ALROSA

IN-HOUSE PUBLICATION OF THE LARGEST DIAMOND MINING COMPANY
WINTER **2021–2022**

NANOMESSAGE
in your diamond

ACROSS THE UNIVERSE

ART PROJECT WITH FLUORESCENT DIAMONDS

EDITOR'S NOTE

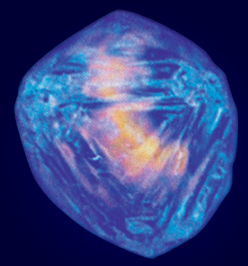
Last year, perhaps, the main New Year's resolution fulfilled by the ALROSA company was “do what you have never done before.” ALROSA offered the market a technology for applying nanometric marks to diamonds, which will remain in them forever, even after cutting, and allow the confirmation of natural origin.

In the past year, the company has supported several debuts in the jewelry industry. For instance, the creators of the popular, sharp-tongued Anti-Glyanets (Anti-Gloss) telegram channel, who are known for raising hot topics, attracted young designers created a jewelry capsule together with ALROSA Diamonds. Its main message is to make fun of oneself and the current situation, and to have fun every day. The collaboration of the diamond mining giant with young artists and media professionals initiated a wave of positive feedback in the glossy media community. The creators' view of diamonds as an everyday accessory and the friendship of a large-scale company with independent representatives of the industry pleasantly surprised both the professionals and the audience. In this issue, you will learn more about the birth and implementation of this collaboration idea. ALROSA gathered scientists and began researching kimberlite's ability to absorb carbon dioxide from the air. For further details on the prospects of the project, and the deposits of kimberlite that capture CO_2 better, read more.

Last fall, a year has passed since Akil Zubir moved to Antwerp as the head of ALROSA's Belgian office. Akil told our magazine whether the importance of the capital of the diamond world for the industry has been impaired in the era of the pandemic, where and why his team is moving, and how experience in insurance field is helping him master new roles.

If you look at fluorescent diamonds, you will see the universe! Scroll down to our art project and you will see why.

The Luminous Diamonds brand of fluorescent diamonds encourages us to follow our inner light. That is what we wish our readers in The New Year.



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ALROSA

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NANOMESSAGE
IN YOUR DIAMOND

Imagine a permanent inscription recorded within the crystal lattice of a diamond at an atomic level, invisible to the naked eye or to gemological equipment. And yet this inscription makes your diamond recognizable among thousands of other precious stones, even if it has been re-cut. Such technology already exists today, and it belongs to ALROSA.

The practice of marking polished diamonds with a laser is quite common—numbers of certificates issued by the gemological laboratory are applied to diamond girdles. The inscription can be read with a magnifying glass, and the number can be used to find the certificate on the laboratory's website in order to see the characteristics and origin of the diamond. The problem is that a laser inscription on the girdle can be polished off or simply replaced with the certificate number of another, higher quality stone. This is also how synthetic diamonds can be passed off as natural. This is what scammers do.

"Rough diamonds are as old as the Earth. They retain their value for centuries and can be stored unchanged for billions of years. Any record made within a rough or polished diamond will exist as long as the diamond exists, even if it is sent into space. And it can be read both by the future generations, and, perhaps, someday, by alien civilizations."

Oleg Kovalchuk,

Head of the Research Sector of the Quality of Diamond Products and Control Methods of the Yakutniproalmaz Institute

Playing with atoms

But what if an inscription could be placed inside a rough diamond? Would that harm its characteristics? How can a record be made within a rough diamond so that its purity, brilliance, grace are not affected? Scientists from the Russian Academy of Sciences have experimented with the use of ultra-short pulse lasers on diamonds. The first studies showed that a laser can easily create an image out of discrete graphitized microdomains in the crystal volume. This involves a local, irreversible transformation of the crystal structure of the rough diamond into graphite. Compared to known methods for the laser engraving of the surface of polished diamonds, the application of such tiny marks inside a crystal could satisfy all gemological requirements, and such marks would be invisible even under a specialized gemological jeweler's loupe with tenfold magnification. But the scientists realized that even very tiny black graphite marks still irreversibly damage the stone, and continued their research.

Experts have finally found the conditions under which the diamond lattice is not transformed into graphite when exposed to ultra-short pulses. This is done by displacing individual carbon atoms, nitrogen centers and vacancies. This innovative laser technology has been evolving for more than ten years. It has gradually developed from graphitized marks that damage the stone to invisible microimages that appear under particular conditions.

In 2012, scientists were able to experimentally create the first nanomark without graphitized areas and invisible in ordinary light. Their research results drew the interest of ALROSA, which funded further research and development work and provided rough diamonds from its own fields. Some of the crystals were cut into plane-parallel cubes for precise optical measurements. Others were polished to create specific "optical windows" through which the creation of marks at the atomic level could be easily observed. After ALROSA joined the process, the technology went from experimental to industrially usable.

Scientists from the Russian Academy of Sciences, together with specialists from ALROSA's Scientific Research Geological Enterprise (SRGE) and the Yakutniproalmaz Institute, took part in its development.

IN 2012, SCIENTISTS WERE ABLE TO EXPERIMENTALLY CREATE **THE FIRST NANOMARK WITHOUT GRAPHITIZED AREAS AND INVISIBLE IN ORDINARY LIGHT.**

Russian and international gemological centers have inspected rough diamonds with embedded marks and have not reported the presence of marks or refinements.

The image reveals itself in the form of low-contrast quantum dots against the background of the natural optical centers of the crystal. Every rough diamond is unique at the subatomic level.

The invisible microscopic laser etching inside the rough diamond makes it even more unique and personalized. The marks can be read only with special equipment using laser radiation with a particular wavelength.

ALROSA's laser nanomark is distributed throughout the entire volume of the rough diamond.

This means that a diamond retains its unique code even after cutting.

The essence of the revolutionary technology

The technology is based on the interaction of femtosecond radiation with the crystal lattice of the rough diamond. Focusing ultrashort laser radiation inside a rough diamond releases microscopic bursts of energy and creates cold microplasma. This mobilizes atoms of carbon and natural impurities and makes it possible to create a completely transparent microimage inside the rough diamond while also preserving its crystal structure.

The directional three-dimensional movement of the laser beam during the laser writing process creates an invisible image—a three-dimensional code associated with the ALROSA Provenance platform.

The mark contains detailed information about the diamond's origin and its characteristics, unique identification number, as well as photos and videos.

Oleg Kovalchuk:

“We apply nanomarks to uncut, rough diamonds. We apply laser pulses of a certain wavelength, intensity and duration to the crystals. This laser radiation affects the crystal lattice at the level of individual atoms and accelerates the diffusion processes. This is similar to processes that have occurred naturally in the upper mantle of the Earth for millions of years. This forms nano domains in the crystal that differ from the background and are visible only with a scanner specially designed to read the marks. So far, we have developed standardized procedures for writing a few tens of bits of information per mark. That is enough to mark a rough diamond with a distributed mark.”

Using special lighting equipment and high optical magnification, the detector captures the personal ID of the crystal and displays it as a QR code, which then links to a digital platform. The QR code can be scanned by a regular smartphone.

The diamond mining company is offering polished diamonds with nanomarks including personal codes, as well as the reading equipment, to its partners. It takes less than a minute to read a mark.

ALROSA can also put a personal inscription inside a polished diamond, including, for example, a name, a declaration of love or a message to future generations. Using the state-of-the-art nanotechnology of crystal lattice marking, you can inscribe any message inside the diamond.

ALROSA has already patented the nanomark technology in Russia and is in the process of obtaining patents in the world's main diamond trading centers: the US, China, Hong Kong, Macau, Taiwan, the UK, Israel, Belgium and India.

A flawless tracing tool

Consumer surveys in key diamond markets (the United States and China) reveal that the ability to trace a diamond from the mine to the jewelry store is an important factor in purchasing decisions.

A rough diamond personalized with the use of this unique method will retain information about its origins.

Sergey Ivanov:

CEO of ALROSA:

“Guided by growing market demand, we are focusing our efforts on tracing and guaranteeing the origin of our rough and polished diamonds. ALROSA occupies a unique position: using the closed perimeter of full-cycle production, we have all the information about a gemstone and the rough diamond from which it was cut. The laser nanomark technology we created allows us to extend these guarantees for diamonds sold by our partners. When buyers purchase jewelry with a nano mark protected diamond, they can be sure that it was actually produced by ALROSA: the three-dimensional code embedded in the diamond is linked to its unique identifier and digital passport in the company's database, which also includes information about the social benefits associated with its production.”

Add shine TO YOUR INVESTMENT PORTFOLIO

WHY INVESTMENT MARKET ANALYSTS ARE PAYING EVER MORE ATTENTION TO DIAMONDS AS A FINANCIAL ASSET AND HOW TO CHOOSE A PRECIOUS STONE WITH HIGH RETURN POTENTIAL. FIND OUT IN OUR REVIEW.

According to ALROSA's annual report on the diamond investment market, the diamond market has fully recovered from the pandemic. A structural decline in production due to stock depletion and growing demand from end-users creates favorable conditions for sustained diamond price growth in the long term, especially for rare rough and polished diamonds.

A rough diamond deficit is on the doorstep

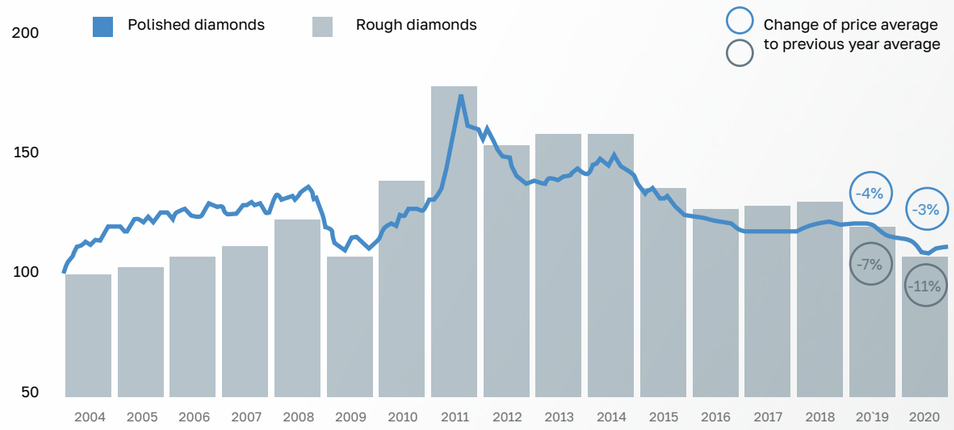
Depleting stock and closures of mining assets have resulted in declining diamond production, leading to a rough diamond shortage, which is expected to persist.

In 2020, diamond producers reduced their production by 20% from 2019 levels to 107 million carats. (The peak of diamond production in the world was observed in 2017 and amounted to 151 million carats). The natural decline amid the planned decommissioning of large, depleted deposits was exacerbated by COVID-19 and the consequent lockdowns.

A key milestone for the entire diamond industry was the closure of Australia's Argyle mine in November 2020, which accounted for up to 10% of global diamond production.

Following a "price over volume strategy" during the crisis, diamond miners ensured the stability of the industry until demand normalized, creating the conditions for the price growth recovery. As a result, throughout 2020, prices for polished diamonds

Rough and polished diamond price indexes (2004 price = 100)



Source: Bain, The Global Diamonds Industry 2020-21

declined by about 3% year-on-year, and increased by more than 10% in the first nine months of 2021.

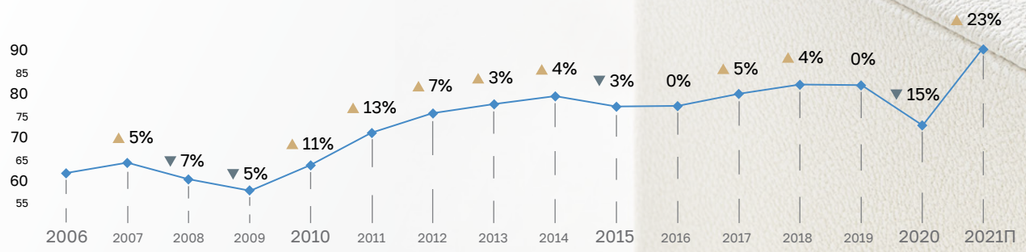
Jewelry is at the top of the wish list

The beginning of the pandemic affected most sectors of the diamond industry. However, in the second half of 2020, retail jewelry sales began recovering rapidly, leading to an increase in demand and the price of diamonds. According to a survey by the National Diamond Council, diamond jewelry tops the list of the most attractive luxury goods, as consumers remain very much loyal to jewelry with natural diamonds. This survey was conducted among 5,000 respondents between the ages of 18 and 39 in Q4 2020.

According to preliminary estimates, global diamond jewelry sales could exceed $90 billion in 2021, showing a 23% year-on-year increase.

At the same time, there is a growing interest in buying diamonds as an investment and financial hedging tool.

Polished diamond jewelry sales 2006-2021 (in $ billion)



Source: ALROSA Data

AMONG THE ADVANTAGES OF RARE DIAMONDS AS AN INVESTMENT TOOL ARE **THE POTENTIAL FOR PRICE GROWTH OVER INFLATION AND THE HIGHEST VALUE CONCENTRATION PER UNIT OF WEIGHT.** THE ABSENCE OF OWNERSHIP REGISTRATION REQUIREMENTS, COMBINED WITH THE FRAMEWORK FOR RESELLING DIAMONDS WITHIN THE ALROSA DIAMOND EXCLUSIVE PROGRAM, MAKE DIAMONDS AN ATTRACTIVE TOOL TO PRESERVE AND TRANSFER FAMILY CAPITAL.

What diamonds are worth investing in?

Investment-grade diamonds have higher price growth expectations than diamonds in general. In particular, these are large colorless diamonds weighing more than 4 carats, as well as fancy color diamonds, which are declining in production at a faster rate.

The supply of colored diamonds to the market is very limited.

It is a well-known fact that only one out of 10,000 diamonds has a distinct, fancy color. Due to limited supply, pink diamonds have seen a price increase of nearly 400% in the past 15 years. The closure of the Argyle mine, which accounted for 90% of the world's pink diamond supply in 2020, sets the stage for further price increases for colored diamonds and for investment-grade diamonds in general.

According to Bain's outlook published in The Global Diamond Industry 2020–2021 report, under any scenario of diamond supply and demand dynamics over the next 10 years, the deficit caused by the scarcity of the diamond supply will increase over time. Even if demand follows the conservative scenario while mining production grows along the optimistic one, demand will still exceed supply by the second half of the 2030s.

This means that the problem of the growing deficit will be resolved mainly by price increases for rough and polished diamonds.

Thus, in an uncertain financial and political environment, high-quality investment-grade diamonds are becoming an increasingly attractive alternative asset.

Expert Opinion

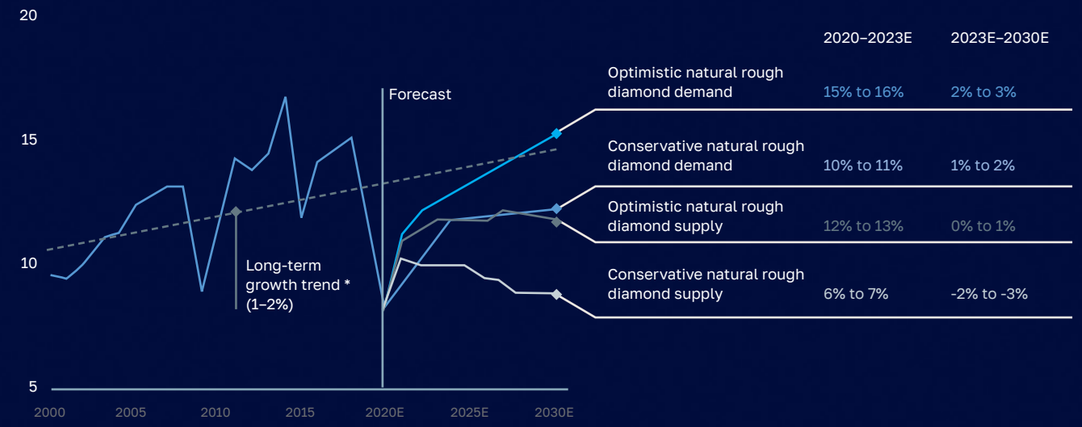
Vedomosti, Russia's leading business newspaper, interviewed independent experts about the potential of diamonds as an investment.

Boris Krasnozhenov, head of Alfa Bank Securities Market Analysis Department, notes that the number of investment-grade diamonds is limited and even declining (when it comes to fancy colored diamonds). On the whole, few new kimberlites with attractive economics and stable production of investment-grade diamonds have been developed over the past 20 years. Demand for diamonds is growing all over the world, while major producers have little stock. At the same time, the jewelry industry is experiencing an increase in demand for diamond products. With inflation on the rise, investors prefer real assets with sufficient liquidity, and this may support demand for investment-grade diamonds.

