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# → IMPRESSIONS OFROSETTA'S LEGACY

Public contributions to ESA's campaign on the impact and meaning of the Rosetta Mission

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This e-book is a collection of public contributions to celebrate the impact of the European Space Agency's Rosetta mission (2004-2016). The contributions were shared on the Rosetta Legacy tumblr in September–October 2016: <a href="http://rosetta-legacy.tumblr.com">http://rosetta-legacy.tumblr.com</a>

The purpose of this publication is to keep a long-lasting record of the mission's impact on a variety of public audiences. By sharing their contributions, participants certified that their submission is their original work and that they have the permission of anyone identifiably shown/heard in the submission. When not otherwise specified, the text/image/video/audio files are property of the participant who shared them.

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From the moment we began working on the Rosetta mission, we understood that we were part of something special that had the ingredients to achieve much more than its original scientific goals. The mission itself was driven by science but it has gone on to be something much bigger, and in particular it has inspired people from all walks of life and of all ages, not only to engage in science and technology, but simply to get up and do something.

This is the most important legacy of Rosetta

– inspiration. This collection demonstrates this and we hope, like the Rosetta science, that it continues!

Patrick Martin, ESA Rosetta mission manager Matthew Taylor, ESA Rosetta project scientist

# → TO CATCH A COMET, TO DROP A LANDER ON ITS SURFACE AND TO LIVE WITH IT FOR OVER TWO YEARS.

It sounds like the stuff of dreams, but in fact this was the mission of ESA's Rosetta spacecraft. Launched in 2004 on a ten-year journey, Rosetta became the first space mission to perform and successfully complete these historic endeavours at the now iconic Comet 67P/Churyumov—Gerasimenko, collecting — together with the lander Philae — unique images and data to investigate the past history of our solar system.

Technical challenges, fascinating science objectives and a thrilling journey of exploration: the mission had the perfect recipe to instil wonder and engage the public at large.

From before it woke up in January 2014 until it touched down on the comet in September 2016, I and my colleagues from ESA's science communication team had the exciting task of telling Rosetta's compelling story, from the operational milestones to the scientific harvest. Being at the interface between the mission experts and the worldwide public, we also had the pleasure to observe the ripples of engagement that news, images and the story of Rosetta's and Philae's adventures have generated across the globe, from young children to students of all subjects, from artists and creative individuals to veteran as well as brand new space enthusiasts.

To get a closer look at the inspiration triggered by Rosetta beyond the immediate domains of science and engineering, we launched the Rosetta Legacy campaign on tumblr, inviting members of the public to submit stories, images, videos, creations and experiences to convey what the mission had meant to them. The campaign ran from 6 September to 7 October 2016, around the last month of Rosetta's operations at the comet.

And while we knew that the mission's impact on the public had been significant, we were still overwhelmed and humbled by the creativity, ingenuity and authenticity of the over 230 contributions that were submitted to the campaign, revealing how deeply the mission and its narrative had connected with people.

This publication presents a collection of these outstanding contributions and provides a taste of Rosetta's legacy for fellow science communicators, scientists and engineers, educators, space enthusiasts – anyone who was fascinated by the mission.

We wish to thank everyone who shared with us what the mission meant to them, and all followers of Rosetta and Philae worldwide. It is also thanks to you that the legacy of this extraordinary mission will live on forever.

#### Claudia Mignone

Science writer for ESA Coordinator of the Rosetta Legacy campaign

Rosetta was an ESA mission with contributions from its member states and NASA. Rosetta's Philae lander was provided by a consortium led by DLR, MPS, CNES and ASI. Rosetta was the first mission in history to rendezvous with a comet and escort

it as they orbited the Sun together. It was also the first to deploy a lander to a comet's surface, and later end its mission in a controlled impact on the comet.

