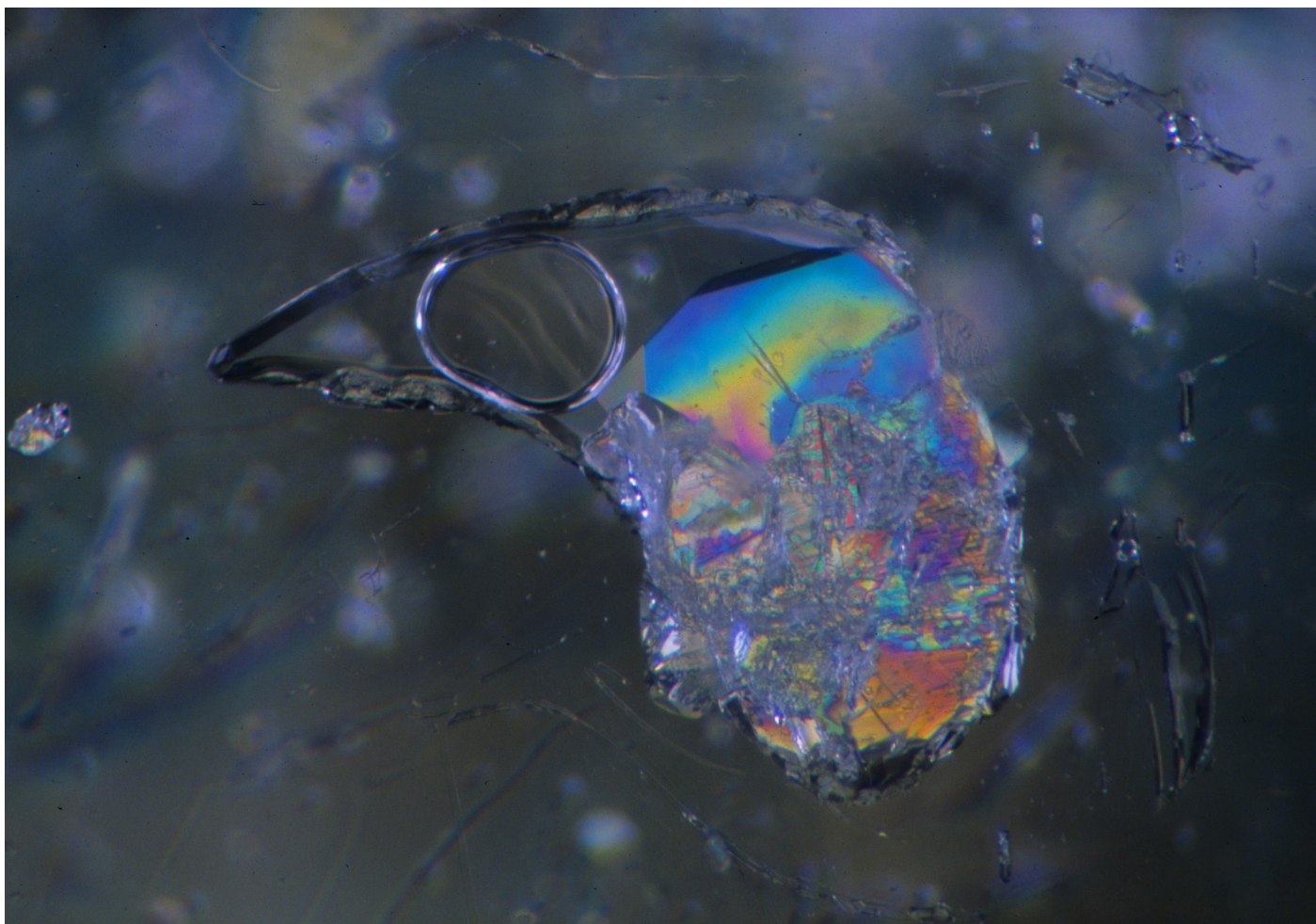
I don't feel much like an iconic figure, and I don't feel that the weight of expectations is too much either. I work in a great place with a great group of people in the research laboratory at the GIA, and I basically get paid to do my hobby, gemology. Examining gems and minerals is a great way to spend your days.

If we were sitting here a year from now celebrating what a great year it's been for John Koivula professionally, what would you say was the reason?

