

Comet 67P Through the Lens of Art

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My proposal is to share my artistic exploration of a comet through the bodily senses, while finding inspiration in scientific data. I will present my artwork as a slideshow, showcasing: large scale paintings, ceramic sculptures, music and interactive augmented reality.

The Rosetta mission of the European Space Agency (ESA) to comet 67P/ Churyumov-Gerasimenko is remarkable. The scientific investigation of the comet's composition, atmosphere, dust, vapor, surface and internal structure are crucial to help researchers understand the origin of the solar system and our own planet.

Sight: Paintings

Rosetta mission discovered that the water on the comet is different from the water on Earth; as measured with the ROSINA-DFMS instrument on Rosetta, water on 67P contains approximately 3 times more hydrogendeuterium oxide – HDO, than found in Earth's oceans. In the art studio I re-create water that is close in composition to the water on the comet, by concentrating the level of HDO. With this water I paint large scale watermedia paintings, based on the photographs by Rosetta (OSIRIS, Nav. Cam.).

Touch: Sculptures

While exploring the comet's three-dimensional form, I focus more deeply on the composition of the comet. Stoneware clay and my choice of a glaze both include iron oxide, a common constituent of meteorites and comets.

Hearing: Music

An audio piece "A Singing Comet", by Manuel Senfft, based on the Rosetta Plasma Consortium data, inspired me to make a musical piece. In collaboration with clarinetist Lee Mottram (Wales) and composer Takuto Fukuda (Japan) we created an electroacoustic composition in which we tell the story of comets visiting our Solar System, repeating their cycle, curving around the sun and releasing water, carrying away dust to form their tails.

Smell

In collaboration with The Open University, UK, postcards with a smell of the comet were created, introducing the chemical components of the comet. The smell was recreated by combining several molecules that were found in the comet's coma with the ROSINA instrument: in particular, hydrogen cyanide, ammonia and hydrogen sulphide.

Interactive: Augmented Reality (AR)

Inspired by spectroscopic data from OSIRIS, I introduce AR to reveal a "hidden" layer. I am highlighting that some scientific information can only be viewed by using special instruments, in this case - instruments on board the Rosetta spacecraft. Viewers can see a virtual layer on top of my paintings using a readily available instrument - ones cellphone. RGB colors, of a particular wavelength, will be introduced to the generally monochromatic paintings.

Through my art I study the relationship between humans and the Universe, understanding the connection, the influence and the effect they have on each other. ESA's example of human scientists ambitiously exploring a distant cosmic object empowers me to create and share my personal exploration. This is the way I would like to share comet 67P with the world. I invite you to look through an artist's eyes and see science with renewed beauty and wonder.

To view the artwork: <http://www.ekaterina-smirnova.com/67p/>
<http://www.ekaterina-smirnova.com/67p-sculptures/>