More about Rosetta:

http://rosetta.esa.int/ and http://sci.esa.int/rosetta

The Rosetta legacy collection can be found online at:

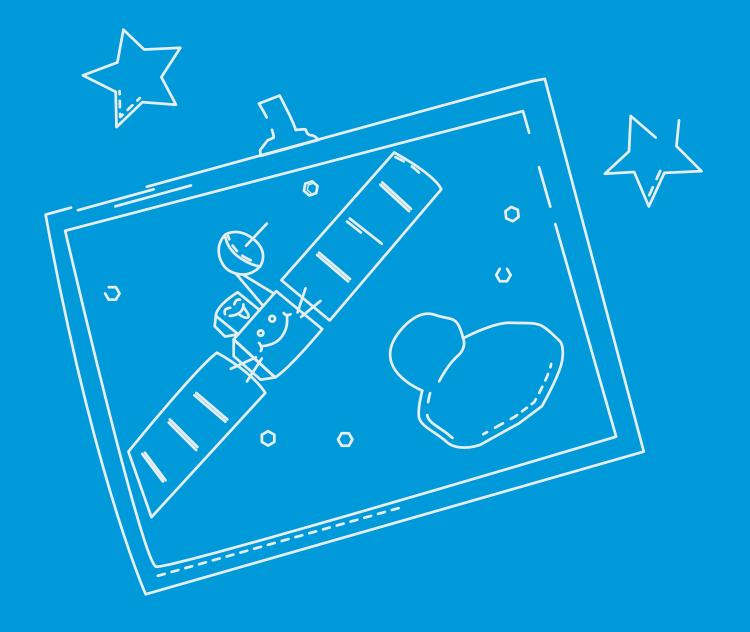
http://rosetta-legacy.tumblr.com/

In parallel, the Rosetta Art Tribute project is an online repository of artistic tributes to Rosetta, Philae and Comet 67P/Churyumov—Gerasimenko created by artists across the world. It includes music, paintings, sculptures, poems, installations, performances, and more. The repository is available online at:

https://rosetta-art-tribute.tumblr.com/

66 Rosetta Legacy

# O1. SCIENCE, WONDER AND EXPLORATION



Luis Muñoz

#### An incredible science achievement

I was amazed by this mission from the very moment I knew about it.

I've been visiting the blog almost every day ever since and followed up with Philae's "life". It's always good to be surprised by what humans can do.

Congratulations to everybody involved in this!

**Michelle Nichols** 

USA

# Beauty, wonder and perseverance

Rosetta, to me, means three things: beauty, wonder, and perseverance. "Beauty" is for the amazing and diverse imagery of a tiny world that is different from our own, but tells us so much about our entire Solar System's origins. "Wonder" is for the scientific pursuits that led to the mission in the first place and that have driven the mission onward.

"Perseverance" is for all the ups and downs of the mission, especially those – figuratively and literally – of the fantastic little craft, Philae.

Rosetta and Philae, you brought humanity to a comet. Let's hope it is the first of many such missions!

Best wishes to the Rosetta and Philae teams for a future of more beauty, wonder, and perseverance, from a fan in the States.

**Mark Ballington** 

# Congratulations

Congratulations.

A great achievement, showing what can be done. It helps satisfy curiosity, and the desire to explore. I enjoy positive, and creative acts. I look forward to the future.

#### Paul Niquette France/USA

Please accept enthusiastic appreciation from an American octogenarian now living in Jugon-les-Lacs, a small village in France. My work in aerospace systems ended in the late '60s, replaced by commercial activities in earth-bound information technologies and transportation systems, but my interests in space sciences never have ended – indeed my excitement has reached the highest level in the months I have been kept informed of the Rosetta mission. Accordingly, I wish to express my sincere gratitude to ESA for the magnificent web-based updates. Keep up the important work! Please. (Paul Niquette always says please.)

#### Frank DeMarco

First step towards eventually colonizing a very long period object which can be used as a launching point to more distant objects like a stone skipping along the water.

#### **Moray Mackintosh**

Rosetta and Philae have really shown me that we can do ANYTHING and the Solar System is now our scientific playground. NASA, ESA and the other space agencies are the ONE great shining light in a world that is more and more confused. God bless you all.