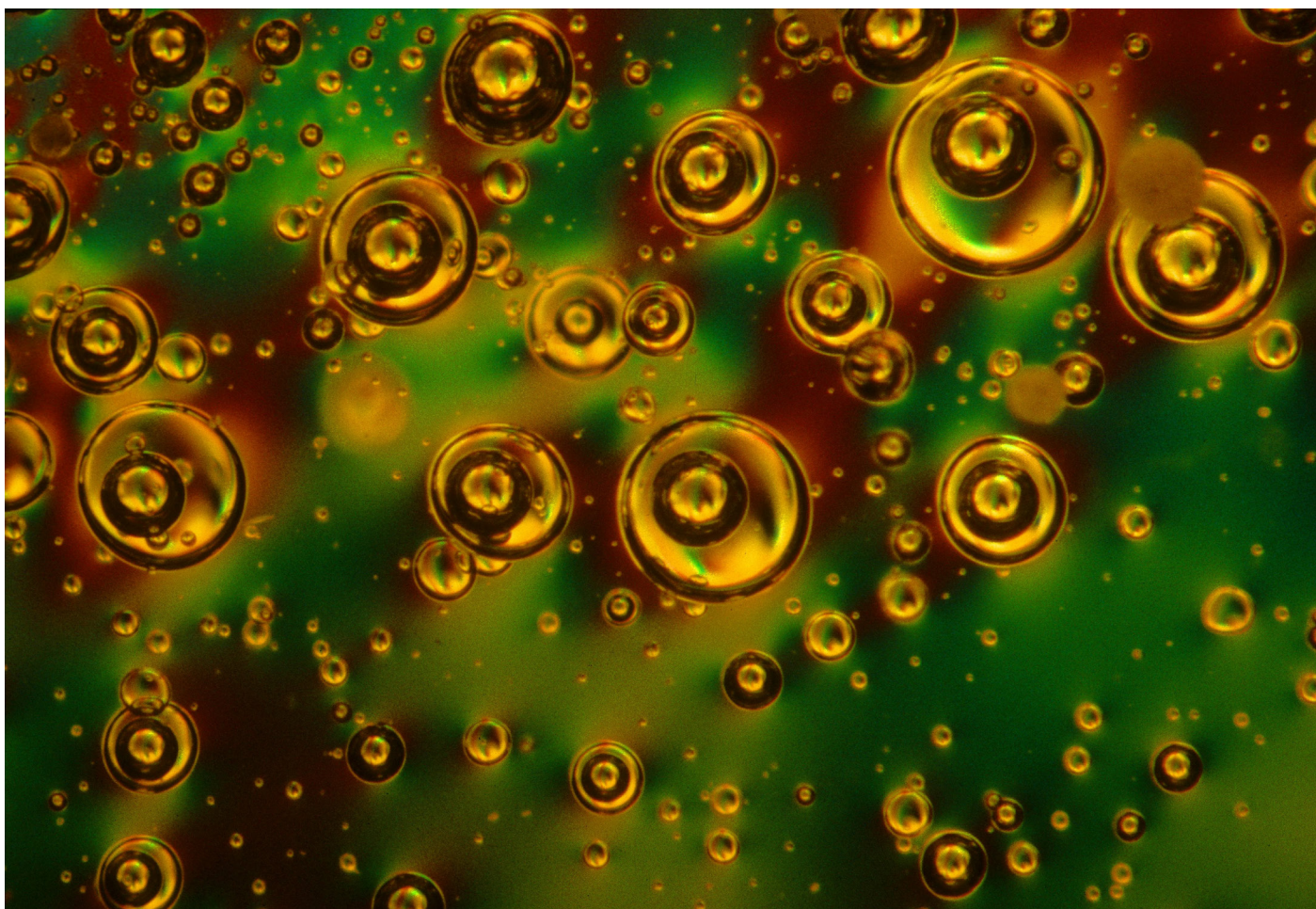
As I get older, I find that good health is the most important aspect in my life. Without good health nothing else is enjoyable, including the study of inclusions. So, if we are celebrating what a great year it has been for me professionally, then we are also celebrating what a great year it has been health-wise. To all my friends I wish you good health and happiness, as well as many beautiful and interesting inclusions.