"Prices for gem-quality rough diamonds in 2020–2021 demonstrated a certain lagging behind other raw materials, so it is quite possible that in the medium term prices for rough (and therefore polished diamonds) may rise by 20–30%," noted Boris Krasnozhenov. "In general, diamonds can become an interesting addition to an investment portfolio. With the right certification as investment diamonds, the asset has relatively good liquidity and a clear pricing system, compared, for example, to art objects. At the same time there are some advantages concerning storage and transportation."

Andrey Lobazov, an analyst of the Aton Company, says that prices for unique diamonds in many ways "have a life of their own." Such diamonds are much more attractive investments than "regular" diamonds.

Rough natural diamond supply and demand, optimistic and conservative scenarios, billion dollars



** The gray line represents rough diamond sales dynamics for 2000–20E; forecast of supply and demand is perfomed in real tirms, 2020 prices and constant exchange rates. Rough diamond demand has been converted from polished diamond demand using the historical ratio of rough diamond and polished diamond values*

Source: Bain, The Global Diamonds Industry 2020–21

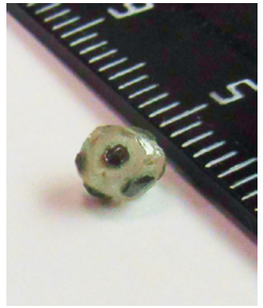
1 mm

THE HISTORY OF A GEMSTONE

ball

Diamonds don't have to be gem quality or large to attract special attention. Diamonds of unusual shapes, even if they are not gemstones, excite the interest of fans of unique minerals, as well as scientists, who can learn from such crystals a lot about diamond deposits and the Earth's evolutionary history.

Weight: 0.47 ct
Dimensions: 2.5 x 3.2 mm



ALROSA is attentive to findings of extraordinary shapes, fancy color or having interesting inclusions and collects such crystals from its own deposits.

Recently, unusual samples from the collection were transferred to the Geo-Scientific Research Enterprise of ALROSA PJSC (NIGP) for advanced comprehensive study and to search for an answer to the question: how was such a diamond formed?

Among others, a ball diamond, which drew headlines in the Russian press in the summer of 2018, was carefully studied and described. Journalists were attracted by the fact that the diamond looked just like a soccer ball and was mined during the World Cup in Russia. The "ball" was found in early July at the Karpinsky-1 pipe in the Arkhangelsk region ("Severalmaz" deposit).

Leonid Bardukhinov, Candidate of Geological and Mineralogical Sciences and head of the Laboratory for the Integrated Research of Diamonds of the NIGP, Elena Sedykh, leading geologist engineer of the NIGP, and Anton Pavlushin, Candidate of Geological and Mineralogical Sciences and senior scientist researcher at the Institute of Geology of Diamond and Precious Metals, explain why the "ball" attracted such strong interest from scientists.

The "ball" is interpreted as a unique case of autoepitaxy, or homoepitaxy, which means that a regularly oriented diamond crystal has grown on another previously formed crystal. Symmetrically oriented distinctly faceted individuals, which are individual diamond crystals of dark gray, almost black color, grow on all facets of a light gray, significantly dissolved diamond crystal of octahedral shape.

"FROM THE POINT OF VIEW OF MINERALOGY, SUCH A BRIGHT EXAMPLE OF THE EPITAXIAL GROWTH OF **DIAMOND SUBINDIVIDUALS ON A SINGLE CRYSTAL IS VERY RARE,** AND SUCH EXAMPLES HAVE NOT BEEN KNOWN IN THE EXTENSIVE LITERATURE ON DIAMONDS UNTIL TODAY."

The crystal includes three distinct symmetrically oriented macro zones:

1) the base central diamond

2) fragments of the skeletal zone from a "sugarlike" framework made of diamond microcrystals located under each black subindividual (clearly visible in tomography and around the black individuals in the picture)

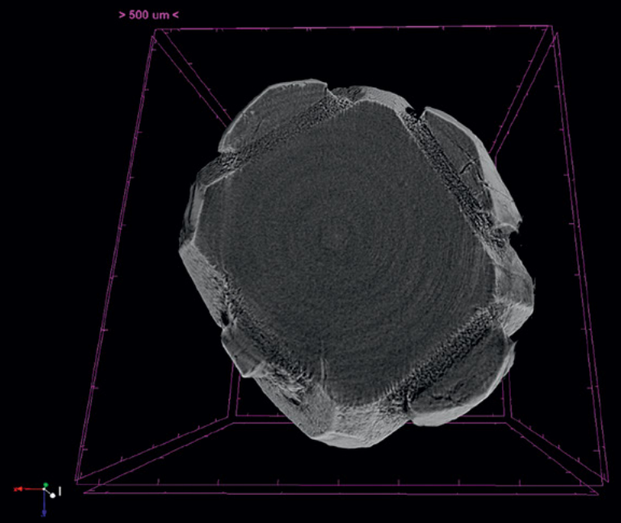
3) the eight black diamond subindividuals growing on the surface of the skeletal zone.

What contributed to this unusual appearance? Obviously, multiple changes in the conditions of crystal formation. The complicated structure of the diamond reflects a sequence of formation of several generations and the main stages associated with the dissolution and regeneration of crystals in the mantle source that fed the kimberlite bodies of the Zolotitsky field of the Arkhangelsk diamondiferous province.

Multiple changes in the conditions of diamond formation is typical and it is one of the typomorphic features of Arkhangelsk diamonds.

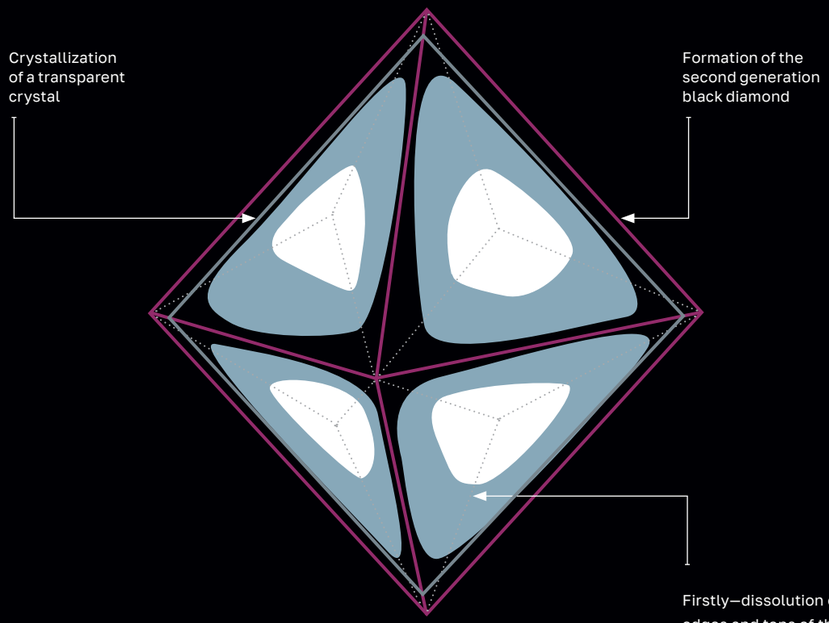
Three generations

Previously, using cathode luminescence and IR spectroscopy, scientists explored the internal



Reconstruction presented in the form of a 3D image obtained from the SkyScan 1272 X-ray microtomograph. An X-ray microtomograph allows study of the internal structure of a diamond without destroying it. It is similar to human computed tomography in medicine

The formation of the ball



structures of 78 diamond crystals from the Karpinsky-1 pipe. Three generations of diamonds have been discovered in the kimberlites.

A similar "ball" structure was found among zonal diamonds from the neighboring Arkhangelsk pipe. They have a transparent table-cut octahedral core covered with a sugar-like casing, which in turn is covered with an outer holohedral cubic dark gray massive area of cubic shape (Kazimov et.al., 2012).

In our opinion, the "ball" formed during the formation of all three generations of diamonds from Karpinsky-1 and underwent through several generations:

- in the first generation, the main diamond appeared,
- in the second generation, the skeletal sugar-like area grew on the previous diamond,
- in the third generation, autoepitaxy or the black diamond growth occured,
- at the fourth stage, the final dissolution occurred, and we can see not a solid black casing, but black spots on the surface of the "ball."

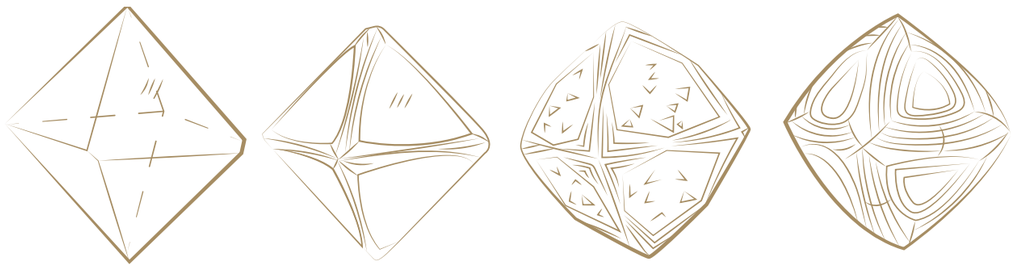
Using geothermometry based on the Taylor et al. diagram, it can be concluded that the central diamond was formed at higher temperatures (about 1150 °C), while the black diamond formed at lower temperatures (about 1100 °C).

The central diamond and the black diamond that grew on its surface formed at different environmental temperatures and, though in fact a united crystal, crystallized in different environments!

This is associated with processes deep in the lithospheric mantle during the interaction of fluids (melts) of various compositions, which in turn determines the different composition and carbon source for diamond formation.

CATHODOLUMINSCENCE is the glow of a diamond under the influence of fast electrons. In fact, it is a phenomenon similar to irradiating a diamond with an ultraviolet laser or in a plant when extracting a diamond under the influence of X-rays. Diamonds containing impurities (in particular, nitrogen) glow under the influence of electrons (UV, X-ray). Depending on the defect population in the diamond, the color of the glow is different (Defect N3 shines blue, H3 and H4 shine yellow-green, etc.). Usually, cathodoluminescence is studied using a scanning electron microscope equipped with a cathodoluminescence detector.

IR SPECTROSCOPY is one of the basic methods for the non-destructive study of diamonds. The crystal structure of diamond absorbs infrared radiation due to the presence of defects in the structure. In the IR absorption spectrum, each defect absorbs at a certain wavelength, and the peak intensity reflects the defect concentration. Thus, the IR spectrum of diamond can be used to determine the main nitrogen centers and their content. IR-Fourier spectrometers are used for diamond study. The Bruker spectrometers in our laboratory are also equipped with IR microscopes. They can measure nitrogen locally and map it. Thus, the growth history can be traced by the change of nitrogen and its aggregation in the diamond structure.



In this picture we can see the standard stages of diamond dissolution. The protruding parts (tops and edges) dissolve first, and the flat parts (faces), especially the central part dissolve last. On the "ball", we can see that protruding parts of the black diamond have completely disappeared in the area of the tops and edges, while relics of this black layer remain in the centers of the faces.

“ANTWERP

CONTINUES TO BE THE DIAMOND CAPITAL OF THE WORLD”

AKIL ZUBIR HAS BEEN APPOINTED MANAGING DIRECTOR OF ALROSA BELGIUM NV AFTER AN INTERNAL COMPETITION AMONG SEVERAL ALROSA EMPLOYEES. EARLIER, AKIL WAS RESPONSIBLE FOR THE COMPREHENSIVE INSURANCE OF THE GROUP’S PROPERTY, VALUED AT BILLIONS OF RUBLES. THE NEW HEAD OF THE ANTWERP TRADING COMPANY OF ALROSA SHARED HIS THOUGHTS ON THE ADAPTATION TO HIS NEW ROLE AND NEW COUNTRY, WHY ANTWERP WILL RETAIN ITS STATUS AS THE GLOBAL DIAMOND CAPITAL DESPITE THE STRENGTHENING OF OTHER INDUSTRIAL CENTERS, AND HOW THE PANDEMIC PUSHED ALROSA’S BELGIAN OFFICE TO GREATER INDEPENDENCE.

ABOUT THE BELGIAN OFFICE

We are engaged in sales, analytics and marketing, but we are ready to take it a step further

ALROSA has been present in Antwerp for over 20 years. Our role includes getting closer insight into the state of the Antwerp diamond market, providing updates to the head company about significant changes and local events, and organizing rough diamond viewings at auctions, tenders and other trade events to assess market trends for the timely adjustment of ALROSA's sales policy. We strengthen our relationships with customers and expand the client portfolio, represent the diamond miner in professional industry associations, and interact with Russian diplomatic missions in Belgium.

We are working on an opportunity to develop polished diamond sales. We see the potential of both the market and our own capabilities. If certain conditions are created, this can successfully expand the commercial operations.

Moving to the heart of the diamond sector

In February 2022, we will begin holding auctions in the new office. It is located on the territory of Antwerp's Diamond Square Mile, in the Diamond Exchange building.

This place has advantages both in terms of image, since large market players work here, and in terms of infrastructure. The new office provides a much higher level of security, service and convenience for hosting customers. In our old office, with our current resources, we run diamond shows in four to five viewing rooms at the same time, while in the new one, we will be able to host the viewings in nine viewing rooms at once.

The pressure on the trading company has increased during the pandemic

Serious pandemic-related restrictions in Belgium were introduced in the spring of 2020. During one month, the employees of ALROSA Belgium NV were on office duty in turn, while the rest of them worked remotely from home.

I arrived in Belgium in November 2020, when major restrictions were still in force, and the market had just begun to show the first signs of recovery.

At that time, ALROSA Belgium NV was already undertaking a new approach to conducting diamond viewings. Previously, Moscow colleagues used to come to arrange them, but due to flight restrictions, we started to hold viewings on our own using an online connection with Moscow specialists, who carried out remote visual control of the viewings.

On average, depending on the scope of the trade event, shows are attended by 60–80 companies, which

Akil Zubir was born in 1971 in Tashkent. He graduated from Lomonosov Moscow State University with diplomas in social and political science and law, as well as from the Academy of National Economy under the Russian Government, receiving a Master of Business Administration degree. In 1993, he started his career in the insurance sector. From 2012 to 2016, he was the head of the regional network of SOGAZ, the largest Russian insurer. He joined ALROSA in 2017 as the head of the insurance department. In 2020, he was appointed head of ALROSA Belgium NV after winning a competition among the employees of the ALROSA Group to receive this position.

mean 20–40 companies per week. Usually, one client is presented by two experts, so the office hosts up to 80 people per week. Having gained experience of holding independent viewings, we have realized that we can handle the task and are ready to continue working this way in the future. This will enable ALROSA to optimize costs and resources spent on rough diamond viewings in Antwerp.

ABOUT THE MARKET

Diamond turnover here has decreased, but Antwerp's value stays the same

The pandemic had certain negative effects on the activity of the Antwerp diamond market. Like many other economic sectors, our industry faced a long lockdown, which proved to be even more drawn out than in other diamond trading centers. This led to a redirection of trade flows away from Antwerp.

For example, in 2020, during the pandemic and the general downturn in the global diamond market, ALROSA's supplies to Belgium decreased by more than 30%. Belgium's share in ALROSA's total sales fell from 47% to 39%.

In my opinion, the status of Antwerp as the capital of the diamond world remains unaffected. The city sets high standards for the entire market and directs its efforts towards sustainable development of the industry as a whole. Belgium is strong thanks to well-developed legal regulations, a stable financial system, and high business standards, including those in the field of human and labor rights, environmental protection, and anti-money laundering and counter-terrorist financing legislation. All these values are shared not only by responsible market players, but also by retail consumers.

More than 80% of world rough diamond turnover and more than 50% of polished diamonds pass through Antwerp. All the leading industry players and organizations are represented in Antwerp. Besides, major market participants are located within 200 meters from each other. That is why many trends are formed here, joint initiatives and projects are being developed, and agreements are being reached that subsequently shape the look of the entire world diamond industry. We, of course, strive to be an active participant, while shaping the agenda and protecting and promoting the interests of ALROSA as a whole.

European interest in diamonds has grown amid the pandemic

As you know, Europe's share of the diamond consumption market is far from significant, and in recent years, there has been no meaningful increase in the purchase of diamonds. But during the coronavirus outbreak, amidst restrictions on travel, restaurant visits and public events, sales of diamonds and diamond jewelry in Europe have grown significantly. Consumers' attention was drawn to opportunities to present jewelry to their loved ones as a token of gratitude and love.

The share of the United States, the largest consumer of polished diamonds, is now estimated at 50% of world turnover. Polished diamonds and diamond jewelry of any size and quality are in demand there. Over the past 20 years, China's share has grown steadily thanks to the emergence of its middle class. In that country, medium-sized polished diamonds (up to 1.5 carats) of high color and quality characteristics are highly sought-after. In the Arab countries, the demand for large and expensive diamonds is still high. Sales of polished diamonds are seeing dynamic growth in India, the world leader in cutting and polishing diamonds.

