



## Interview with Svetlana Gerasimenko – 'Beginner's luck'

11 November 2014

In 1969, Svetlana Gerasimenko and Klim Churyumov discovered the comet that the Philae lander will descend to on 12 November 2014. Controlled and operated from the Lander Control Center (LCC) at the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR), this will be the first ever landing on a comet. In this interview, Svetlana Gerasimenko, who will follow the landing at DLR, confesses that the discovery of the comet was a stroke of luck and suggests that the comet will certainly provide important scientific information.

*This interview was conducted by Manuela Braun.*

**You will witness the landing on Comet 67P/Churyumov-Gerasimenko at the DLR LCC. Will this moment have a special importance, because the target is 'your' comet?**

I was at the Kourou Space Centre during the Rosetta launch and have closely followed everything relevant to Rosetta for the past 10 years. I would certainly like to see the lander arriving at the comet nucleus. I am worried and pray for a successful outcome because I consider this comet as something that is close to and related to me.

**How did you discover the comet?**

In 1968 I graduated from Kiev University and immediately enrolled in the doctoral programme under S. K. Vsekhsvyatskiy. By then, Klim Ivanovich Churyumov had already been working in the Department of Astronomy of our university for several years. In September 1969 we both flew to Almaty for an expedition that was led by Klim.

In Almaty, I conducted observations using the 50-centimetre Maksutov Telescope at the Institute of Astrophysics of the Kazakh Soviet Socialist Republic Academy of Sciences. As the saying goes, beginners are lucky. On the night of 11 to 12 September, I observed several comets, including Comet 32P/Comas Solà, while Klim conducted observations in the mountains using a Schmidt camera.

Upon completion of the observations, I started developing the photographic plates. Unfortunately, one plate with Comet 32P/Comas Solà had a minor defect – a small underdeveloped spot in the centre. I was very upset, and my first reaction was to discard this plate. However, something kept me from doing this. A comet, which I saw and assumed to be 32P/Comas Solà, was visible at this more pale background, close to the centre. Thus, the plate was retained. And I continued my work on the comet observation programme.

**When did you realise that it was a previously unknown comet?**

Upon our return to Kiev in October, both Klim Ivanovich Churyumov and I began preparing plates for measurements. It turned out that an object, which was visible on one plate where we expected to see 32P/Comas Solà, was located approximately two or three degrees away from its ephemeris location. This was impossible – we started looking carefully at the entire area and found 32P/Comas Solà, which was slightly less visible than the other comet, at its nominal location. We quickly began reviewing all observation materials for 32P/Comas Solà and found the same object on four other plates, taken on 9 and 21 September. We immediately took measurements from all the plates and sent a cable to the astronomer Brian Marsden with the coordinates of this object. Soon, we received a reply from Marsden. He indicated that this was a new comet and calculated six options for its orbit, as the observation data was insufficient.

I immediately flew to Almaty for further observations. On the first night of observation, I took plates for each of the six options and found the comet on one of them. All my Almaty friends were happy and congratulated me.

Then, Marsden calculated the orbit and sent ephemerides to various observatories. It turned out that it was found in reverse images taken back in August, i.e., a month before we observed it. However, the comet had already been given its name.

#### **Do other celestial bodies bear your name?**

Nikolai Stepanovich Chernykh, a prominent astronomer who discovered asteroid 3945 (1982 PL), named it Gerasimenko after me.

#### **When and how did you learn that Comet 67P/Churyumov-Gerasimenko was selected as the target for the Rosetta mission and thus the first comet that a lander will touch down on?**

I learned it in spring 2003 from the Internet, that our comet was selected as the target of the Rosetta mission.

#### **A total of 10 instruments are carried on the Philae lander; shortly after the lander has arrived, the LCC will start the first scientific studies. For what questions about the comet would you most like to know answers?**

I would like to know what the thickness of the uppermost layer of the nucleus is and what is located beneath this layer.

#### **The comet has already surprised us with its unusual shape – do you think that he still holds surprises for science?**

I believe that the comet's surprises are not limited to the exceptional shape of its nucleus, and that it will present us more insights that are no less fascinating.

#### **The mission**

Rosetta is a European Space Agency mission with contributions from its Member States and NASA. Rosetta's Philae lander has been contributed by a consortium led by DLR, the Max Planck Institute for Solar System Research (Max-Planck-Institut für Sonnensystemforschung; MPS), the French space agency, CNES (Centre National d'Études Spatiales), and the Italian space agency, ASI (Agenzia Spaziale Italiana).

More videos about the Rosetta mission can be found [here](#).

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**Svetlana Gerasimenko and Klim Churyumov**



Svetlana Gerasimenko and Klim Churyumov examine the photographic plates on which the newly discovered comet is visible.

Credit: Private.

**Svetlana Gerasimenko**



Svetlana Gerasimenko lives and works in Dushanbe, Tajikistan.

Credit: Private.

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