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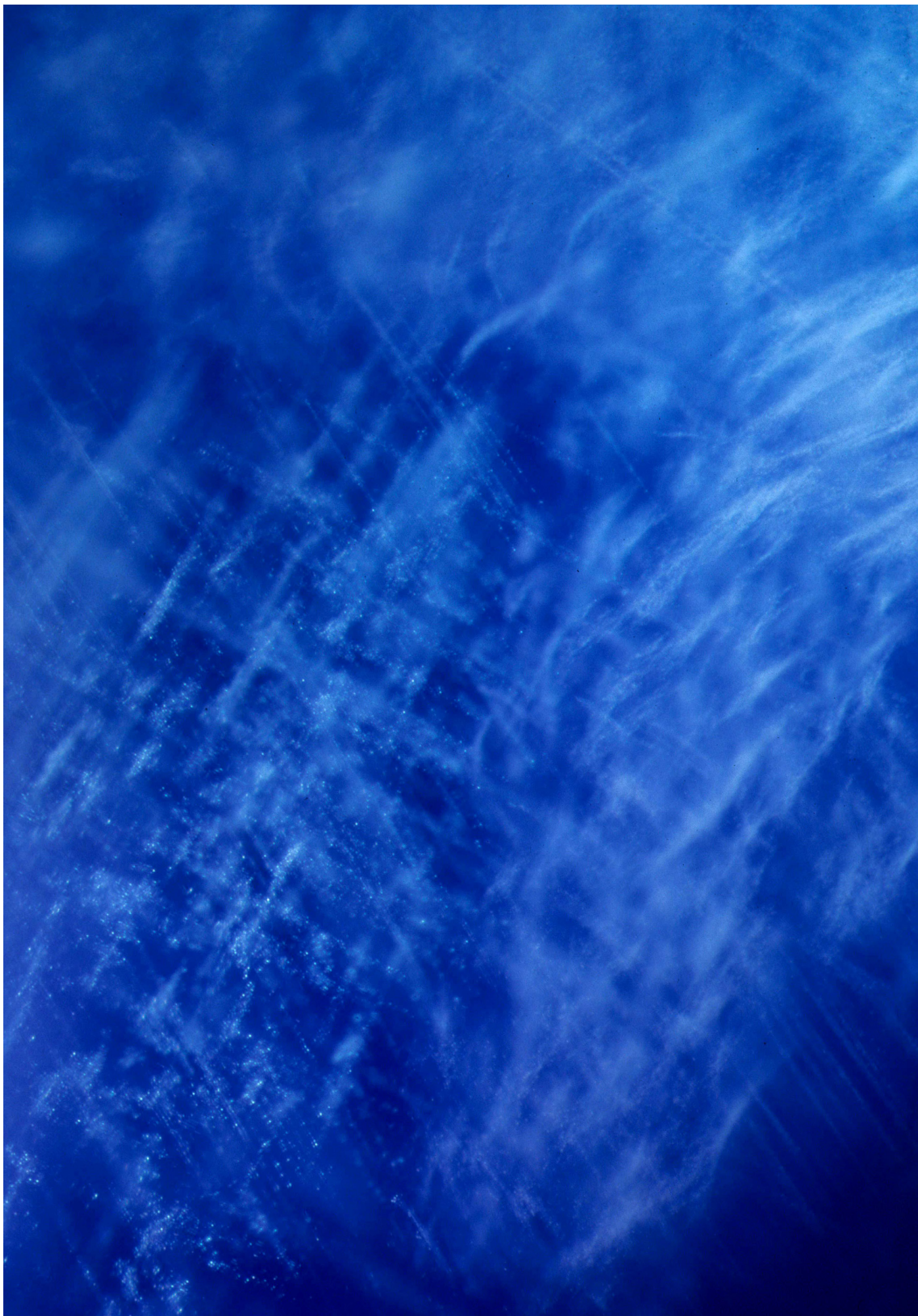
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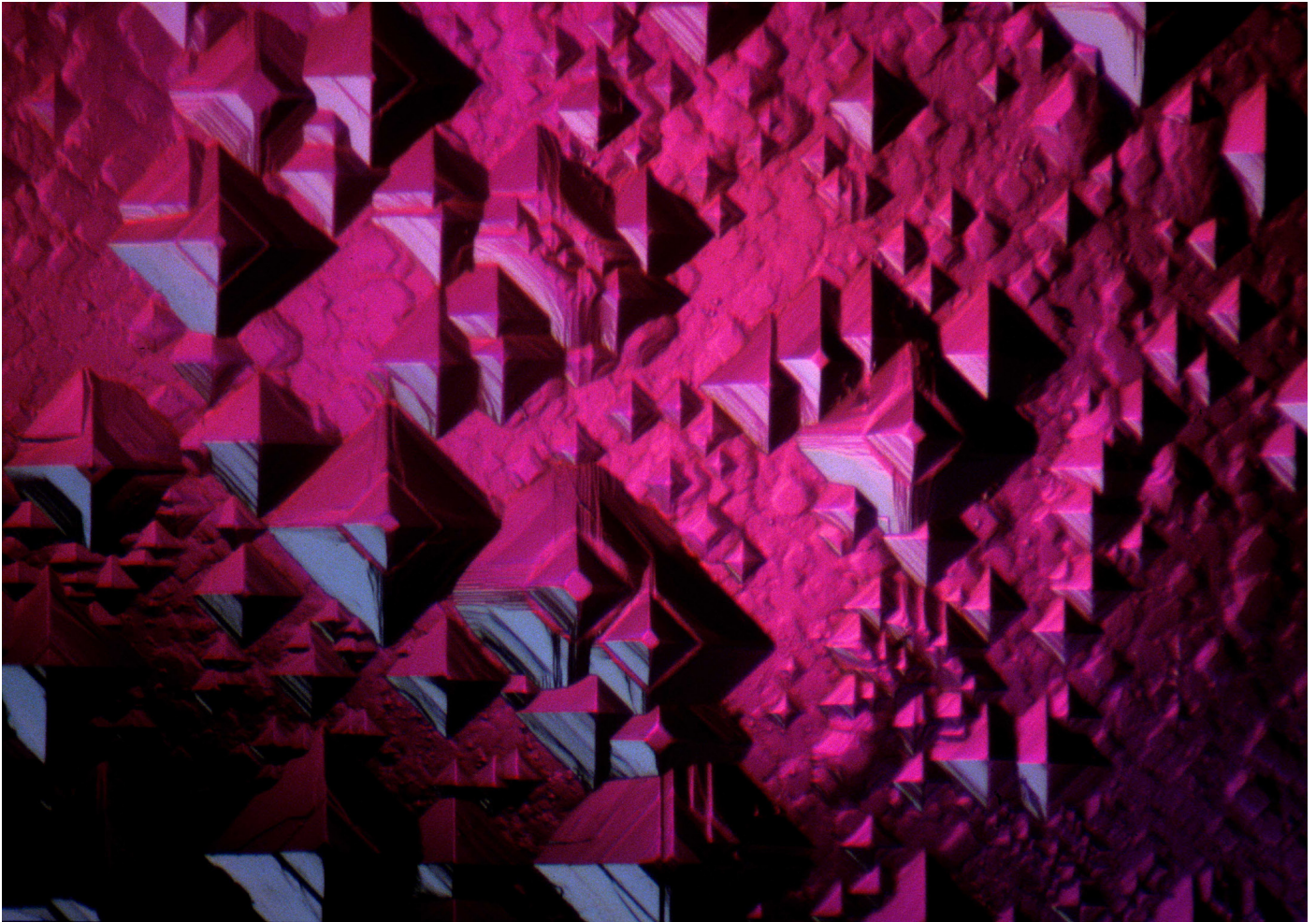
Beryl with complex primary three-phase fluid inclusion (FV 1.0 cm)