The general trend, regardless of country or continent, is the desire of buyers to know the origin of diamonds and to purchase only from those manufacturers who respect the principles of responsible business conduct, labor laws and environmental standards.

Antwerp and synthetic diamonds

It seems to us that the market is not against the development of laboratory-grown diamonds, but only if they are clearly separated from the market for natural diamonds.

Belgium has industry self-regulation mechanisms aimed at dividing the markets for natural and synthetic diamonds through separate sales and mandatory disclosure of origins. The state is doing a lot to prevent the mixing of markets.

In 2019, a revised version of the Royal Decree "On Measures Pertaining to the Supervision of the Diamond Industry" was made public in Belgium. It contains provisions on the regulation of activities in the markets for natural rough/polished diamonds and laboratory-grown ones. Among other things, the document introduces a requirement to use terminology in relation to synthetic diamonds in accordance with international standards and to register persons conducting business within this category; it also establishes the procedure for declaring transactions with synthetic diamonds and the verification of consignments.

Since January 2020, the EU countries (up to 98% of diamond transactions in the European Union take place in Belgium) have introduced separate customs codes for synthetic rough and polished diamonds.

In 2022, they will be replaced with unified codes for synthetic diamonds according to the Harmonized System administered by the World Customs Organization.

Thanks to cafe Kalabasa, Moscow, for providing a place for the photo shoot. Photo: Nick Dunaevsky.

Antwerp is not a shop window, but a strong community united by a common passion

When I came to the epicenter of the diamond world, I had no illusions that I would see a treasure city. Here, diamonds, both rough and polished, are the subject of commodity relations, and the environment was elaborated for a B2B model. But still, it is easy to understand that you are in the global capital just by observing people. In this diverse, multinational city, people with different mentality and culture are united by one and only one passion—a passion for diamonds. This, in my opinion, is the most important thing. Reputation still plays a crucial role. An agreement secured by a final "Mazal" is as solid as a written one.

This market values flexibility before pedantry: you need to remember and respect other people's traditions. The extent to which the Belgians have developed this skill is evidenced by their ability to maintain a conversation in many languages. I admire the way diamantaires can absolutely seamlessly switch from Dutch to French, from French to English, to help the other person feel comfortable.

ABOUT ME

Learning Dutch

I was looking at them with benign envy and decided that I needed to learn one of the official languages of Belgium. A lot of administrative work and documentation is in Dutch, so I chose that language. The Flemish people rejoice when they hear a foreigner speaking their native language. For me, Dutch is a working tool, an opportunity to establish more trusting relationships with locals, and a way to adapt to a new place. Listening to the radio already seems more interesting to me.

In insurance, we sold confidence and promises, here we sell emotions

In order to determine the price of an emotion and sell it, you first need to digitize it. To do this, you need to understand the characteristics and features of the product that gives this emotion. Therefore, in addition to studying Dutch and the particularities of economic and social relations in Belgium, I was lucky enough to attend gemological courses at the Antwerp laboratory of the International Gemological Institute.

Before leaving for Belgium, specialists from ALROSA's United Selling Organization and Diamonds of ALROSA provided a great deal of support during my preparation. Now colleagues, who have vast knowledge of rough diamonds, support my continuous efforts to succeed in my profession.

Given that the Antwerp trading company is not only an independent legal entity, but also part of the large Group, its leader must perfectly navigate through many areas, from risk management to corporate standards.

I was intensely imbued with knowledge and impressions, therefore, the year in Belgium has passed like a week for me.

Why I entered the contest for the position of diamond trading company director

People often ask me why I decided to apply for the position of ALROSA trading company director after 27 years of experience in insurance. I was driven by curiosity, professional interest, the desire for career growth and the confidence that I could be useful in this fresh area. It is a great honor and an even greater responsibility to represent ALROSA in Belgium. My insurance background has given me a lot: managerial experience, practice in establishing long-term relationships with clients, and the ability to work in a multitasking environment where the same working level of expertise is required in all areas of the company's activities.

FLASH INTERVIEW

Antwerp is...

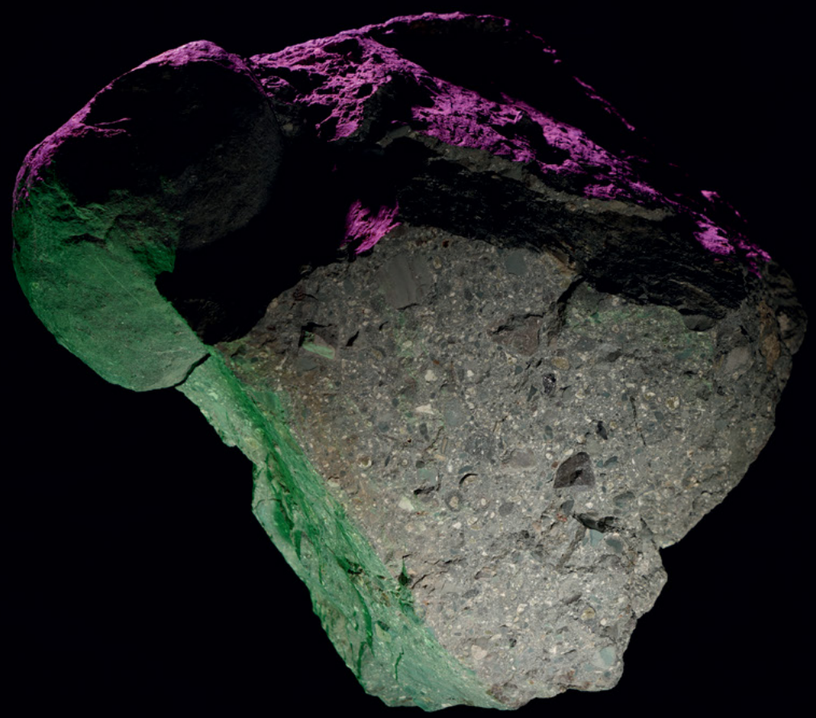
Walking. I moved here during the lockdown, when everything but the convenience stores was closed. Each time, I walked for 10–15 kilometers and enjoyed the parks and beautiful architecture. I can't even single out my favorite place in this city. Walking around without a final destination and getting to know Antwerp through this experience has been a pleasure.

Which national football team do you root for, Russia or Belgium?

Of course, my family and I now follow both the Russian and Belgian football scenes. The Belgian way of playing definitely appeals to me, and the national love for football is really contagious. In the summer of 2021, during UEFA Euro 2020, the bars in Belgium were already open, and we, being at home, could figure out who was leading in the match and what the score was just by listening to the shouting in the bars.

KIMBERLITE

IN FIGHT AGAINST THE CARBON FOOTPRINT



EARLY STUDIES BY ALROSA AND LEADING RESEARCH CENTERS IN MOSCOW HAVE EXPERIMENTALLY PROVED THAT KIMBERLITE HAS THE ABILITY TO ABSORB CARBON DIOXIDE FROM THE ATMOSPHERE DURING ITS PROCESSING. IN THE FUTURE, THIS WILL HELP TO CREATE A BASIS FOR DIAMOND PRODUCERS TO IMPLEMENT CLIMATE PROJECTS IN ORDER TO CAPTURE CARBON DIOXIDE FROM THE ATMOSPHERE AND STORE IT.

photo: GRIGORY IFTODIY

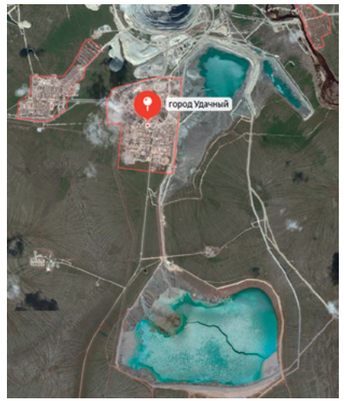
Alexey Masanov, Head of Innovation Implementation Department, ALROSA Center for Innovations and Technologies

Last year, ALROSA completed the first stage of research on the absorption of carbon dioxide from the atmosphere by a diamond-bearing bedrock—kimberlite. Initial testing results confirm the hypothesis of the ability of kimberlite ore to absorb significant amounts of CO_2.

"The ability of ultrabasic rocks to absorb carbon dioxide from the air has long been known and mentioned in the scientific literature," said Alexey Masanov, Head of Innovation Implementation Department, ALROSA Center for Innovations and Technologies. "However, the phenomenon drew no practical interest before and was studied only in the geological aspect—for geochemical searches for diamond deposits by the products of kimberlite transformation as a result of the rock's exposure to atmospheric air and water."

All natural systems tend to balance, so there is always something basic (or providing an alkaline environment) interacting with something acidic. In the atmosphere, this is mainly CO_2. Kimberlite is a typical ultrabasic rock with variable composition.

Udachnaya pipe and tailing dumps near the town of Udachny



Udachnaya pipe's potential

In 2021, the Center for Innovation and Technology, together with the ALROSA Geological Research Enterprise (NIGP) and experts from the N.S. Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences, conducted chemical studies of the hypothesis that processed kimberlite ore has the ability to absorb carbon dioxide from the atmosphere.

The experts analyzed core samples from the deep horizons of the Udachnaya pipe and already empty rock from the tailings dump after diamond extraction. The chemical composition of the samples that were present in the tailings dump from 1 month to 10 years was compared with the chemical composition of the initial ore from the mine. The samples were examined using IR spectroscopy, CHN-elemental analysis, and X-ray diffraction spectroscopy. Finally, traces of the chemical transformation of the initial ore under the influence of water and carbon dioxide from the atmosphere over several years were found.

The results of the study confirmed the assumption: the carbonation reaction products of the minerals that make up kimberlite were found in the samples of waste rock from the tailings dump. This kind of reaction could only have occurred by absorption from the air at the processing stage and staying in the tailings dump for some time. According to Alexey Masanov, in the case of ultrabasic ore—the kimberlite of the Udachnaya pipe—the estimated absorption reaches 80 kg per 1 ton of processed ore due to the transformation of the initial minerals (olivine, phlogopite and clinopyroxene) and the accumulation of carbonates and hydrocarbones in calcite and dolomite forms.

"Green" potential from Africa to the Far North

ALROSA is not the first diamond producer to be interested in this effect.

In 2016–2018, De Beers also conducted such research and obtained similar results. Now these works in the West, carried out by the CarbMinLab research group from Columbia University, are underway. De Beers' studies were conducted in diamond mines in South Africa and Canada. Their results showed a strong dependence of the ability to absorb carbon dioxide from the air during ore processing on a number of factors: the first and most important of which is the chemical composition of the initial kimberlite. The absorption potential is impressive: if carbon dioxide is passed through an aqueous suspension of kimberlite, its total absorption can reach 342 kg per 1 ton for so-called "black kimberlite" (due to the presence of fresh unchanged olivine in the composition).

Diamond pipes' kimberlites differ in mineral composition. The amount of silica in the kimberlite plays a leading

Polina Anisimova,

Chief Ecologist of ALROSA:

– Among the sources of greenhouse gas emissions in diamond mining, the main place is occupied by the transport complex and energy facilities. Today, the ALROSA Group receives about 90% of its electricity from renewable sources, and is replacing traditional liquid fuel with natural gas in its logistics block, which allows a structural reduction of greenhouse gas emissions. But today it seems difficult to achieve carbon neutrality only by modernizing current production processes. Achieving ALROSA's ambitious goals for carbon neutrality is possible through a combined approach, which also provides for the absorption of CO_2 from the atmosphere, and compensatory measures.

role in the intensity of carbonation: the more quartz there is in the initial rock, the less it will be able to react with carbon dioxide. And vice versa, the more ultrabasic minerals in the original kimberlite—olivine, phlogopite, pyroxene, etc.—the higher the absorption capacity. The content of the latter, in turn, is subject to the extent to which the kimberlite composing the pipe has retained its original chemical composition over the past 300–350 million years since its formation in the Middle Paleozoic, when the pipe was an underground part of a volcano emerging on one of the protocontinents. During this long time, not a trace of the volcano remained, and what remained of the protocontinents became part of the modern continents. Diamonds that were carried out by the lava of these volcanoes are now mined mainly in Africa, Canada and Yakutia.

In Africa and the Arkhangelsk Region, where kimberlite pipes were strongly exposed to groundwater and the CO_2 these waters carried from the surface, the ores were significantly transformed, and today their absorption potential is low. For instance, the kimberlites of the Arkhangelsk diamond-bearing province (where ALROSA's subsidiary Severalmaz operates) are mostly saponite clay. This is the final form of chemical transformation of kimberlite ore, so it is unable to absorb carbon dioxide from the air noticeably.

But in the Far North, the kimberlite pipes stayed for a long time in relatively inert conditions and preserved olivine and phlogopite to the maximum extent.

Due to insignificant exposure to chemical transformations for millions of years since their formation, the Yakut deposits, in particular the Udachnaya pipe and the Upper Muna, demonstrate impressive CO_2 absorption rates.

Ore during beneficiation at Plant No. 16 of the Nyurba MPD, Nakyn settlement. Photo by: Evgeny Likhatsky

Alexey Masanov:
"Preliminary results show that the absorption potential for CO_2 from the atmosphere is comparable to, and in some scenarios may be several times higher than, the carbon dioxide emissions of the ALROSA Group. For example, the absorption of CO_2 of the Udachnaya pipe kimberlite may be up to 80 kg per ton of processed rock. If similar results are obtained at other fields of the Group, it will be possible to say that the potential for carbon dioxide absorption by the company is 4 times higher than its emissions in CO_2 equivalent."

Mikhail Dubovichev,

Head of the ALROSA Center for Innovations and Technologies, says:
— Verification along with correct estimation of the annual amount of CO_2 absorption by kimberlite will allow taking a fresh look at ALROSA and the diamond industry. This will also become another strong argument for consumers when buying namely natural diamonds.

Capture and storage

If we compare the ALROSA climate project with other CCS projects (Carbon capture & Storage) declared and implemented around the world, the former has a key advantage: the absorption occurs spontaneously and is economically justified by diamond mining, in contrast to CCS projects connected with uprated CO_2 introduction from the air to ultrabasic rocks by dissolution in water and further injection into the subsurface basalt cavities at depths of 500 m.

This method requires significant power consumption. The most successful Orca Carbmix project to date, implemented in Iceland by the Swiss company Climeworks, even in synergy with Hellisheidi, one of the world's largest geothermal power plants, is rather costly from the operation point of view. According to the creators of the project, the cost of $C0_2$ disposal now exceeds US$600/ton, and the target competitive cost, to which the aspirations of developers are addressed, is US$100–150 for 1 ton of CO_2.

Kimberlite ore's ability to spontaneously absorb carbon dioxide from the air is a reliable natural way to capture, absorb and dispose of CO_2 in the form of end products—calcium and magnesium carbonates, as the basis of sedimentary rocks on Earth. Moreover, this method is much more reliable than, for example, CO_2 absorption by trees, since trees accumulate carbon actively only in the first stage of their growth, and, in addition, it happens that trees burn during frequent summer fires, with a corresponding reverse effect and emissions of CO_2 into the atmosphere, while carbonate sequesters it forever.

To process kimberlite, water saturated with CO_2 from the air is used. Photo by: Carlos Folgozo

Among other positive factors, the preliminary preparation of the extracted ore in ALROSA processing plants takes place in grinding mills with a large amount of water, and water at the same time plays the role of CO_2 transport, whose solubility in water is much greater than its content in the atmosphere. Besides, the solubility of CO_2, as well as other gases, is increasingly greater in colder water, so the harsh Yakut climate facilitates the process.

The research continues

ALROSA teamed up with leading scientific centers of geology and geochemistry and continued research at enterprises in Yakutia and The Arkhangelsk Region. The research is scheduled for completion by the end of 2023. If similar results are obtained at other deposits, it will be possible to conclude that the absorption of carbon dioxide during the development of deposits is 2–3 times higher than the emission of greenhouse gases (in CO_2 equivalent) during extraction, processing and further cutting into polished diamonds.

DON'T BIDE *your time*

ALROSA and Antiglyanets (@sncmag), a popular Russian Telegram channel, presented a collection of jewelry for everyday wear, thus proving that people can and should buy diamonds for themselves. You don't need to wait for a special occasion, you need only to love yourself.

text: ZLATA FETISOVA

It's hard to throw your mind back to a time when diamonds were out of fashion. Their uniqueness and artistic value make them highly appreciated. ALROSA Diamonds and the authors of the Antiglyanets Telegram channel decided to show that diamond jewelry is no longer a luxurious attribute for social outings. And in October 2021 the Diamonds.Daily collection, accompanied by the motto “Don’t bide your time!” was presented to the public. 24 jewelry items, including earrings, necklaces, pendants, rings, signet rings and a diadem, made of yellow, white and rose gold with natural diamonds are designed to be a woman’s companion at any moment of her life: at a party, on a business meeting or during a movie date.

