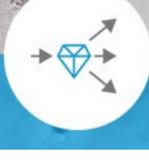




CRYSTALLOGRAPHY TIMES



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WELCOME

I traveled to Germany in November, my first overseas trip since February 2020. Things looked like we had turned the corner on the pandemic, then Omicron hit. Fortunately, I had already made it back home before things started shutting down again, just in time for Thanksgiving. Whew. I hope the new normal for 2022 will be more like 2019 than 2021.

We are pleased to announce that we have installed our first XtaLAB Synergy-ED at Kitasato University in Tokyo. You can see the installation below in the Product News. This month we have links to a couple of lectures from our recent high-pressure crystallography workshop as well as links to several recent crystallographic papers of interest.

In honor of the season, this month's video is a documentary on the generation of snowflakes, both in real life and by CGI. And finally, since so many people became pet owners over the last 18 months, I thought *Our Oldest Companions: The Story of the First Dogs* would make for a nice holiday read.

Out of curiosity, I searched Wikipedia for year-end (winter solstice) celebrations and found over 200. If you are interested, you can look for yourself at [List of multinational festivals and holidays - Wikipedia](#).

I will leave you with the most generic of all seasonal greetings: Happy Holidays.

Joe

PRODUCT NEWS

The first installation of Rigaku's electron diffractometer, the [XtaLAB Synergy-ED](#), has occurred at Kitasato University in Japan.



Click [here](#) to download the XtaLAB Synergy-ED brochure.

PRESENTATIONS FROM RIGAKU'S HIGH-PRESSURE CRYSTALLOGRAPHY WORKSHOP

Introduction to High-Pressure Crystallography

APPLYING HIGH PRESSURE
General principle

- How do you apply pressure to a sample?
- $P = \text{Force/area}$
- Use of small area reduces force needed for high pressures

Mounting DAC Cells, Centering Crystals, Screening and Data Collection

SYSTEM SPECS

	XtaLAB Synergy S
Dimensions	130 (W) x 187.5 (H) x 85 (D) cm
X-ray source	Micro focus sealed tube
Radiation	Choice of Cu, Mo or Ag Choice of 1 or 2 sources
Operating power	Cu, Mo: 50W Ag: 44W
Beam	FWHM: 0.100 mm ² @ 0.120 mm
Goniometer	4-axis kappa goniometer
High-pressure kit	Shorter collimator Longer beamstop

BOOK REVIEW



Our Oldest Companions: The Story of the First Dogs

By Pat Shipman
ISBN: 9780674971936

Pat Shipman's *Our Oldest Companions: The Story of the First Dogs* is a delightful pre- or post-holiday read that digs into the history of the earliest relationships between humans and dogs. Shipman, an anthropologist by training, works to unravel a fairly convoluted evolutionary narrative that has been problematically oversimplified for centuries.

She acknowledges the predominantly Eurocentric influences on the generally accepted understanding of how our canine companions came to be "domesticated," and sets out to break that down, starting with the issue of the word "domesticated." Shipman declares in the preface that she does not like the word because it is used both too broadly and too narrowly, which results in an inaccurate general understanding of what the term truly means. "There is also a widespread assumption that domestication benefited humans but not the other species that were our partners in this endeavor—and that belief is wrong, too," she claims.

Shipman cites the zebra as an example of an animal that was targeted for domestication—and given the domestication of the horse and the donkey, one might suspect successfully—which was in fact a failure. Despite photographic evidence of zebras leading carriages or with saddles, the historical record shows that they regularly rebelled—kicking any vehicle of transport attached to them to pieces, bucking under a saddle, and biting their so-called domesticators with great frequency. Dogs, like any animals that have been domesticated, have made an active choice to cooperate in the process with their human partners, Shipman explains. It is with this logical assumption in hand that Shipman digs in.

She starts with a chapter titled "Before Dogs," where she delves into the most well-known ancestor of the modern dog—the wolf. The main point Shipman hammers home is that wolves are not dogs, and vice versa. There are distinct biological and behavioral differences, and the oversimplified narrative that modern dogs are simply descendants of domesticated wolves is one Shipman works to replace with a more reasonable and well-explained theory of modern dog domestication in the following chapters.

The next few chapters have question-based titles: "Why a Dog? And Why a Human?", "What is Dogginess?", "One Place or Two?", "What is Domestication?", and "Where Did the First Dog Come From?" In each of these chapters, Shipman concisely and concretely answers the titular question, laying the groundwork for the foundational knowledge the reader will need to better understand future chapters as they dive even deeper into the development of the relationship between humans and dogs. You'll have to pick up the book to find out the true history of the domesticated dog for yourself.

Our Oldest Companions is decidedly well-written and engaging. Shipman does an excellent job writing such that any reader with little or no prior knowledge or understanding of the subject—or any related subjects—should be able to easily comprehend her work. Whether you are a dog-lover or a casual anthropology enthusiast, *Our Oldest Companions* is sure to be a pleasant read.

Jeanette S. Ferrara, MFA

RIGAKU TOPIQ WEBINARS

Rigaku has developed a series of 20–30 minute webinars that cover a broad range of topics in the fields of X-ray diffraction, X-ray fluorescence and X-ray imaging. You can register [here](#) and also watch recordings if you cannot attend live sessions.

CRYSTALLOGRAPHY IN THE NEWS

October 14, 2021: Scientists in Germany and the US have determined the [structure and properties of two superionic ice phases](#) in order to model the magnetic fields of Uranus and Neptune.

November 17, 2021: Researchers from the US and China have [synthesized and characterized a californium metallocene](#) containing the first observed C-C bond.

November 24, 2021: Researchers in China and Sweden have [synthesized ultrahard bulk amorphous carbon](#) from collapsed fullerene, while another group of researchers from China and Germany have [synthesized paracrystalline diamond](#).

December 2, 2021: Researchers from Belgium, Japan and the US have determined the structures of [anaplastic lymphoma kinase 1 and the related leukocyte tyrosine kinase 2](#) and propose a structural and mechanistic blueprint for complexes of ALK family receptors.

VIDEO OF THE MONTH



The Snowflake Mystery

Dr. Ken Libbrecht is the world expert on snowflakes, designer of custom snowflakes, and snowflake consultant for the movie *Frozen*. His photos appear on postage stamps all over the world. His website, <http://snowcrystals.com>, is full of information about snowflakes.

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Our [LinkedIn group](#) shares information and fosters discussion about X-ray crystallography and SAXS topics. Connect with other research groups and receive updates on how they use these techniques in their own laboratories. You can also catch up on the latest newsletter or *Rigaku Journal* issue. We also hope that you will share information about your own research and laboratory groups.

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RIGAKU X-RAY FORUM

At rigakuxrayforum.com you can find discussions about software, general crystallography issues and more. It's also the place to download the latest version of Rigaku Oxford Diffraction's CrysAlis^{Pro} software for single crystal data processing.

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