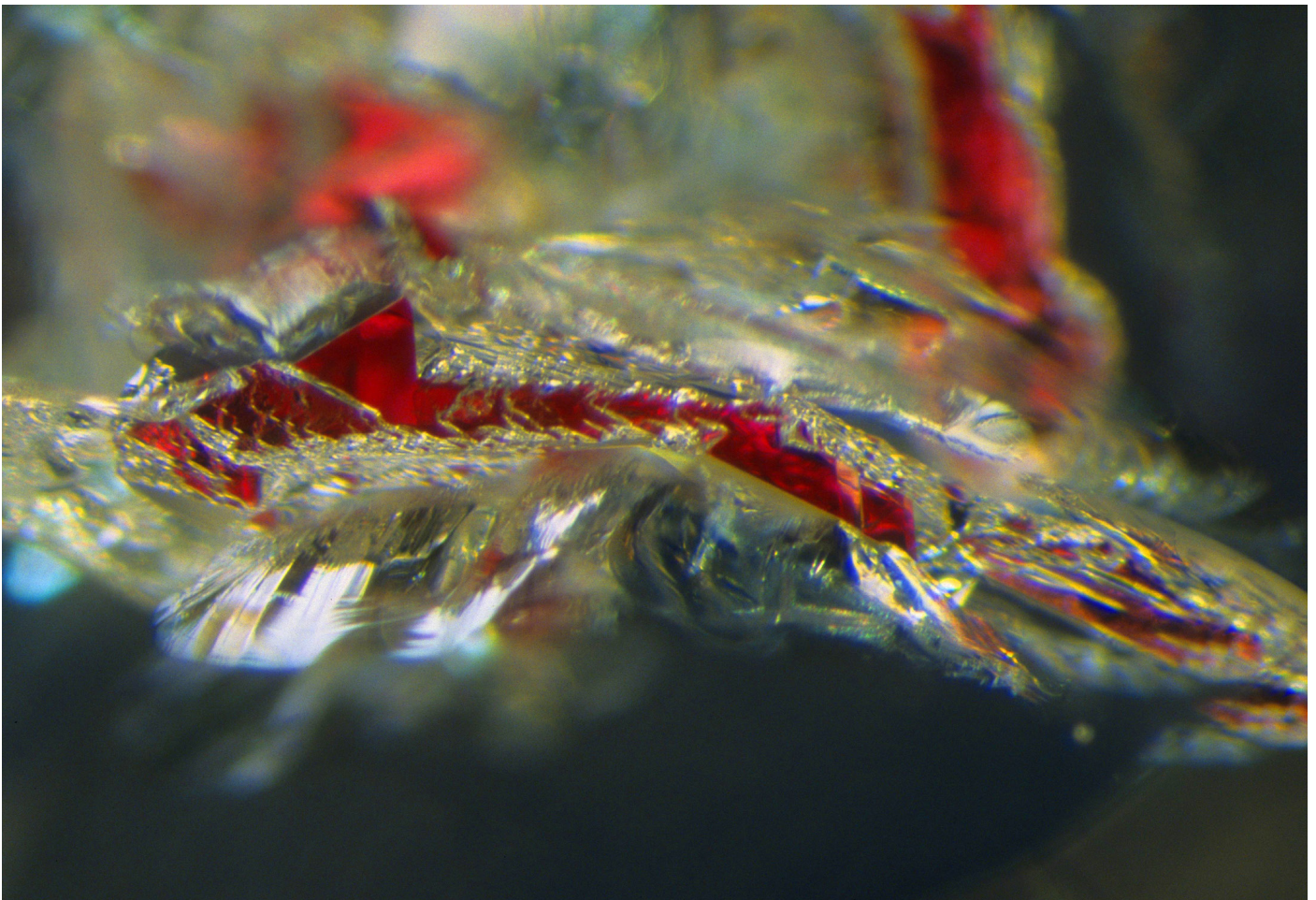
Droplets of dew or rainwater with air bubbles floating in them captured in amber from the Dominican Republic (FV 1.2 cm)



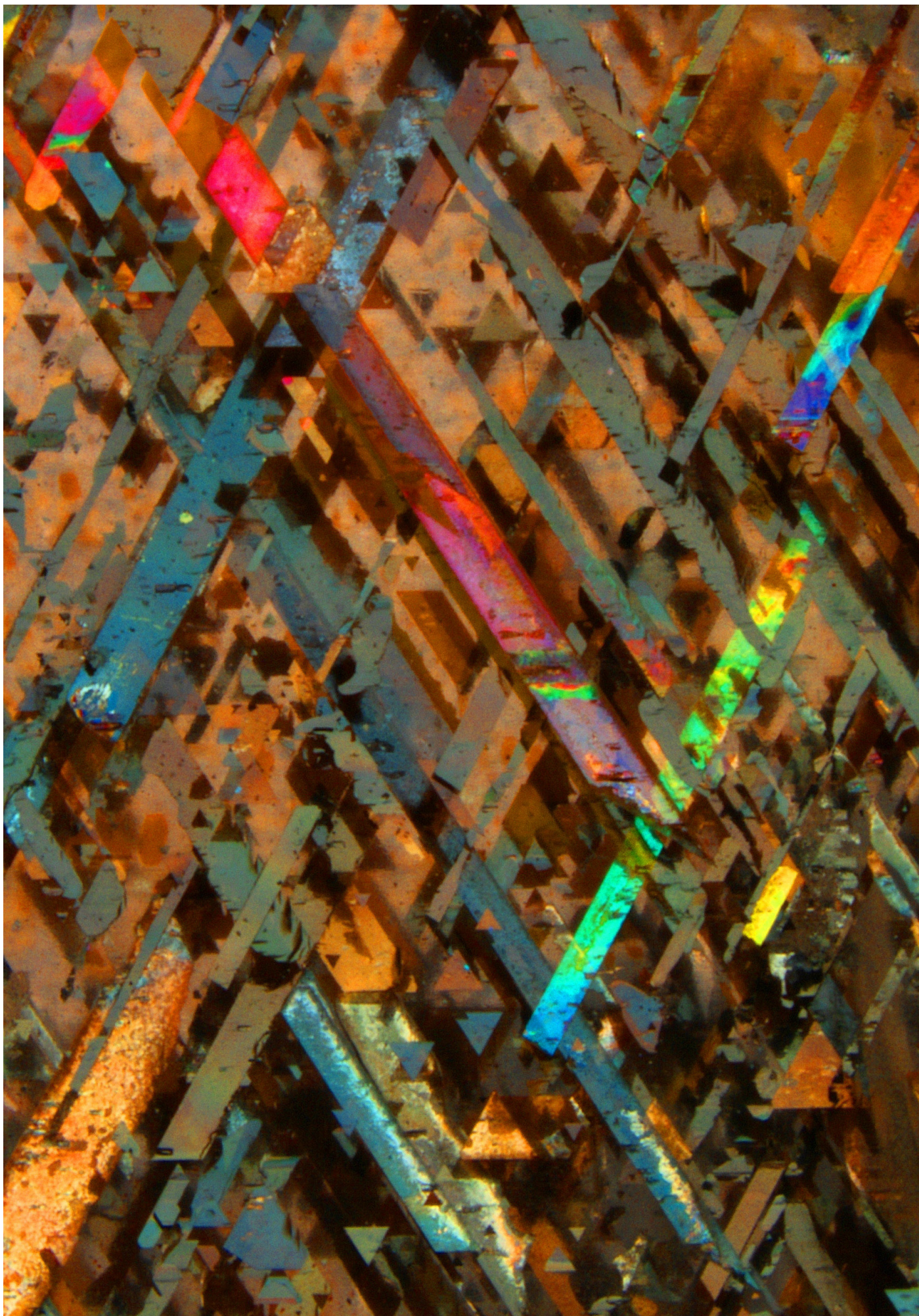
Exsolution cloud scene in unheated natural Blue Sapphire (Kashmir) (FV 0.8 cm)