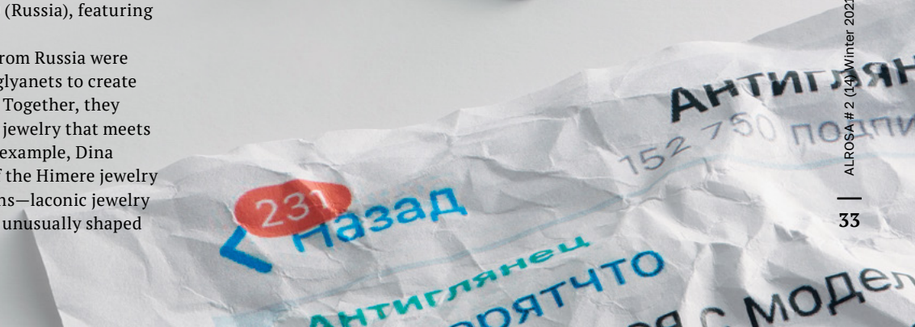
Natalya Arkhangelskaya, Yulia Posh and Tatiana Stolyar, the authors of the Antiglyanets Telegram channel, are sure that any woman can wear Diamonds Daily jewelry every day and buy it for herself, just like handbags or shoes. In just a few years, the former editors of a glossy magazine created a social life blog powered by the increasingly popular Telegram messenger. They have already gained more than 160,000 subscribers, and in 2020 entered the *Forbes’* 30 under 30 (Russia), featuring top young entrepreneurs.

Six talented young jewelers from Russia were attracted by ALROSA and Antiglyanets to create the Diamonds.Daily collection. Together, they came up with original designer jewelry that meets the spirit of modern times. For example, Dina Sagidullina, creator designer of the Himere jewelry brand, created modern talismans—laconic jewelry decorations with mesmerizing, unusually shaped encrypted symbols. And Nikolay Konev, founder of RHOEBERMAT, reinterpreted classic high art jewelry by opposing it with strict and primeval natural forms.

Natalya Arkhangelskaya, the co-founder of Antiglyanets, explained in detail how the idea of collaboration with jewelry designers from all over Russia came up and why diamonds will never lose their relevance.

Many Telegram channels have highlighted the collaboration between Antiglyanets and ALROSA in a very enthusiastic way. How do you explain this success? What do you think amazed everyone in such a way?

Honestly, it came as a surprise to us as well. We did not ask any Telegram channels to support us. But, as a result, we received more than a hundred publications, not only through Telegram channels, but also in such periodicals as Vogue, Forbes, Elle, Harper's Bazaar, Buro, RBK and Blueprint. I think the trick is that it came out very fresh: a diamond giant collaborating with a gossip-oriented Telegram channel! What’s more important, we invited Renata Kharkova to work on the stylization, and she created a very modern collection. Together with her, we created a wonderful, easily understandable story. It was very shareable, and many people shared it.



THE CHANNEL IS CALLED ANTIGLYANETS (MEANING ANTIGLOSS) BECAUSE IT FLOWS ORGANICALLY FROM GLOSSY MAGAZINES. IT'S GREATER THAN GLOSS: **IT'S FASTER AND SHARPER**

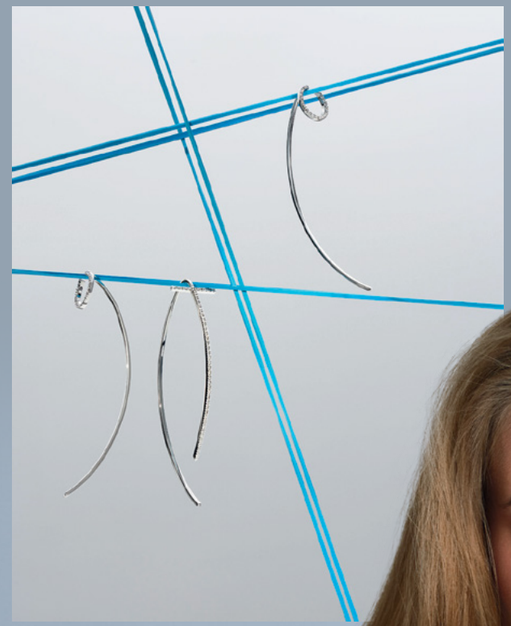
Jemae ring

What do you consider to be the fundamental difference between the audience's interactions with the content of Antiglyanets and the content of a classic glossy periodical?
Our approach to content differs greatly from that used in glossy magazines, from short formats with poignant, very conversational, simple and fast text, to various observations and selected topics. The channel is called Antiglyanets because it is a logical continuation of glossy magazines. It's greater than gloss: it's faster and sharper. But one way or another, we all come from the world of gloss, and if there were no gloss, there would be no us.

The Diamonds.Daily concept proclaims that a woman can buy diamonds for herself. Why do you think it's not shameful now, but even cool?
You know, I do not share the presumption of many Russian women that a man should present jewelry, because it puts you in some kind of weak, subordinate, kind of wait-and-see position. You sit expectantly and wonder when he will think of handing you a gift you'd like. Or even worse, if you beg, or hint. I don't like that position. It's generally not very useful for mental health. I think that it is better for a woman to be self-sufficient and to buy herself whatever she likes. And a man should have the opportunity to give the presents that he wants. This will result in no resentment or disappointment if you get an undesirable gift, at the wrong time or in the wrong context. There's no need to take offense or lecture anybody. You will accept gifts from others with gratitude if you have the opportunity to give them to yourself in the same way.

What do diamonds represent to you?
First of all, despite the banality, I believe that the most ingenious slogan is that "Diamonds are forever." It fully justifies itself. For me, diamonds are something eternal, something that will never leave you. Unlike cars, which are subject to wear and tear, real estate, which can lose its relevance, clothes, which go out of fashion, and definitely unlike gadgets, diamonds will stay with you for years and may stay with your children as well. Fashion marketers often speculate that you can pass grandma's tweed jacket to your children. That's not the case. But it does work with diamonds. When your children and grandchildren get them, the diamonds will be just as pristine as they ever were. The thought that my daughter will someday wear my diamond rings brings me comfort, and that is why I really love diamonds.

How did you come up with the idea to invite young Russian jewelers to the collaboration? How did you choose the designers?
I am in favor of trusting professionals in all areas of business and creativity. I was never subject to temptation to act as a stylist or photographer myself, let alone be on the front line of such a complex science as jewelry, which requires a lot of experience, knowledge and taste. Therefore, we initially decided to invite professionals, and certainly Russian ones. ALROSA is a large national asset, therefore, it seems



Signature earrings designed by Himere within a unique diamond set

Six talented young jewelers from Russia were brought in by ALROSA and Antiglyanets to create the Diamonds. Daily collection

WE HAVE GATHERED A TEAM FROM DIFFERENT REGIONS.

IT WAS ACCIDENTAL, BUT IT WORKED OUT PERFECTLY. THERE ARE EVEN JEWELERS FROM SIBERIA AND YAKUTIA. I ALSO WANTED TO INCLUDE MORE NICHE AND SMALL BRANDS, SINCE THEY ARE NOT ENTIRELY REVENUE–FOCUSED.

to me that it is important that the jewelers are also from Russia. We have gathered a team from different regions of Russia. It was accidental, but it is really great. There are even jewelers from Siberia and Yakutia. I also wanted to include more niche and small brands, since they are not entirely revenue-focused. Some of them, like Himere, may make only a single collection per year. And that has its own charm: they do it out of love for jewelry, and not greed for profits, like many large-scale commercial brands. They seemed to me closer to the real art. And then, we choose people who work outside the box, who don't just work the filigree or make studs, but create something new and eccentric in design. We wanted to find artists, and I think we succeeded.

What are your favorite jewelry pieces from the Diamonds.Daily collection?
I bought myself a diamond snowflake, the JEMAE ring. And I am also thrilled—although I did not pin any expectations on what my colleagues came up with (Julia Posh and Tatiana Stolyar, the other

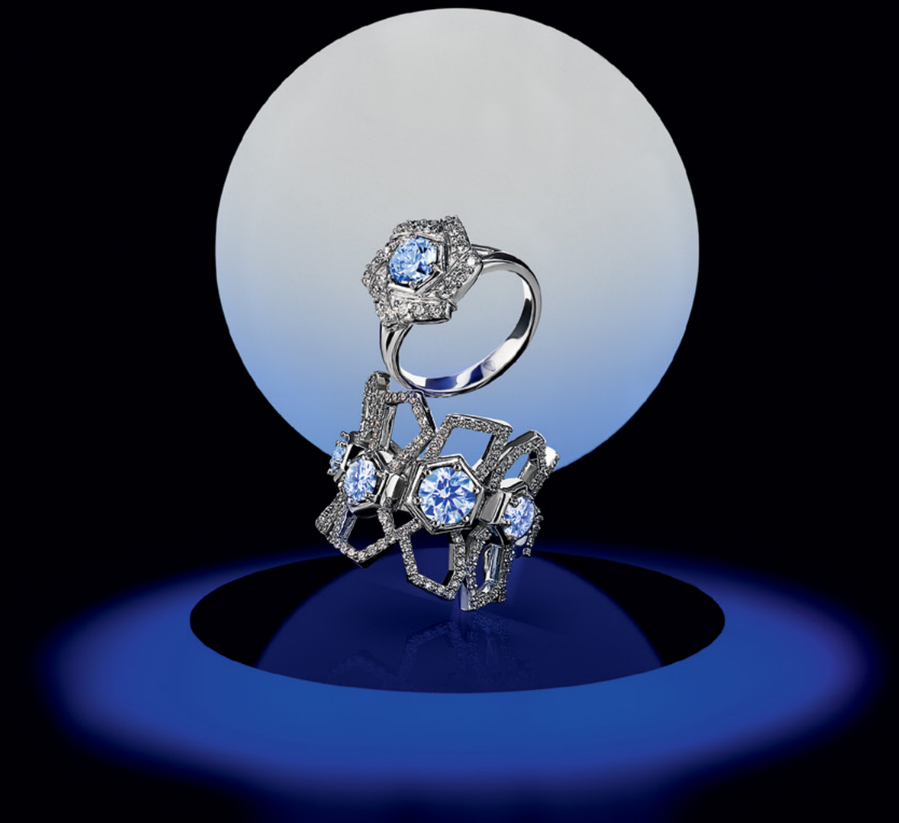
Pink gold tiara in the shape of a bowl symbolizes hedonism and an easy-going way of life

The items were created by Antiglyanets

The items were designed by KOVA

authors of the Antiglyanets Telegram channel). They made exactly what the jewelry industry lacks now: a sort of viral and meme jewelry, which can be a great topic of discussion and look truly modern, while being simplistic and straightforward. And, of course, I'm madly in love with the now-iconic glass tiara created by Posh.

Did you have any specific expectations when you began your collaboration with ALROSA? Perhaps, some of them did not come true, or, on the contrary, surprised you in a good way?
I was pleasantly surprised by my colleagues, to the point where I'm ready to build a monument to them. I was also very surprised and pleased—although I was hoping for it—by the incredible media resonance that we got. It was real hype. Our PR moves have rarely met such a warm response from the audience. Generally speaking, everything turned out to be much easier than I expected, thanks to our partners from ALROSA. At first, I was worried that our lack of experience in jewelry would not allow us to explain what we really wanted. But ALROSA's production department transferred our whole "Wishlist" to paper so accurately and quickly that I was shocked. Many thanks to my colleagues for this.



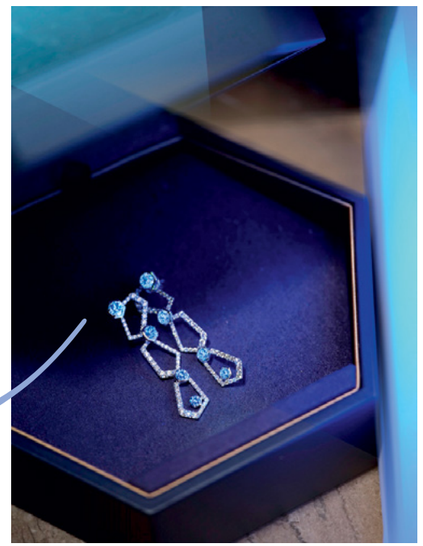
Christian Siriano and Luminous Diamonds:

A BRILLIANT COLLABORATION 2021

CHRISTIAN SIRIANO, A TRENDING DESIGNER AT THE FOREFRONT OF AMERICAN GLAMOUR AND THE CREATOR OF MULTIPLE RED CARPET LOOKS, AND JEWELRY BRAND LUMINOUS DIAMONDS, HAVE TEAMED UP TO PRESENT THEIR COLLECTIONS ON MOST COVETED RUNWAY—AT NEW YORK FASHION WEEK.

All of Luminous Diamonds creations have a least one fluorescent diamond—a rare type of diamond that glows blue under UV light. In daylight, these precious gems shine as brightly as natural diamonds do. Only 6% of all the natural diamonds in the world can become Luminous Diamonds.

** According to AGS Laboratories, a diamond grading laboratory of the American Gem Society.*



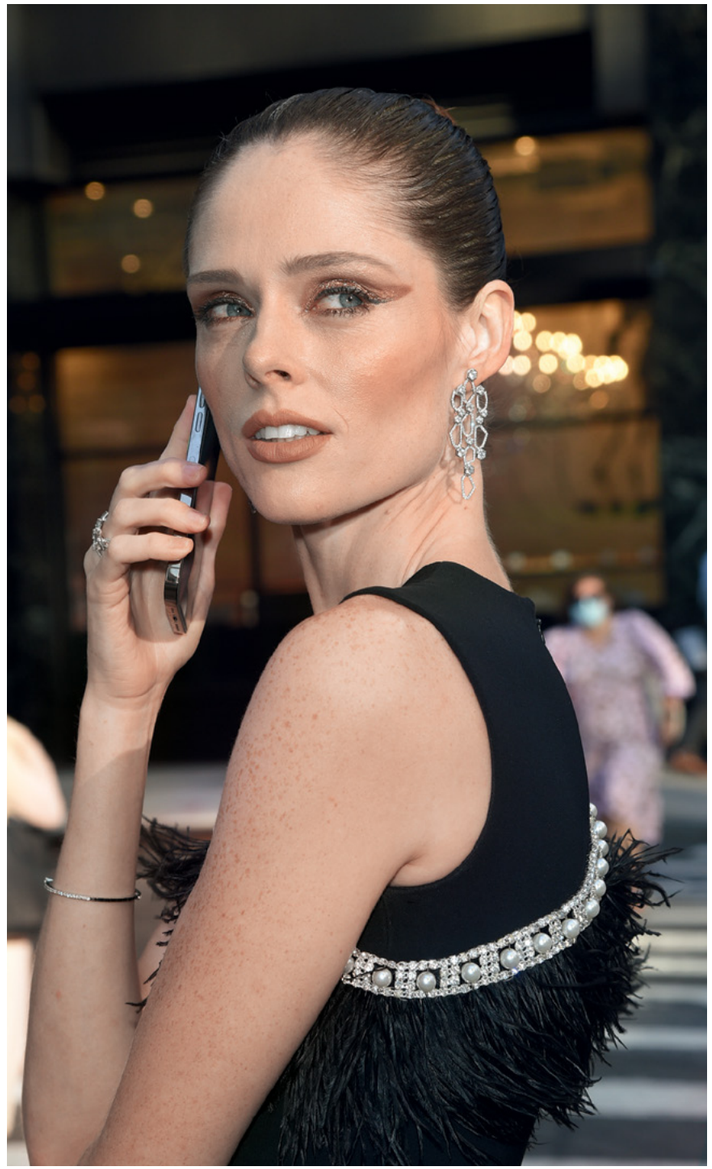
FOR NEW YORK FASHION WEEK, LUMINOUS DIAMONDS CREATED AN **AWE-INSPIRING TIARA**, TIIE ONLY ONE OF ITS KIND.

Luminous Diamonds celebrates individual differences and staying true to oneself, with its philosophy reflected in the slogan “Follow Your Inner Light.” The message is resonating with trendsetters and influencers, one of whom is Christian Siriano, a designer who is not afraid to push the limits and be himself.

Dressing first ladies, celebrities and pop stars (think Michelle Obama, Oprah Winfrey and Lady Gaga), Siriano has redefined beauty and fashion as inclusive of different shapes, ages, ethnicities and sizes. The youngest winner of the popular reality show *Project Runway*, he presented his collection at NYFW in a 2008 debut. *TIME* Magazine has named him one of the 100 Most Influential People of 2018 for his dedication to promoting diversity in fashion.

Models of all shapes and sizes have walked in Siriano’s shows, demonstrating that the designer doesn’t just talk the talk. Perhaps for this reason he chose Luminous Diamonds, a brand with a strong philosophy of inclusion that encourages people to be themselves and reveal what drives them to the world.

COCO ROCHA, A LUMINOUS DIAMONDS MUSE, WORE **THE BRAND'S INNER RADIANCE EARRINGS** AND AN AQUAMARINE CHRISTIAN SIRIANO SUIT TO HIS SHOW AT THE 2021 NEW YORK FASHION WEEK.



Supermodel and entrepreneur Coco Rocha has been the face of numerous fashion campaigns including Chanel, Lanvin, Dior, Yves Saint Laurent, Balenciaga, and Dolce & Gabbana. She is also a supporter of young models and an advocate who speaks out against eating disorders in the fashion industry.

At Christian Siriano's New York Fashion Week show, Rocha paired cascading Luminous Diamonds earrings with the designer's aquamarine suit featuring a billowing train. She also wore a Siriano dress with Luminous Diamonds Inner Glow earrings to the annual gala for DKMS, a charity that fights blood cancer. The collaboration between Christian Sirian and Luminous Diamond, with Coco's appearance in the brand's pieces, was picked up by a number of publications including *Forbes*, *The Daily Front Row*, *Marie Claire*, *E!Entertainment*, *RadarOnline*, *Extra and Yahoo!*

Luminous Diamonds is no stranger to supporting emerging talent. The brand has partnered with the Fashion Scholarship Fund, the largest nonprofit of its kind in the US that provides more than $1 million in scholarships annually to budding designers. Together, FSF and Luminous Diamonds created the Design Your Inner Light challenge, asking students to create a look that reflects the essence of the Luminous Woman. Christian Siriano is a mentor for the challenge participants, and the winner's sketch will be realized as a full look and worn by none other than Coco Rocha.

EKATERINA MUKHINA, ONE OF THE MOST INFLUENTIAL FIGURES IN THE FASHION INDUSTRY, IN COLLABORATION WITH **ALROSA DIAMONDS**, HAS LAUNCHED A CAPSULE COLLECTION OF BERKANA JEWELRY INSPIRED BY RUNES. IN A LIFE-AFFIRMING INTERVIEW, EKATERINA TALKED ABOUT HER LOVE OF MEANINGFUL JEWELRY AND HER OWN RECIPE FOR ABSOLUTE HAPPINESS, WHICH SHE HAS IMPROVED OVER THE PAST TWENTY YEARS.

RUNIC COMPASS

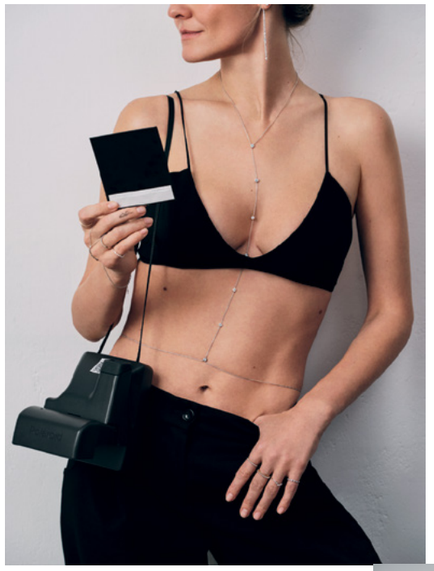
Text: ZLATA FETISOVA

ALROSA and Ekaterina Mukhina, Editor-in-Chief of Elle Russia, proposed a new interpretation of jewelry for the modern energetic and ambitious woman who rigorously protects the main values in her life. The Berkana capsule collection has become the embodiment of sacred geometry and symbology enclosed in five runes: the main rune, Berkana, is a symbol of a happy woman, Gebo is a symbol of love and harmony, Ansuz is a symbol of wisdom, Ingus is a symbol of celebration and well-being, and Sowulo is a symbol of energy and change. They match the extraordinary jewelry design that makes the elegant earrings, studs, cuffs, rings, necklaces and harness look like modern talismans. An individual, yet easy to understand concept of the Berkana capsule collection gives complete freedom to experiment with style and meanings, the two leading lines in the life of the collection's creative director, Ekaterina Mukhina.

WHAT IS THE HISTORY OF THE CREATION OF THE CAPSULE JEWELRY COLLECTION TOGETHER WITH ALROSA? HOW DID THIS COLLABORATION APPEAR?

I have loved jewelry since childhood. Both my grandmothers loved and collected jewelry, and so did my mother. In evenings, we used to sort through the contents of her box with great pleasure. Besides, I love working with jewelry: I have taken a lot of jewelry pictures. And every time I look at rings, necklaces, bracelets, or earrings, I see them as works of art. So when ALROSA proposed that I create a joint collection, I was delighted, and I agreed. I am not a jewelry designer. I did not study it, but my visual and personal experience (after all, I have been working in gloss for 20 years) allowed me, together with a team of professionals, to create a very beautiful and unique collection of jewelry.

I ADORE THE CREATIVE PROCESS, WORKING AS PART OF A TEAM, AND. FORTUNATELY, WE MANAGED EVERYTHING WELL WITH ALROSA, **AS WE HEARD AND UNDERSTOOD EACH OTHER**.



TO WHAT EXTENT IS THE ETHICAL ASPECT OF DIAMONDS IMPORTANT TO YOU, AS A PARTNER TO ALROSA IN THIS PROJECT?

The social agenda is a high-priority today in every initiative. Five years ago, when I became the editor-in-chief of Elle Russia, I realized that simply continuing to make gloss was not enough: it had to be filled with actual meaning.

The product message is very important to me. Which is why I asked ALROSA at the very beginning whether the path the diamonds take was understandable to their buyers. And I was told that ALROSA guarantees the “ethical” origin of each gemstone, that the extraction methods are absolutely transparent, and that the company's policy is aimed at environmental protection. My answer was: “Great, let's start working!”

IN THIS PROJECT, YOU ACTED AS THE CREATIVE DIRECTOR. WAS IT YOUR FIRST EXPERIENCE IN JEWELRY DESIGN?

Right, it was my first experience. I love the creative process, teamwork, and, fortunately, we managed everything well with ALROSA. We were on the same wavelength. The whole process from point A to point B was sheer pleasure. All the jewelry in our collection is very wearable, and the pieces complement one another very well. I contributed to that as a stylist. In addition, the pieces in the collection are so delicate that you can, for example, put rings on each finger and wear without removing them, which is exactly what I do myself. I live and sleep in jewelry. You buy it once, and you wear it all your life. It reminds me: when you have your own style, you don’t chase trends, you just try to be yourself. For example, I really love gray and black, and, whatever is in fashion now, I will continue to wear gray and black clothes. It's the same story with jewelry.

IN ONE OF YOUR INTERVIEWS, YOU SAID THAT YOU BELIEVE IN TALISMANS, SIGNS AND ENERGY. HOW DID THAT COME INTO YOUR LIFE? WHAT WAS YOUR FIRST TALISMAN?

We are Soviet children, so our talismans were small pins that our mothers, grandmothers, and aunts gave us. Actually, my journey began with a visit to India for training sessions in spiritual practices and meditation. At some point, I got acquainted with runes, read up on them and learned a lot of interesting things. There is something really magical about their geometry. I don’t participate in any esoteric practices but, for example, I really like astrology. Natal charts are incredibly interesting to me. Deciphering the keys from planetary placements, you can learn a lot about a person. You understand that everyone was born with their own code.

YOU PROPOSED THE CONCEPT OF RUNES FOR THE COLLABORATION WITH ALROSA. WHY IS IT IMPORTANT FOR YOU TO FILL YOUR JEWELRY WITH A WEIGHTY, SACRED MEANING?

Runes carry powerful energy. They have existed for many centuries, and each rune has some kind of sacred meaning. And although the world has changed a lot since then, good, evil and love are still the same. For the collaboration with ALROSA, we have chosen runes that carry positive energy. The key rune in our collection is Berkana, symbolizing a happy woman. I think it's great to wear jewelry that carries such meaning.

WHICH OF THOSE FIVE RUNES IS PARAMOUNT FOR YOU? WHICH ASPECT OF YOUR LIFE WOULD YOU LIKE TO ENHANCE?

I am convinced that when a woman is happy, everyone around her is happy, because in that state she can share a lot with the world. This feminine energy is very important, and it can help you move mountains. The essence of a woman is inspiration. And I really want to inspire my children and my editorial staff. I always say: you deserve more.

FIVE YEARS AGO, YOU SAID IN AN INTERVIEW THAT THE LIFE OF THE EDITOR-IN-CHIEF OF A GLOSSY MAGAZINE IS A 24/7 HELL, COMPLETELY INCOMPATIBLE WITH FAMILY LIFE. SINCE THEN, HAVE YOUR LIFE RHYTHM AND PRIORITIES CHANGED? HAVE YOU MANAGED TO FIND HARMONY? THE MEANINGS THAT YOU PUT INTO THE JEWELRY SEEM TO INDICATE THAT YOU HAVE.

When I first went to a psychologist 20 years ago, he asked me to draw spheres and arrange them for myself, my husband, children, parents, friends and career. In the first circle, I drew children, in the second, my husband, then career, parents, and friends. The psychologist suddenly asked me: “And where are you, yourself?” When I was young, I didn’t think that I should take care of myself first. But now I put myself in the first place, my girls are second, while career, friends, and family are third. And I can say that everything has changed for the better, everything seemed to be filled with greater meaning. Then, I gave birth to my second child. When you become a mom at 20 and 40, those are two completely different stories. I was 22 years old when Masha was born. I was working as a junior fashion editor at Vogue and dreamed of achieving something,

becoming more successful in my career. I went to the office at 9 am and left at 9 pm. I would express milk at work, freeze it and bring it home in the evening. I hardly slept at night, since I didn’t have a night nanny, and in the morning, I went to the editorial office again. Now that I am 40, I can finally go on a work trip and take Matilda with me. Previously, my status and finances did not allow me to do that, but now I have this opportunity. I have worked tirelessly for 20 years to have it.

My job still requires 24/7 involvement, it's just that the pandemic allowed us to work outside the office and significantly reduced the number of business trips. Now I apply myself to the tasks that only I can do, while delegating the rest. I no longer waste my resources on small things. Before, I was afraid to say “no,” and I would run to the other end of the city to save someone, to stylize, often to my own detriment. Now I have learned to give up the things that interfere with my priorities. And of course, my priority is my children. Even if some super-important trip is coming up, and I need to be with Matilda or Masha, I will choose them every time.

THE BERKANA RUNE, WHICH GAVE THE COLLECTION ITS NAME, SYMBOLIZES FEMININITY, THE SUMMER OF WOMAN’S LIFE, AND FEMALE HAPPINESS. WHAT DOES HAPPINESS MEAN FOR YOU?

My family, friends and relatives, and the opportunity to work on myself, constantly growing. That, it seems to me, is happiness. Three years ago, I caught myself thinking: “I have everything to be happy: my daughter has grown up to be a wonderful person, I have a great job and the most wonderful friends. What's next? In twenty years, will I really be returning home at 1 am from some event, only to return to the office in the morning?” Then Matilda appeared in my life. There should always be some kind of movement, development. I definitely have such a request, and the universe always finds an answer. New projects appear, such as, for example, the one with ALROSA. This is also growth for me, a new experience, and a successful one! I am very happy with it.

MY FAMILY, NEAR AND DEAR ONES AND THE OPPORTUNITY TO WORK ON MYSELF, CONSTANTLY GROWING.
THAT, IT SEEMS TO ME, IS HAPPINESS.

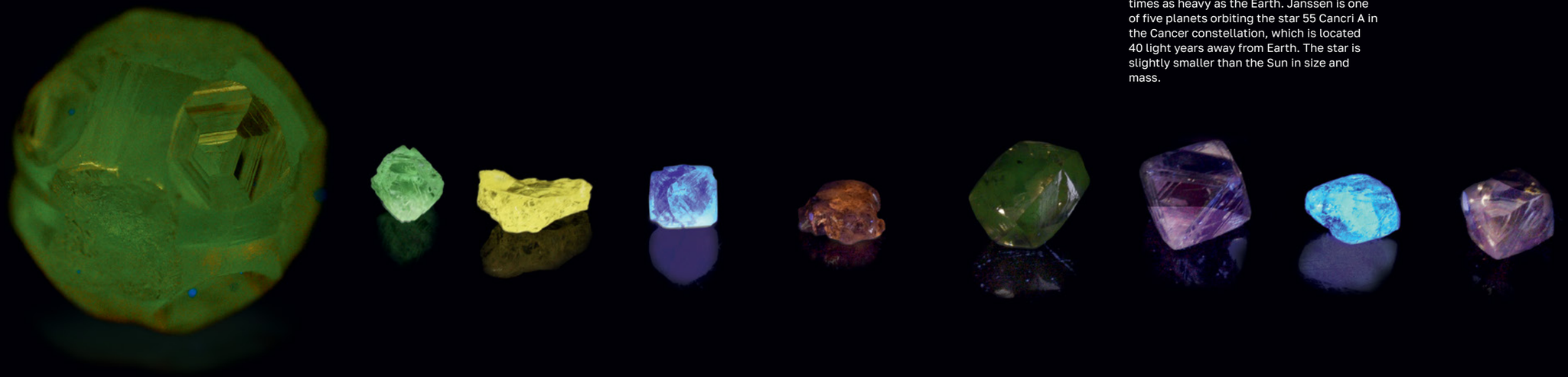
Across THE UNIVERSE

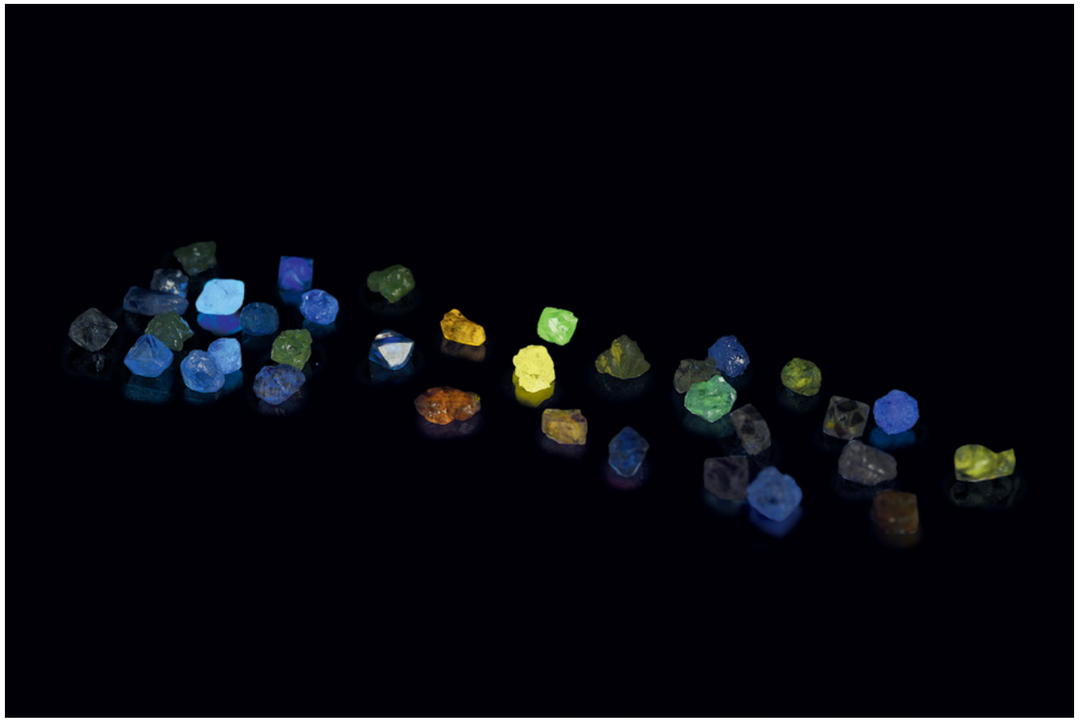
LAST YEAR, EVERYONE WAS TALKING ABOUT SPACE. AND THERE WERE PLENTY OF REASONS FOR THIS: 60 YEARS SINCE FIRST MAN BLASTED INTO SPACE, THE FIRST-EVER SHOOTING OF A FEATURE FILM IN SPACE, THE SPACEFLIGHTS OF JEFF BEZOS AND RICHARD BRANSON. HOWEVER, PLANETS AND STARS HAVE ALWAYS ATTRACTED PEOPLE. WE SUGGEST DIVING INTO THE UNIVERSE WITH THE HELP OF **FLUORESCENT ROUGH DIAMONDS.** MYSTERIOUS AND SHINY—IT IS IMPOSSIBLE TO TAKE YOUR EYES OFF THEM, JUST LIKE THE NIGHT SKY.

THE MILKY WAY
The universe consists of a huge number of galaxies of different sizes and masses. Ours is called the Milky Way. It includes the Sun with its planetary system, stars, interstellar gas and dust and dark matter. The nearest galaxy to us is Andromeda.

OUR SOLAR SYSTEM
Until quite recently, it was believed that the Solar System had nine planets. However, in 2006, the International Astronomical Union downgraded the status of Pluto to that of a dwarf planet. Pluto is still, however, the largest of the dwarf planets in the Solar System.