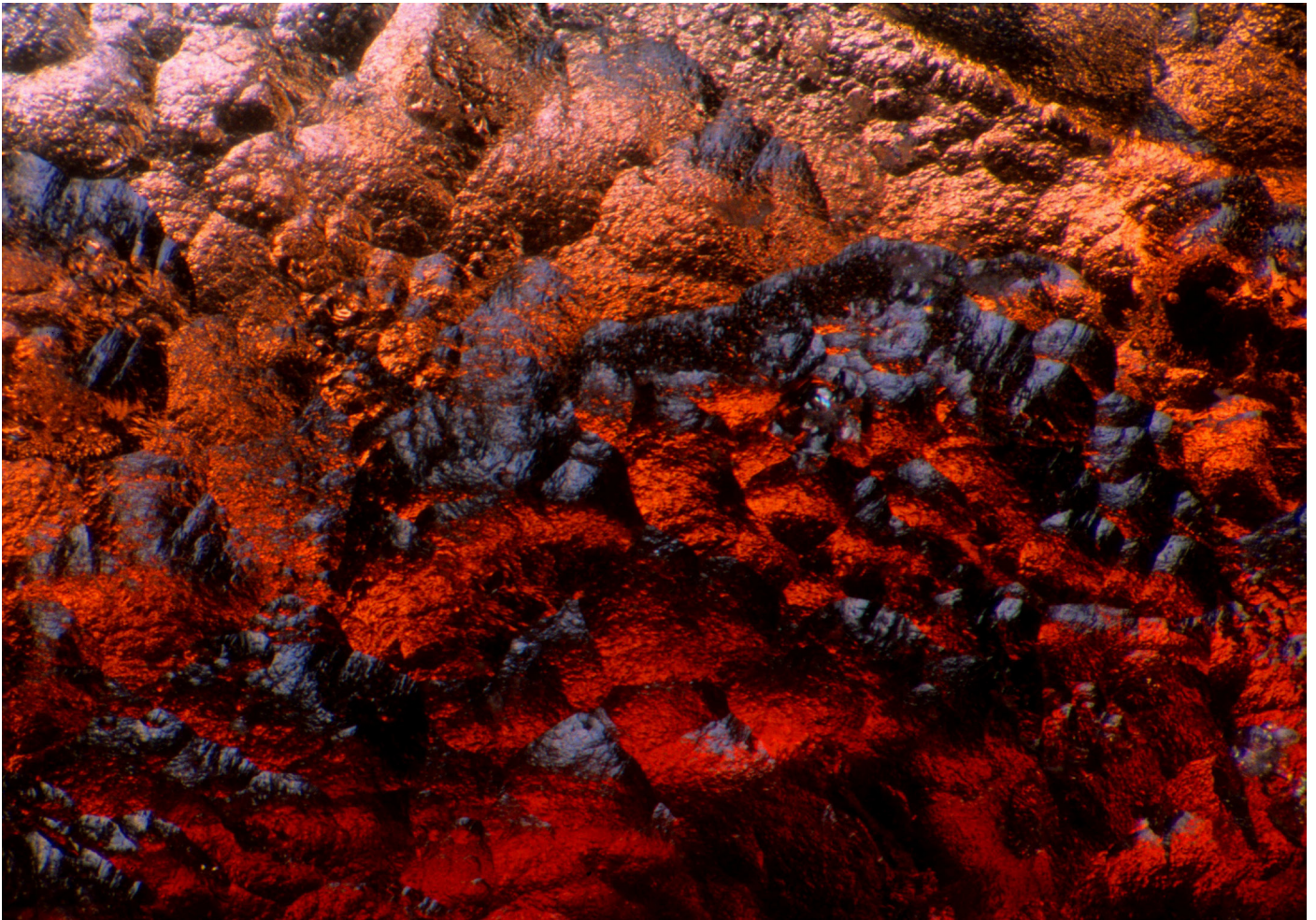
Fluorite from England showing octahedral growth features (FV 1.1 cm)