DIAMOND PLANET
A super-Earth exoplanet Janssen, discovered in the early 2000s, is composed of graphite and diamond. It is twice as large and eight times as heavy as the Earth. Janssen is one of five planets orbiting the star 55 Cancri A in the Cancer constellation, which is located 40 light years away from Earth. The star is slightly smaller than the Sun in size and mass.

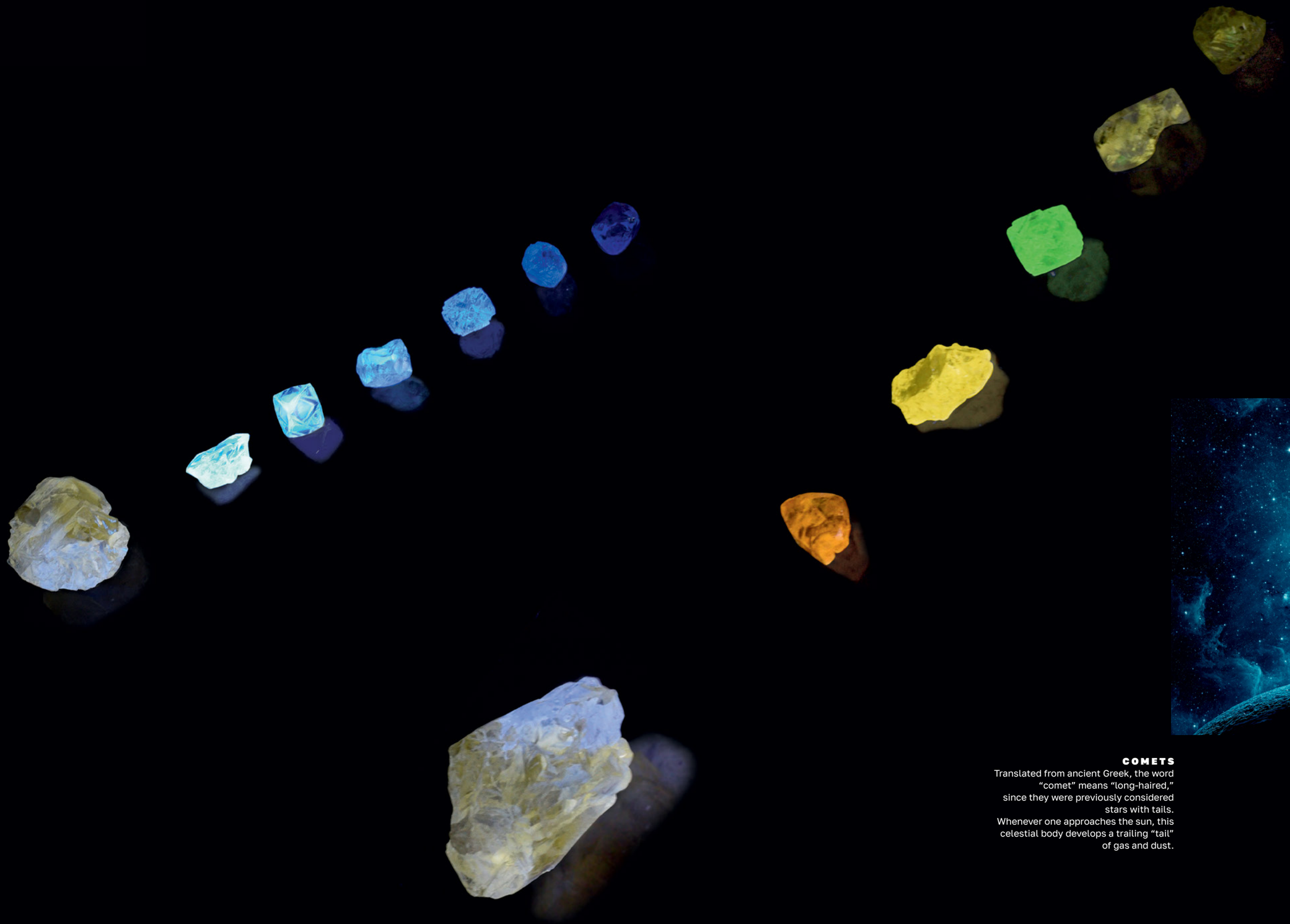




STARRY SKY
Our galaxy is approximately 256,000 light years in diameter.

EVOLUTION OF A STAR
Stars are born, live and die. A star's color changes during its evolution. It can vary between blue, white, yellow, orange and red. Blue stars are the hottest, and red stars are the coolest.

THE BIG DIPPER
Perhaps this is the most recognizable constellation. It resembles a dipper. It is usually observed in the Northern Celestial Hemisphere. The Big Dipper is formed by seven stars. It is in good “animal” company: among other things, it is surrounded by the constellations Draco, Canes Venatici, Leo and Leo Minor, Lynx and Camelopardalis. It is curious that the Big Dipper is depicted on the state flag of Alaska. It was created in 1926 by a 13-year-old boy of Russian-Aleutian-Swedish origin.



COMETS
Translated from ancient Greek, the word “comet” means “long-haired,” since they were previously considered stars with tails. Whenever one approaches the sun, this celestial body develops a trailing “tail” of gas and dust.

2 GIA LAB. FACTS ABOUT FLUORESCENCE

DIAMONDS CAN FLUORESCE IN A VARIETY OF COLORS.
These include yellow, orange, red, white and green. Variations in the atomic structure, such as the number of nitrogen atoms present, cause the phenomenon.
Blue, however, is by far the most common color of diamond fluorescence. Other colors are much less common.

THE MAJORITY OF ROUGH DIAMONDS DO NOT FLUORESCE.
In a study of more than 26,000 diamonds submitted for grading to GIA, researchers found that only approximately

25% to 35%

of them exhibited some degree of diamond fluorescence when examined with a standard longwave UV lamp, so it's likely that the diamond you see does not fluoresce.

Diamond Land AVIATORS

For those who mine diamonds and live in the North, air travel is of paramount significance. ALROSA's own airline connects the diamond cities with “the mainland” (locals' name for the central regions of Russia), and delivers food and cargo. We asked three employees of ALROSA Airlines to talk about themselves and their work.

Vladimir Litvinov

pilot, 34 years old

I was born and still live in the south of Russia, in the city of Krasnodar. In my family, every man was a pilot. My grandfather piloted a Yak-3 fighter during World War II and participated in the Prague offensive. My father has over 25 years of experience in civil aviation. They have always been an example for me!

Yet, I did not get into aviation right away. Realizing that it is never too late to learn, I decided to start small and entered the Kuban State Technological University to study programming. And I don't regret that decision at all. The knowledge I gained then still helps me in my work today.

After graduation, I joined the army and was assigned to an Air Force unit. Upon completing my military service, I returned and immediately entered the Sasovo Civil Aviation Flight School.

After graduating with honors from flying school, I completed pilot training for the Boeing 737 NG and started my career at Transaero Airlines. But in 2015, the company went bankrupt, and I got a job at ALROSA Airlines as a co-pilot.

Photo courtesy of Vladimir Litvinov

Today I occupy the position of air squadron deputy commander and have a flight instructor license.
Our squadron has 30 pilots in command and 26 co-pilots. Every single day, they transfer our passengers from point A to point B safely and in comfort.

All pilots are required to pass a yearly qualification test and a simulator test every six months. In the training center, we practice our actions in the event of extraordinary situations that may occur during the flight.

Our airline has four trainees, and all of them are graduates of flight schools. Right now, they are undergoing training on the Boeing 737 simulator. Upon training completion, they will become trainee co-pilots and will start flying under the supervision of our instructors. Therefore, either I or my colleague, the squadron commander, must accompany each trainee, regardless of their qualifications.

The head office of ALROSA is located in the city of Mirny, and the flight service is based in Krasnodar. There are also elements at the airports of Domodedovo, Vnukovo and the city of Novosibirsk. Those locations were chosen due to the flight geography: since flights are operated from differentcities, it is much easier to have our pilots in each of them.

According to the Federal Aviation Regulations of Russia, a pilot can spend no more than 90 hours in the air each month. In summer, passenger traffic is greater than in winter. Thus, a pilot usually flies about 80 hours a month in summer, and about 50 in winter.

I fly slightly less than the average pilot, but I still do at least 70/40 hours. Despite the amount of paperwork that command staff must do, we also have to maintain our qualifications. And this can be done only through regular flights.

I try to avoid thoughts of emergencies or unfavorable weather conditions, especially before a flight. After all, being calm and confident is a virtue for any pilot! Each crew is responsible for many lives, and we must do everything to make the flight comfortable for our passengers. It's about both people's safety and trust in our airline.

Since I spend most of my time in an office chair or an airplane cockpit, I try to stay as active as I can during my free time. Six months ago, I was keen on triathlon. After spending the summer training, I was already competing in the fall. In addition to rest, I am studying English, which is quite useful in my work. Malta is quite famous for its foreign language schools, and I've already been there twice.

FLASH INTERVIEW

Everybody who works in aviation has at least one superstition. What's yours?

— When I'm about to board, I greet the plane by gently stroking its fuselage, and only after that do I go inside.

Say you are a passenger. Is it a plane, train or car for you?

— A plane, for sure.

What do you like better, North or South?

— South.

Photo courtesy of Vladimir Litvinov

Victoria Sadkova

Automated Production Control System Engineer, 30 years old

I was born in the village of Shushenskoye in Krasnoyarsk Krai. In 1992, I moved to Mirny with my family to join my mother's parents.

My grandmother and my aunt worked at ALROSA Airlines, in the tool shop and in the contracts & procurement department, respectively. From childhood, I dreamt about aviation and becoming an air traffic controller myself. I went to Yakutsk for studies, but did not score high enough.

I didn't want to waste time, so I entered the Mirny Regional Technical College and studied the automation of production and technological processes. Now I, actually, work in a mostly male profession: I am a control and instrumentation engineer of the 3rd grade and a 4th grade locksmith.

After graduating from college, I got a job in the operations control department of ALROSA Airlines and became an accounting technician in 2011.

In 2013, I went on maternity leave, and, while I was away, the company underwent a reorganization, so all accounting technicians became flight dispatchers. When I returned to work three years later, I came in as a flight dispatcher as well.

Sometimes, I covered for an automated production control system engineer, and when this position became open, it was offered to me. Also, in 2017, I entered Tomsk University and picked up an external program in HR management, which I finished last year.

Dispatchers prepare documents for the repair and maintenance of aircraft, issue certificates for departure, maintain the dispatch schedule and standard, aircraft and technical documentation, hand out passports, forms and labels, keep records of aircraft serviceability, prepare and issue production orders for maintenance, and much more. Their duties also include providing parking and monitoring the process that occurs on the field, as well as preparing the aircraft for departure and servicing it after landing. An example of their work would be arranging the delivery Gorynich, a heater that warms planes from the outside.

As an automated production control system engineer, *I take part in improving the airline's document flow,* I supervise and periodically control incoming and outgoing documentation, control craft documentation, and I renew and replace airworthiness certificates, noise certificates and insurance policies. My task is to monitor the expiration of these certificates and renew them on time with the Federal Air Transport Agency. This requires preparation of a substantial number of documents, as well as the organization of an assessment of the authenticity of aircraft components. To do this skillfully, I took advanced training courses in Moscow.

In my line of work, it is important to do everything promptly and meticulously. When you come across something for the first time, you may freeze and think: "What is going on? Stop all of it!" And then you overcome that, you succeed, and you praise yourself for it. In difficult moments, our friendly team comes to the rescue. I'm never alone. Next to me are my colleagues and my immediate superiors—they will not leave me alone with a problem.

I'm more at peace when I work as an engineer: my shifts are from Monday to Friday, 8:00 to 17:30. Meanwhile, dispatchers have 12-hour shifts, day and night. My current position suits me, and I am not bored, but I am always ready to raise my qualifications.

I spend all my free time with my son.

Artem went to first grade last year. He is a very active boy. In kindergarten, I enrolled him in various hobby groups, and now, being at school, he takes chess lessons and studies English on weekends. He wants to be a miner like his father, but I want him to become a pilot. Time will tell!

In Yakutia, we have 52 days of vacation per year, and on top of that engineers get two more weeks for irregular working hours (there is sometimes a lot of overtime). That adds up to 66 days, so we can spend a long time by the sea, work on our health, and breathe some fresh air. We have visited many places: Crimea, Krasnodar Krai, Moscow, Rostov-on-Don, Novosibirsk. We haven't traveled abroad yet: as soon as I decided to get a travel passport, the pandemic ruined all the plans. But I don't worry too much about it. There's still plenty of time to catch up!

FLASH INTERVIEW

Everybody who works in aviation has at least some superstition. What's yours?

— If you forget something when leaving your house and come back for it, you should look in the mirror and make faces for a minute.

Say you are a passenger. Is it a plane, train or car for you?

— A plane.

What do you like better, North or South?

— South.

Andrian Yakovlev

aircraft technician of B2 category, 29 years old

I was born and lived in Ulakhan—a village in Khangalassky District. I left it to study in Yakutsk, at the YAATUGA Civil Aviation Technical School. Upon graduation, I was supposed to be assigned to Polar Airlines. But at the base where I wanted to work, there was no opening. The technical director of the airline decided to help me and asked if there were any job opportunities at ALROSA Airlines. Fortunately, there were. I sent my resume, then flew to Mirny, filled out the paperwork and started my work. I have been with ALROSA since 2013.

School alone is not enough to become an aircraft technician. You also need to undergo a month-long internship and get clearance to work with certain types of equipment. Initially, I worked in the airplane section, since I was authorized to work on the AN-24 and AN-26. Then I was sent for an internship at an MI-8 site, and I began to work with helicopters. I always wanted that. For some reason, I like helicopters better. Currently, I have clearances for the MI-8, MI-8MTV, MI-171, AN-24 and AN-26.

More than 25 people work at our site, and we only deal with helicopters. The day begins with the shift man and the site supervisor assigning tasks. We service 4–6 helicopters per shift, and sometimes more than that.

I work in shifts: two days from 8:00 to 20:00, then one night from 20:00 to 8:00, then I get a sleep day and a day off. Then again, a night shift, a sleep day and a day off. And then it repeats all over again. These are operational shifts, and we also have a heavy-duty site with 5 workdays a week. If the situation requires it, we sometimes work there during our days off.

There are regulations for helicopter maintenance, and our work is built around them. Every helicopter must be inspected, the bearings must be lubricated, the equipment replaced, and all components checked, serviced, and prepared for flight. And if a helicopter malfunctions, we find the equipment defects and fix them.

At the very beginning, the work is sometimes difficult. Not all the nuances are clear, and you do not always understand what to do or how to do it. We have a very important job, so it can get scary at times. It happened to me as well, but right now I'm seasoned enough and know my MIs to the last screw. Should the company buy some foreign-made tech, it would be interesting to study it and see how it works.

In my free time, I play volleyball as a member of the Mirninsky District's team. Together with them, I regularly participate in competitions, including regional and republic-wide championships of Yakutia.

I am married and have a son. My wife's name is Sardaana, and my son's name is Yan. He is 4 years old now. We spend a lot of time at our summer home and regularly go hunting. We love to spend our vacations in warm climates. Last year for example, we visited Turkey.

FLASH INTERVIEW

Everybody who works in aviation has at least some superstition. What's yours?

— You can't keep needles at work.

Say you are a passenger. Is it a plane, train or car for you?

— A plane.

What do you like better, North or South?

— South, no doubt.

MAMM OTHS

AGAINST GLOBAL WARMING

In the Arctic, works to recreate the mammoth steppes of the late Pleistocene age are underway. Why do we need an ecosystem that came into existence 2.5 million years ago and ended 12,000 years ago? Why did ALROSA decide to become an official partner of this project? And how will the project help stop global warming?

text: OLGA LADYGINA

Time bomb

To clarify the situation, we need to examine some of the natural processes that relate directly to global warming. One of its causes is the high concentration of carbon dioxide, which is referred to as a greenhouse gas. These gases accumulate in the atmosphere and retain some of the solar energy, thus causing the "greenhouse effect." As it turns out, large cities, with their cars and factories, are not the only places where the amount of CO_2 is growing.

"In the late 1980s, I came across an article in a scientific journal which stated that the highest concentration of carbon dioxide in the world was observed in northern Siberia, during winter," says Sergei Zimov, a scientist and the author of the Pleistocene Park idea. "I asked myself: where would the gas come from in winter, when everything is sleeping? And I found the answer: the only possible source was the non-frozen soil, which is a result of the permafrost melting."

Underground biochemical processes are constant: the supply of oxygen allows organic matter to slowly decompose. In dry soils, this produces carbon dioxide, while in waterlogged soils, the result is methane, which is much worse. This is also a greenhouse gas, but is ten times stronger than carbon dioxide.

According to scientific observations, Siberian permafrost has been melting at a tremendous speed in recent decades, saturating the soil with water. Every year, the shores of the Russian Arctic lose an average of two meters of ice cover. Ancient organic matter, previously hidden under the ice, is revealed, beginning to rot and decompose, forming greenhouse gases in the process. As a result, different areas, depending on the specific scenario, generate 10 or even 50 times more carbon than before.

"The faster the permafrost melts, the more greenhouse gases are emitted," points out Sergei Zimov. "If the warming continues at the same speed, then in 20 years the volume of CO_2 emissions from permafrost may be comparable to the combined emissions of all factories, aircraft and vehicles.

"On top of that, methane will also be emitted. It's a climate bomb, and it can only be defused with the help of a so-called mammoth steppe, once Earth's most extensive biome. It spanned from Spain eastward across Eurasia to Canada and from the arctic islands southward to China."

Serengeti on frozen ground

To do this, Sergei Zimov created the Pleistocene Park or, as it is often called, the Northern Serengeti. As an ecologist and senior researcher at the Pacific Institute of Geography of the Far Eastern Branch of the Russian Academy of Sciences (FEB RAS), he meticulously thought through every detail of the project. Since 1980, Zimov has lived in Yakutia and has been in charge of the North-Eastern Scientific Station of the Russian Academy of Sciences in the town of Chersky, located 130 km away from the Arctic Ocean. It is here where, in 1996, he founded the experimental nature preserve.

The scientist's ultimate goal is to recreate rich pastures in place of the swampy forest-tundra. For this, he has a territory of 160 km^2, of which 25 km^2 have already been fenced. This territory has to be populated with various animals, primarily of hooved species. The Yakutian horses were the first to arrive in the park. Over time, elk, reindeer, wisents, plains bison, yaks, sheep, goats and even camels have joined the horses. At the moment, Pleistocene Park is home

to eleven species of large herbivore, numbering about 150 in total.

Paradoxically, not only do they eat herbs, but also help “grow” them. In the fertile northern soil, grasses grow as well as in southern regions, but it is cold here, and the decomposition of dead organic matter is slow.

GRASSES AND GRASSY PLANTS BEGAN TO DOMINATE MANY AREAS OF THE NATURE RESERVE. WE CANNOT SAY THAT WE HAVE ALREADY CREATED A HIGHLY PRODUCTIVE PASTURE ECOSYSTEM, AS THERE IS STILL MUCH TO BE DONE, **BUT POSITIVE CHANGES ARE ALREADY OBVIOUS**

Therefore, nutrients return to the soil only after a few years. But in warm stomachs, organic matter breaks up in a single day. This is how herbivores “speed up” the biocycle. Moss has no roots, and the soil under it is always waterlogged. But herbivores trample the mosses, then grasses, rapidly growing in the manured soil, dry it. The soil begins to accumulate organic matter (grass roots), going deep down. As a result, the ecosystem ceases to emit methane and begins to intensively absorb CO_2.

In addition, plains and meadows are lighter than forests and low-bush tundra. Thanks to that, they reflect a significant part of the solar energy, sending it back, and they stay white 7 months of the year. Scientists have noted that in April and May the snow-covered arctic pastures reflect up to 160 watts per square meter.

This directly affects the temperature of the air, bringing it lower.

During winter, animals continue to “work” on changing the ecological situation in the nature reserve. To survive in the hungry season, they laboriously seek out all the remaining vegetation and eat it, making room for new herbs. The coveted vegetation hides under the snow. In order to get to it, the hooved animals have to constantly plow through it. The snow blanket becomes denser and much thinner, making the earth cool deeper. As a result, the soil and permafrost temperatures drop by two to four degrees, which is enough to stop its melting.

Here comes a mammoth

Pleistocene Park has existed for more than twenty years. This period has been enough for certain changes to already become noticeable.

“During the experiment, the influence of animals on the vegetation inside the park is visible,” notes Nikita Zimov, the other founder of the park, “Grasses and grassy plants have begun to dominate many areas of the nature reserve. We cannot say that we have already created a highly productive pasture ecosystem, as there is still much to be done, but positive changes are already obvious. An extremely important stage of our project is the introduction of numerous animals to the park. One of the priority short-term projects is to increase the number of musk oxen by transporting them from other places. We are very thankful to ALROSA for their support, which will help us to succeed.”

Despite the existing variety of animals in the Northern Serengeti, one very important species is still missing. We’re not talking about the musk ox, but about mammoths. It is after them that the steppe which is being restored in Pleistocene Park is named. And it’s not an exaggeration, as the animal may actually enrich the biodiversity of the nature

reserve, since an American company named Colossal, engaged in cloning the woolly mammoth, has become a partner of the project. Harvard professor George Church is working on extracting individual genes of the hairy giants from their DNA in order to “hook” them into the genome of modern elephants. If his experiments succeed, Pleistocene Park will welcome the Woolly Mammoth.

The dream that woolly mammoths will begin to roam across the nature reserve has a chance to come true. These animals played an important role in the formation of the prehistoric steppes. “A mammoth is a useful animal,” Sergey Zimov explains. “It provided an entire ecosystem with water by breaking ice on the lakes. As a result, other animals could drink it. During snowy winters, small animals often followed mammoths and picked up the remnants of their food, since mammoths could break any snow. In fact, a mammoth is not the only animal that could be useful in our park, but any elephant that can survive our climate. If Indian elephant DNA could be edited by adding genes for dense hair and thick fat for withstanding cold, that could easily 'work' for us.”

While scientists are working to recreate the “fur-coated elephants,” the park’s development goes on as usual. Carbon is transferred from the atmosphere to the soil, and this process occurs at a fairly high rate. The root systems in high latitude grasslands can accumulate carbon very quickly. They consume it five to ten times faster than forest areas. Carbon in the soil significantly increases its fertility, speeding up the biocycle.

“If the Zimovs' hypothesis is confirmed, humanity will receive a new, effective instrument for combating global warming,” believes Mikhail Dubovichev, head of the ALROSA's Innovation and Technology Center. “It is important to note that this project will simultaneously work in two directions: it will help to absorb CO_2, and it will prevent the release of vast amounts of carbon, stored in permafrost, into the atmosphere. According to various estimates, we are talking about more than a trillion tons of carbon.”

To achieve such a result, the park has to continue to host more animals. If everything goes as planned, there will be many more of them in the Arctic. “To influence the climate, we need a population of at least 30 million large animals,” says Sergei Zimov. “Today, Siberia has about two million. However, the goal can be reached in 20–30 years, large animals can increase their numbers a hundredfold.”

Now, ALROSA is planning to help the park to bring more animals and accommodate new animals. Another work area is independent scientific research. If the effects that the Pleistocene Park’s ecosystem has on climate prove to be impressive, the experience may be implemented in other permafrost territories, for example, in the Living Diamonds park (located near the city Mirny, the diamond capital of Russia), also supported by the company.

ALROSA FESTIVITIES

COME BACK FROM SELF-ISOLATION

ALROSA has resumed the “ALROSA Vibes Sports and Music festival” after almost two years of silence due to the pandemic. It took place in the last weeks of the year and became a New Year's gift for the residents of Mirny, Aikhal and Udachny.

It is worth reminding that the rough diamond mining company regularly brings sports, music, dance and theater stars to the “diamond” communities for master classes, sports lessons, friendly matches and concerts. This admission free program is designed for both adults and children. Before the pandemic, the number of participants in each wave of the festival reached several thousands.

Unfortunately, coronavirus restrictions have interrupted this sports festival. Last year, the festival has been postponed many times due to the tense situation in the world caused by the pandemic. But the high percentage of vaccinated people in local communities and in particular, among ALROSA employees, allowed the holding of the “ALROSA Vibes” event at the end of the year, subject to compliance with anti-virus measures.

The festival in 2021 opened with a basketball show in the diamond capital of Russia—Mirny.

Together with ALROSA, this event was organized by one of the strongest basketball leagues in Europe—the VTB United League. The “All-Stars of the Diamond Region” match set a team of ALROSA workers from Mirny—“Capulet”—against a team of workers from Aikhal and Udachny—“Montague”—on the basketball court. This evening combined a dynamic sports game with a musical, a dramatic Shakespearean story with jokes, and celebration. At the end of the match, the most valuable player, MVP, and the leader in the best three-point shots were awarded. The match-musical was broadcast live on Youtube.

Then basketball was replaced by martial arts. The coaches and instructors for the residents of the diamond province were three-time World Cup winner, two-time world and European Sambo champion Alexander Nesterov, World Championship winner, two-time European Kyokushin champion Omar Magomedov, multiple Russian champion in army hand-to-hand combat Andrey Chabanyuk. The athletes served as coaches and mentors for the residents of the Diamond Province. They flew to the North from Moscow to hold master classes and prize tournaments in Mirny, Aikhal and Udachny.

TATYANA BERLIZOVA
Excellent orchestration!! Basketball and Shakespeare!!! Extraordinary and original theatrical action!!! Vivid performance, real fire! It's so nice to see such a young and enthusiastic crowd!

@tatushalisa FOLLOW ...

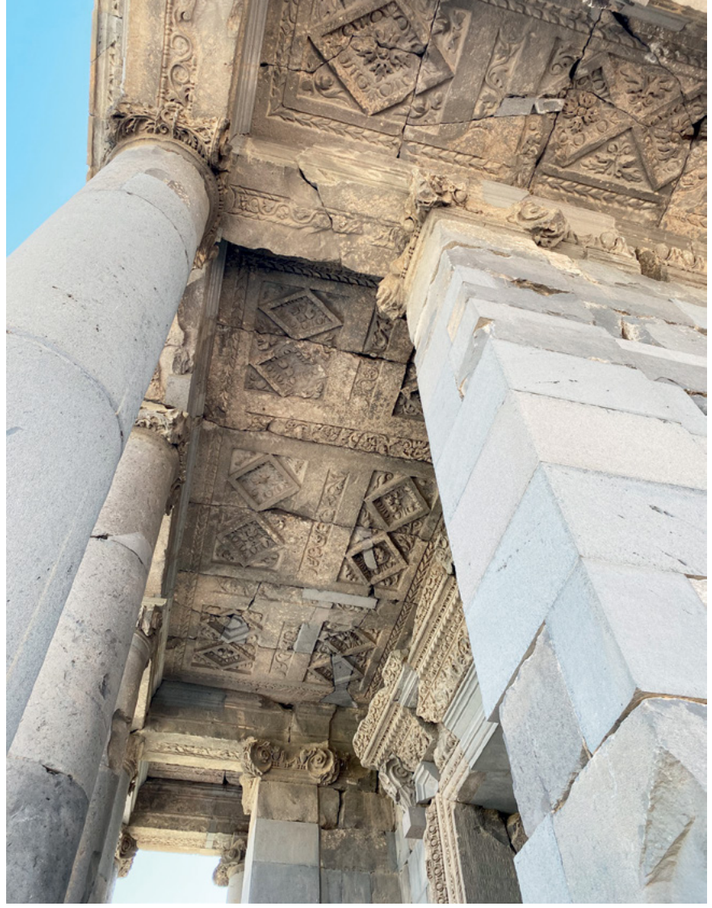
11.12.2021.
A flood of emotions, impressions, and pleasure)))) #dkalmaz #thealrosamood

ARMENIA:
THE LORD OF THE RINGS AND EARRINGS

For those who are going to Armenia, I advise adding to the traditional travel ingredients of this country, such as its breathtaking views, tasty traditional food and ancient monasteries, just one more thing: the local jewelry.

text: ELENA ESAULOVA,
creator of the E2J jewelry brand, collection

View of Ararat from The Arch of Charents



The Temple of Garni

Symphony of the Stones

Stones and mountains

After meeting the sunrise with a view of Mount Ararat, head towards Arch of Charents. From there, a winding road will lead you to the Temple of Garni, dedicated to the God of the Sun. The stone construction has stood on this site for almost 2,000 years.

The temple offers an unforgettable view of the gorge, its hexagonal basalt columns reminiscent of organ pipes. It is no wonder this place is called the Symphony of Stones. Passing it, you'll find the inaccessible and impressive Geghard monastery complex. Its name is translated as "spear." This UNESCO heritage site is especially recommended for those who would like to enjoy an a cappella chorus.

Geghard medieval monastery is listed as a UNESCO World Heritage Site

Photo: Victor Dubinkin

Geghard medieval monastery

And those who seek beautiful sunsets should hit the road in the opposite direction from Yerevan. I advise you to stop for lunch at the Edem family restaurant, located in a cave on the way to the Noravank monastery complex, one of the most beautiful medieval monuments in Armenia. According to one of the local jewelers, angels fly here at sunset to admire the beauty of God's and humans' creation. There, you can stand in silence and the shadows of doves getting bigger and bigger, resembling angelic fluttering. Then, it's time to return to the city lights, as they dance in the night to the elegy of duduk, a reed made from apricot wood.

Noravank monastery

The princess's chest. The work of Arman Nur

Arman Nur

Yerevan: the jewels of courtyards and streets

In the morning, I suggest to visit the Yerevan Vernissage, located not far from the central square. Here, you can meet modern artisans who work with niello silver, brass and ornamental stones. If you are a fan of antiques, among the myriads art pieces, you can find some very interesting items.

And if you prefer modern craftsmen to traditional products, you will definitely enjoy one of the picturesque courtyards at the Nur Art Gallery, the workshop of the famous Armenian jeweler, sculptor and painter Nur Arman. He has created jewelry for Queen Elizabeth II of England, Maya Plisetskaya, Cher, Madeleine Albright and other legendary women. The interiors of the workshop leave no choice but to talk about beauty. When a master showcases his unusual conceptual works, adding detailed stories about them, you forget about time. Most likely, you'll come around well after sunset.

Rings made by Arman Nur

Picture from the catalogue of Arman Nur

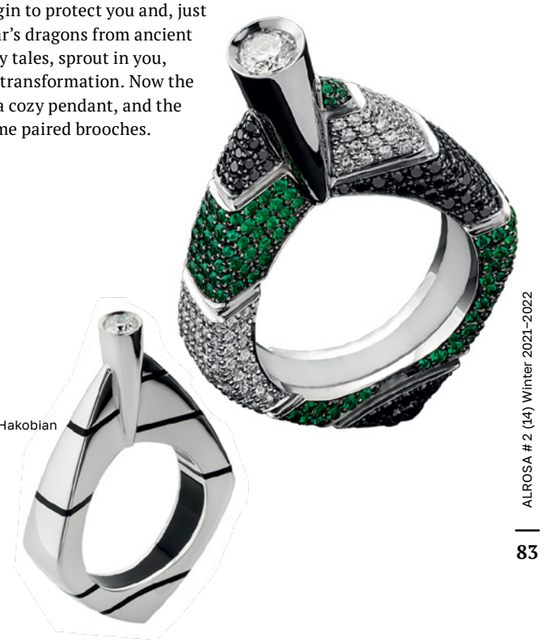
Shavarsh Hakobian Jewelry Gallery

If you still have any strength, you can visit one of the jazz clubs in the center of Yerevan and taste brandy, known far beyond the borders of Armenia, to the rhythm of music.

For those who prefer elegance and jewelry precision to conceptual art, Shavarsh Hakobian's Jewelry (24 Khorenatsi Street, 91–18) is

Shavarsh Hakobian Jewelry Gallery

a must-see. His products hug the hand with a confidence that does not tolerate any other jewelry next to them. They are self-contained and need no additions. And then, once you fall in love with them, they begin to protect you and, just like Vishapakar's dragons from ancient Armenian fairy tales, sprout in you, showing their transformation. Now the ring becomes a cozy pendant, and the earrings become paired brooches.



Rings by Shavarsh Hakobian

Another place, important to both the country and any individual, is the Sergei Parajanov Museum. In addition to his films, full of deep symbolism and picturesque shots, I was fascinated by the costumes that he literally collected from scraps of fabric and stories. Then there are the decorations. While I was here, a strange comparison was nagging at my brain. Parajanov was like a child, ingenious and restless, who simply had to create and share beauty. The museum displays not only numerous collages, paintings, and miniatures, but also documentaries, which sometimes show the maestro's life from an unusual angle.

Sergei Parajanov Museum

I also recommend a visit to the historic building with the Tufenkian sign (48 Hanrapetutyan St.). Its owner hosts a hotel, a national cuisine restaurant, a traditional carpet workshop and a jewelry boutique under one roof. You won't find any big names here, but there are instead traditional cross necklaces, pendants, ornate hand-woven chains, massive necklaces and gold bracelets with complex, bright enamels.

Tufenkian show room

Local jewel seller

Then you should stop by the Artyom's Jewelry workshop, where you can get acquainted with the unique author's works and things of a bigger scale.

Gafri is another jewelry house that uses traditional Armenian motives. Many pieces are based on ornaments from khachkars, sacred carved stones that are found in religious buildings. A perfect example would be the Etchmiadzin Cathedral (IV century), included in the UNESCO World Heritage List. As the legend says, it was built on "the place where the Only-begotten Son descended." The complex is, without a doubt, magnificent, but we are also interested in the smaller yet very important Treasury Museum, where sacred relics and the clothes of clergymen are preserved. Here, it becomes evident how well the masters, whose works we have already examined, know the history and traditions of their country. How delicately they interpret ancient Armenian motifs in their workmanship.