Xenomorphic Pyrope Garnet in Peridotitic Diamond (FV 1.0 cm)



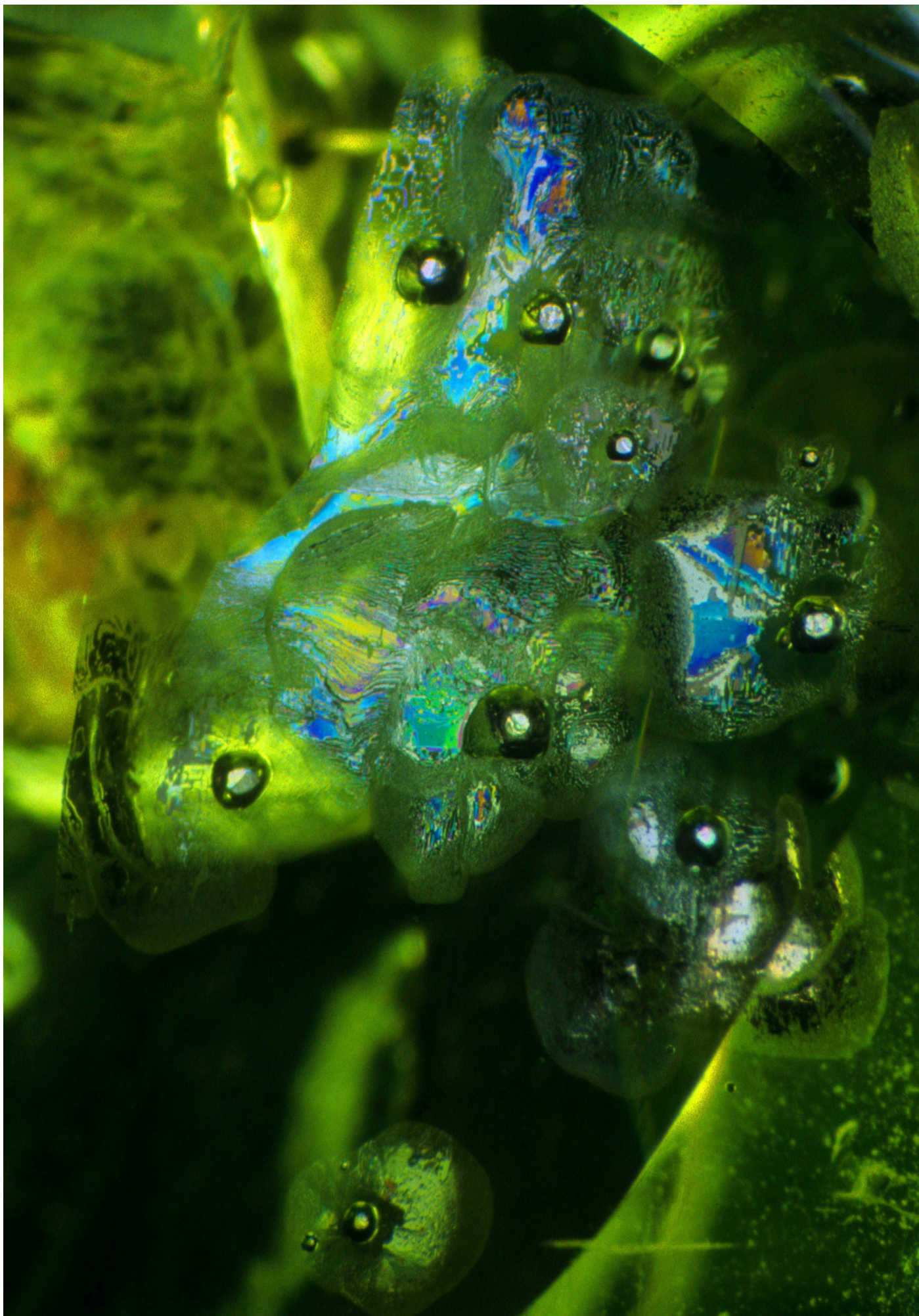
Australian Oligoclase Sunstone with iridescent Hematite and Ilmenite (FV 0.8 cm)



Spessartine Garnet from Brazil with 'lava flow' texture (FV 1.6 cm)



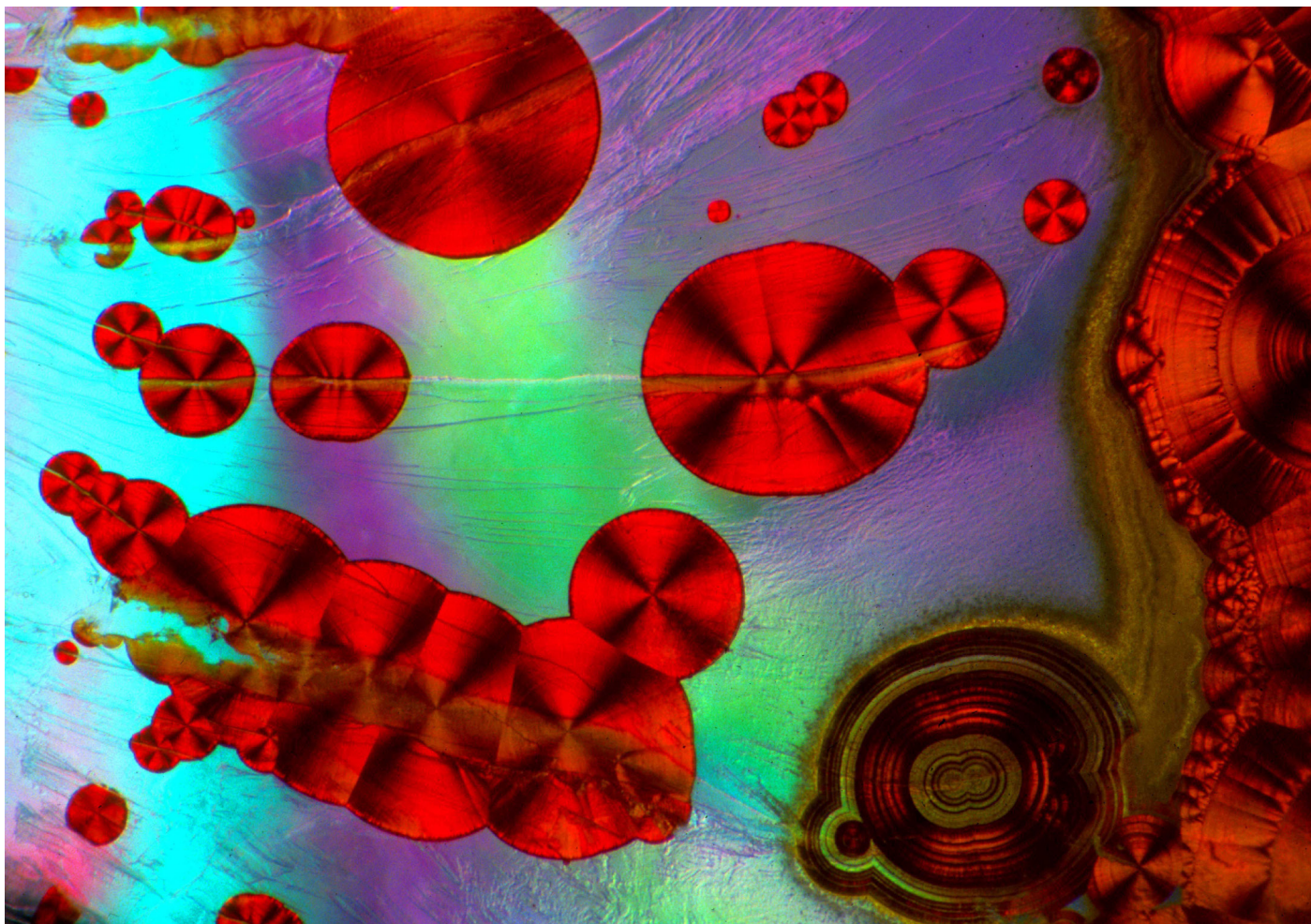
Delicate glass spines on the edge of a Moldavite (FV 0.7 cm)



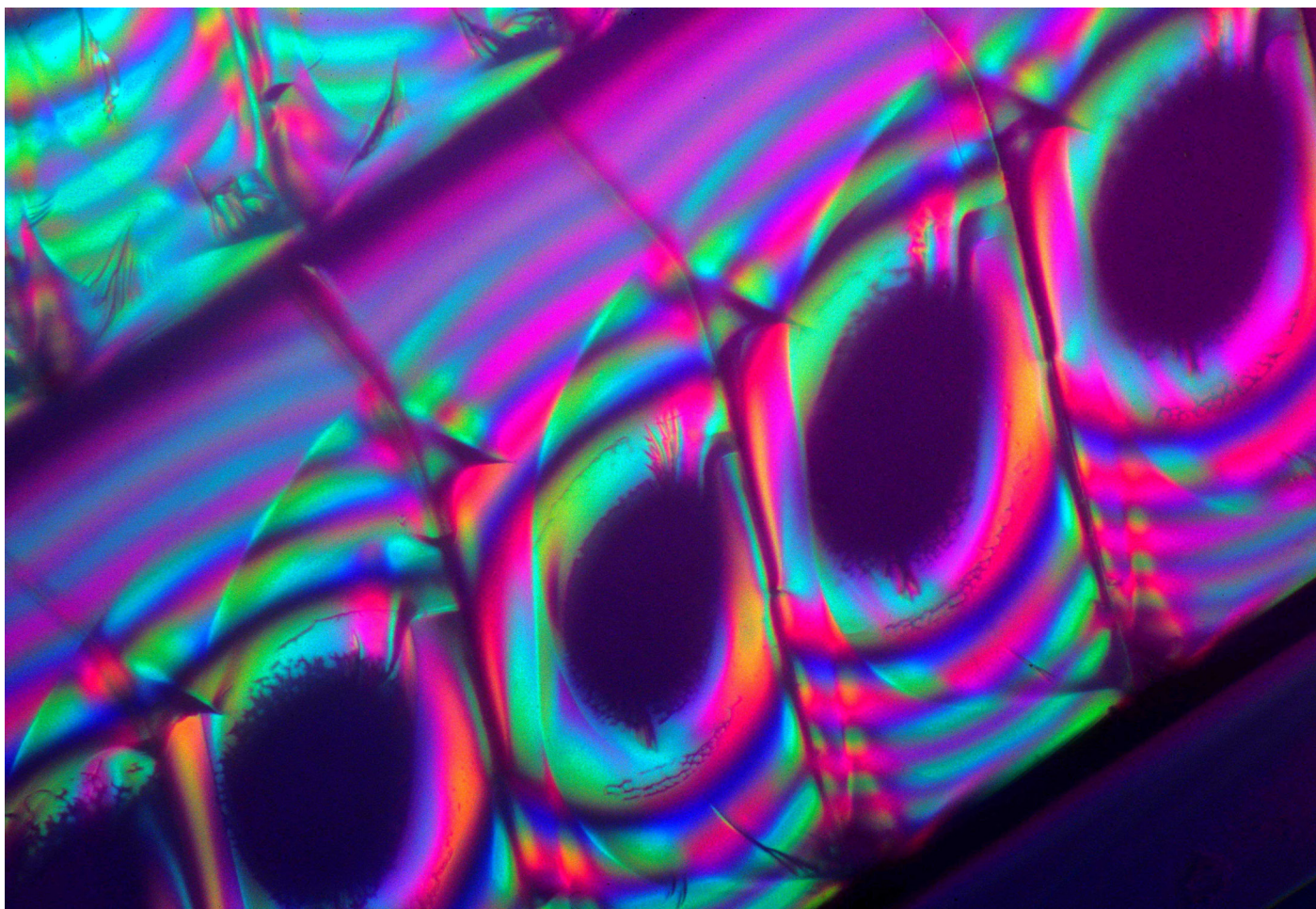
Peridot from Arizona with multiple melted sulfide crystals (FV 0.9 cm)