Etchmiadzin Cathedral

Jewels at the Etehmiadzin Cathedral

And still, we have not yet seen the Zvartnots Cathedral, "the cathedral of angels," we haven't taken a ride to the overpowering Lake Sevan, haven't walked up to the Tatev Monastery, haven't wandered the streets of the old city of Dilijan, haven't travelled along the serpentines to the Jermuk spring... I am sure that there are a lot of Armenian craftsmen whom we haven't yet discovered. And one can only wonder how many amazing things Armenia might show to true treasure seekers.

BEHIND THE CURTAIN OF THE BOLSHOI THEATRE *with Van Cleef & Arpels*

text:
ANASTASIYA KORN

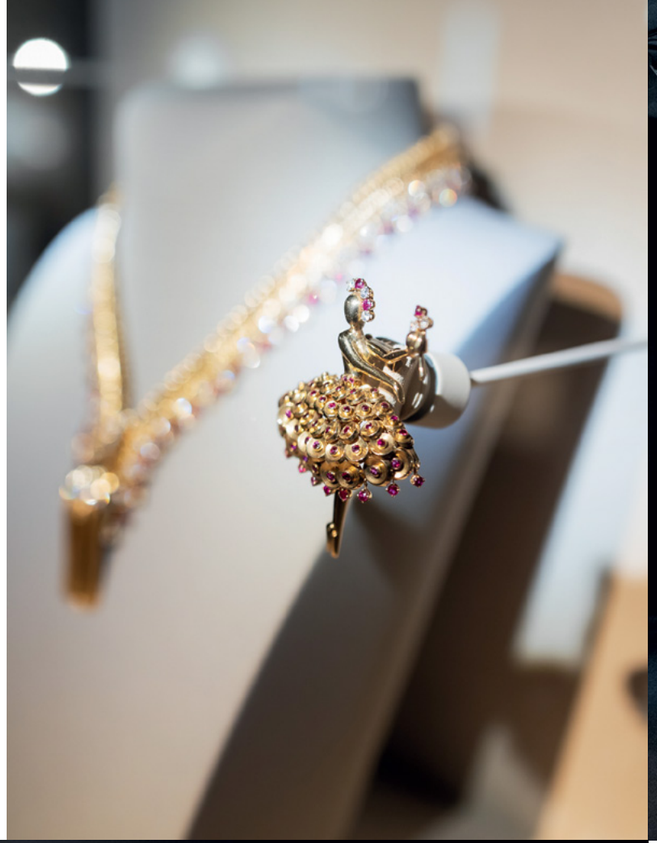
The “En Coulisses” project combined the exhibition of 40 museum pieces devoted to traditional choreography, an exposition from ballet photographer Mikhail Loginov, several workshops by the Maison’s jewelers, and some events in which experts of L’ECOLE, the Parisian School of Jewelry Arts, participated. The main driver of the exhibition in Petrovsky Passage was the long-lasting partnership between the Van Cleef & Arpels Maison and the Bolshoi Theatre.

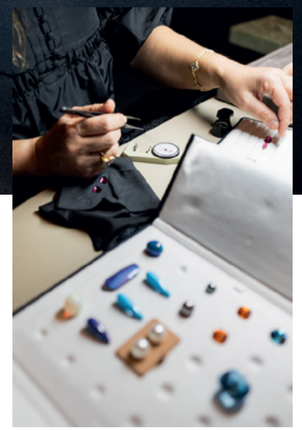
In 2012, the brand acted as a partner in a new performance of “Jewels” and even provided sketches and other artifacts that were used in the original performance staged by George Balanchin. A year later, the brand introduced its new Balet Precieus collection, which included five pieces dedicated to ballet performances, namely “Swan Lake”, “La Bayadere”, “The Nutcracker”, “The Golden Fish”, and “The Rite of Spring”. Van Cleef & Arpels sponsored a bold performance of “Nureyev” by Kirill Serebrennikov in 2017, and the brand has been an official partner of the Bolshoi Theatre since 2019.
On the eve of the opening of the exhibition in Petrovsky Passage, Van Cleef & Arpels presented the premiere of the ballet-opera “Flore et Zephire” at the Pashkov House, where audiences first saw the play in 1817, as the Bolshoi Theatre ballet company was temporarily housed there after the fire of 1812. The play was staged by the artists and principals of the Bolshoi Theatre: Darya Khokhlova, Artyom Ovcharenko, Anna Tikhomirova, Kristina Kretova, Elizaveta Kokoreva and Igor Tsvirko, and also with the participation of invited opera soloists Aida Garifullina and Yaroslav Abaimov. A film of the ballet's premiere performance is the part of the “En Coulisses” cultural program and is shown at the exhibition daily.

The entire Paris team of Van Cleef & Arpels arrived in Moscow to participate in the grand opening of the exhibition, led by CEO Nicolas Bos.

"The purpose of our exhibition is not to put on a show or impress anybody with the work we have done, but to immerse you in the mysterious and attractive world of our jewelers, who create dreams and beauty every day," Bos explained during the opening of the program.

The retrospective exhibition included 40 well-known pieces and rare archival documents from the Maison's private collection, which the Maison's heirs have safeguarded for more than 150 years. Visitors of





the exposition were met by specially trained guides, who explained the history of each item in detail. In the adjacent hall, visitors could become personally acquainted with the masters of Van Cleef & Arpels—designers, jewelers, and gemologists—and see the painstaking process of their work with their own eyes.

The name of the exhibition was perfectly apt—where else could one see precious stones becoming so brilliant in the hands of professionals? At first glance, it would seem that polishers use rather simple tools, such as brushes, threads, ribbons and abrasive compounds. The secret of the fantastic sparkle is in the polisher's movements, which have been perfectly honed through years of practice.

The pieces attain their precious forms in the hands of the jeweler, who is concerned not only with elegant appearance, but also with extreme durability. That is the real handicraft of Van Cleef & Arpels.

The history of the Maison began in Paris. In 1864, Leon Arpels left Ghent for the capital of France, where he opened a small fashion jewelry store. In 1867, he was joined by Salomon Van Cleef, an expert gem cutter from

Amsterdam. Their sons, Alfred Van Cleef and Charles Arpels, later established the legendary Van Cleef & Arpels jewelry brand. The marriage of Alfred to Charles' sister Estelle only made their family ties stronger. As a result, all of the Arpels brothers joined the company. Charles managed the finances, Julien selected precious stones and made business contacts outside France, and Louis, the youngest brother, focused on sales. The Maison won international recognition. The diva Maria Callas, American first lady Jacqueline Kennedy, and actresses such as Greta Garbo, Marlene Dietrich, Elizabeth Taylor, and Grace Kelly have been among its devotees. Splendid brooches in the shape of ballerinas and flowers and fans made of the thinnest gold lace are among the exhibits of the "En Coulisses" exhibition. One of these—a double sapphire and diamond brooch in the shape of a fan—was worn by Wallis Simpson, the Duchess of Windsor, during her wedding ceremony. It was for her sake that King Edward VIII abdicated the throne.

Van Cleef & Arpels' strong ties with the world of ballet go back to 1920s Paris. Louis Arpels, one of the founders and a passionate lover of ballet, took his nephew Claude to the Opera Gamier, which was just next to the boutique on the Vendome square. He created his precious ballerinas based on the photos and portraits of well-known dancers. It is no coincidence that real ballet costumes created for Bolshoi Theatre artists by designer Yelena Zaytseva could be seen at the "En Coulisses" exhibition. What do such items have in common with the jeweler's art? They are united by limitless attention to detail and very painstaking and masterful work. Some works of ballet photographer Mikhail Loginov were also among the exhibits. The subjects of his pictures—well-known artists and famous choreographers share a common feature: the pursuit of perfection.

The first ballerina brooches appeared in the brand's collections in the early 1940s, and soon become a signature part of the Maison's jewelry art history. The ballerinas, light as air, and the beauty of their dresses immediately charmed clients. The masters strove to depict not only luxury in their items, but the airiness and lightness of fabric. Ballet tutus made of engraved or perforated gold and decorated with precious stones cannot help but impress. This kind of work requires an exceptionally skilled jeweler, and attention to trends as well. Trim and ribbon motifs were in fashion at the time, and and the ballerinas' dresses were decorated with golden nets and sequins. The exhibition also features more abstract items with moving parts, such as Reservo (1957), a round brooch with diamonds, Fun (1959), a brooch, and Drape (1960), earrings that call to mind ballet dresses and tutus spinning in the dance.

Fashion has always been a key source of inspiration for the craftsmen of Van Cleef & Arpels. Thus, a neat neck choker, a precious ribbon and the famous transformable Zip necklace, reminiscent of a zipper, have appeared in the Maison's collection (the first of which was developed by the Maison's Artistic Director Renee Puissant following a suggestion from the Duchess of Windsor).

In addition to ballet and fashion, nature has been a key subject in the jewelry stories of Van Cleef & Arpels. In 1943, the Lace floral line was released. It included a ring and earrings imitating fabric and a bouquet of flowers made of diamonds, sapphires and rubies. Blossoming flowers later became a characteristic element of Van Cleef & Arpels' design. The masters have used the element in various ways: from the ballet tutus decorated with flowers to the gorgeous pieces of the Hawaii collection.

Fantastic

HANDIWORKS

20 YEARS HAVE PASSED SINCE THE FIRST FILM OF THE “HARRY POTTER” SAGA WAS SCREENED. A SPECIAL EPISODE OF THE FRANCHISE PREMIERED ON JANUARY 1 AS A NEW YEAR'S GIFT FOR EVERY FAN OF THE UNIVERSE, CREATED BY BRITISH WRITER J.K. ROWLING. AFTER A CLOSER LOOK AT JEWELRY HOUSES' COLLECTIONS, WE'VE COME TO THE CONCLUSION THAT SOME OF THEIR THEME CHARACTERS COULD WELL BE PART OF THAT MAGICAL WORLD. SNAKES, GRYPHONS, DRAGONS, LIONS AND MIRACULOUS BIRDS—ALL OF THEM HAVE BEEN ENDOWED WITH SUPERNATURAL POWERS AND ARE TALISMANIC FOR THEIR OWNERS.

text: OLGA ANTIPOVA

J.K. Rowling created the magical world of Harry Potter, an English boy, who attends Hogwarts School of Witchcraft and Wizardry and fights evil forces together with his friends. One of the courses at Hogwarts is called “Care of Magical Creatures”, based on the in-universe textbook *Fantastic Beasts and Where to Find Them*. In our universe, this book was written by J.K. Rowling herself under the pseudonym Newt Scamander. This is a prequel to the Harry Potter saga, and a separate series of films directed by David Yates has been based on it.

The magical animals and birds have been designed with such a detailed and touching approach, that one would certainly want to materialise them.

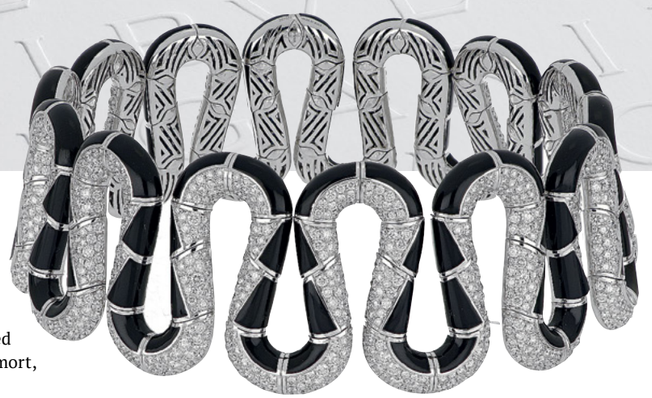
And it has become possible thanks to such jewelry brands as BVLGARI, ALROSA DIAMONDS, CHANEL, PIAGET, VAN CLEEF & ARPELS, which also have passion for these fantastic creatures.

In this story, we've collected the magnificent characters from these Brands' collections, which have cleverly picked up the mythological theme.

BVLGARI

[SERPENTI VIPER]

“Persistent transformation, breathtaking metamorphosis,” comments the Roman Jewelry House on its own Serpenti Viper Collection, which comprises necklaces, pendants, earrings and even watches with a snake as the main symbol—the embodiment of wisdom, regal deliberateness and unexpected, sometimes dangerous transformation.



The image is comparable to the giant snake named Nagini, that assisted its menacing creator, Voldemort, the dark wizard from the universe created by J.K. Rowling. Nagini’s story is also about transformation—originally, she was a female human, a featured attraction in a circus. The flexible body of this snake could twist into complex loops in-and-out, or straighten to throw itself and hit its victim in a split second. Occamies, winged creatures with serpentine bodies (the magizoologist Scamander was carrying them in his suitcase), were endowed with the similar abilities. Occamies could transform the size of their bodies, and their eggshells were covered with the finest silver.

The Serpenti Viper Collection has also been undergoing transformation for several decades. The symbol of a snake has been used by Bvlgari since the late 1940s, gradually changing from animalistic versions to geometry and stylization. The flexible modular construction with scales and a scattering of diamonds on three colours of gold is a big draw of the new “serpent” (snake in Italian) interpretation.

VAN CLEEF & ARPELS

[L'ARCHE DE NO]

In 2016, the Van Cleef Jewelry Maison House launched a collection dedicated to the theme of saving the animals on Noah's Ark. In addition to the love parade of birds and animals, the Brand designed three mythical creatures: Pegasus, Unicorn and Phoenix. They have been presented without pairs in the collection, because (legend has it) they only existed in antediluvian times and didn't make it onto the Ark (what a pity!).

In *Harry Potter* the blood of a unicorn was considered magical, and it could save a person, who was an inch from death. The Phoenix has long been known for its ability to reincarnate. There was also a phoenix in the saga. According to Scamander's book, only the most courageous and noble wizards could communicate with it.

CHANEL

[ESCALE VENISE]

Mademoiselle "Coco" Chanel, the queen of the fashion industry, was born on August 19, under the Zodiac sign of Leo. She surrounded herself with images of lions, and it has become the emblem of the House of Chanel. The king of beasts has also been a symbol of Venice, the heraldic emblem of which is the winged Lion of St. Mark. It plays the leading role in one of the sets of the Escale a Venice (Stop in Venice) high-jewelry Collection by Chanel. It comprises 70 jewelry creations, including limited edition brooches and watches (five pieces each).

The character of the lion has been written into the mythology of different countries, embodying nobility and courage. In the magical world of *Harry Potter*, the lion has become the symbol of Gryffindor House, with its students known for their bravery.

There are other fantastic beasts among the characters of the saga, including the Manticore, with the head of a man, the body of a lion, and the tail of a scorpion, and the Graphorn, with a humped back and powerful legs. Newt Scamander claimed that the world's last pair of Graphorns lived in his magic suitcase. Graphorns are so powerful, and their skin is so impenetrable, that they can repel spells.

ALROSA DIAMONDS

[IMPERIUM]

The gem of the Imperium Collection is a brooch depicting the famous winged lions that have been guarding the Bank Bridge in St. Petersburg. It is noteworthy that locals and tourists believe in the magical powers of these creatures and ask them for financial wellbeing, successful career and love. There were plenty of Russian and foreign coins and notes with wishes found inside the hollow cast-iron lions during the last restoration process.

The Harry Potter universe also features creatures with wings and the bodies of lions, but they're more similar to gryphons. Fantastic bird-like statues of those guarding the corridors of Hogwarts resemble another mythical creature from *Fantastic Beasts*—the stately Thunderbird with a head that reminds of an eagle from the side, and huge wings, so powerful that they can create storms.

Another creature of the kind is the proud Hippogriff named Buckbeak (something between a gryphon and a horse), that Harry Potter managed to ride for a flight in his very first Care of Magical Creatures lesson. The in-saga belief is that when approaching a hippogriff, one needs to look straight into its eyes, without a single blink.

JAEGER-LECOULTRE & PIAGET [DRAGON & PHOENIX]

There are very few fairytales without dragons in the world of Harry Potter. Piaget Jewelry House has used the image of this mythical creature for its Altiplano Tourbillon Dragon Pocketwatch, which is part of the Brand's limited Dragon & Phoenix Collection. It is a pocket watch with an ultrathin mechanical tourbillon movement. The dial was decorated with the use of the Grand Feu method, which allows cloisonne enamel to retain its beauty and durability for centuries.

The piece was launched to honor the Year of the Dragon, according to the Chinese zodiac. The cloisonne enamel, with its several shades of gray, is exclusive, and the creator of this original design is the world-renowned enameller, Anita Porsche.

Obviously, dragons were also present in J.K. Rowling's universe. There are ten breeds of dragon, according to the book by the magicoologist Newt Scamander. None of them could be tamed, and only specially trained wizards could work with them. Only one of the dragon species in the saga comes from the East, it's called the Chinese Fireball. By the way, the Hogwarts school motto is "Never tickle a sleeping dragon."


ALROSA