Petrified Dinosaur Bone showing 'tire track' structure (FV 1.1 cm)



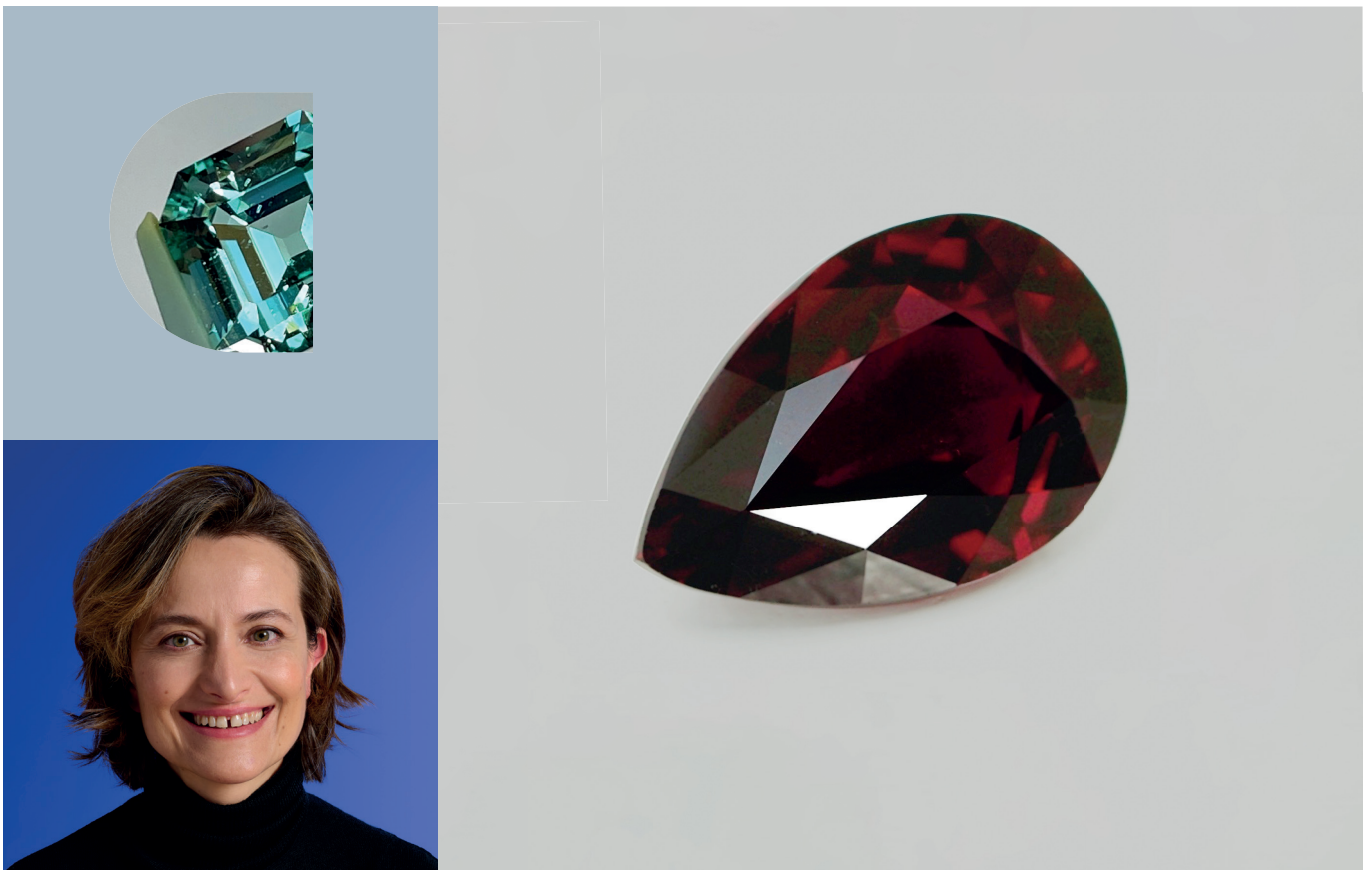
Rock Crystal Quartz with epigenetic bright red Hematite radial concretions (FV 1.3 cm)



Iridescent planar conchoidal crack in an Elbaite Tourmaline (FV 0.5 cm)

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