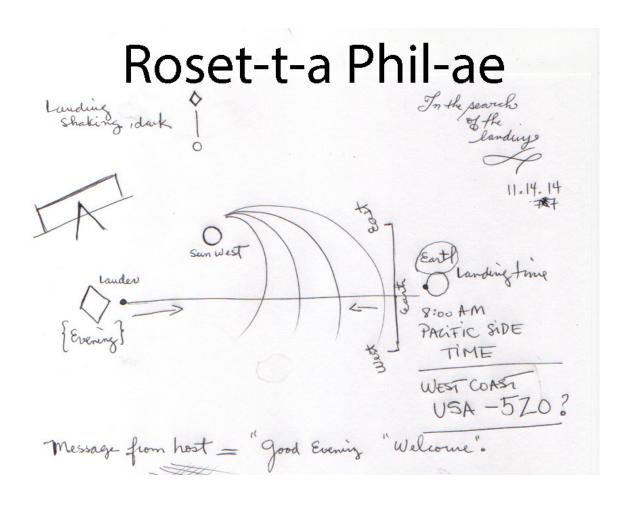
#### Jon Richwine

What the original Rosetta Stone meant for the learning of the unknown, the latest version has also helped us to decipher the unknown language of the Universe.

jvson76

#### Roset-t-a Phil-ae

Rosetta Legacy made realize we landed but thats just the beginning of the STORY - time is short and IT'S a big MESS UP THERE as a BIG MATTER UP HERE - humans are racing when we are suppose to UNITE - much love and thanks for the CHILdren's DESIGN | that's whats is keeping US ALIVE: HOPE



Franco Di Persio Italy

Thank you ESA, and think you Gene Roddenberry...

...to boldly go where no one has gone before.

	Paolo	Generali	Italy
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#### To Rosetta & Philae

From a comet you came into my life, filling my mind with knowledge, and my heart with joy. I'm forever grateful to you. Now, sleep well. You deserve it.

Fabio Italy

#### Dreams come true!!!!

Goodmorning I'm Fabio and can't describe what and enjoy mission is Rosetta...

Before her get up after a lot of years I don't know the mission... after her first tweet I enjoyed every moment with Rosetta Mission with her beautiful photos.

During the day of Cometlanding I was excited for the landing of Philae!!!

I spoke about the mission with my girlfriend, my friends and my family... and I sended them a lot of photos.

The lasts were the discovering of Philae 2 days ago!!!! Thanks for all photos and emotion Rosetta&Philae gave me!!!

Cheers from Cologno Monzese (MI) Italy

Vagner Faria

# We are all explorers

We are all explorers in our spacecraft "the earth". However, how to continue this exploration facing the worst environments of the universe and inhospitable to humans? Rosetta and Philae not only show us the path, but also feed us with the most important ingredient to keep our dreams alive: The amazing discoveries that haven't yet been done. Thanks Rosetta and Philae teams, for one more dream becoming reality.

#### **Paul Byatt**

#### The Mission

#### Rosetta

My fiancée mentioned to me that I had been following the path of the mission since we had met two years ago (plus the six months before that) and that I might be feeling sad that the end of it is so close. What am I going to follow after the final landing?

I honestly don't know what I will do to find something to inspire me. I watched the live streams when they came in and loved it all – to see people who had dedicated a huge chunk of their lives to one single mission so happy with their success was really moving.

I'm not very clever so some of the scientific aspects to the mission are difficult to digest at times but I have been impressed by the clear presentations of the teams involved so that I can then explain what the whole team have found out thus far – and I am more than aware that reams of data is still there to decipher which makes me happy when I think of some of you really clever people discussing and then disseminating what you have found.

Firstly, it is amazing that those two distinguished gentlemen found the comet when they did. Then someone came up with the idea of rendezvousing with it and then, the best of all, convincing others to fund it. And all so long ago – well, long ago in technological terms (remember when phones weren't smart?).

I love the fact that it was the ESA who completed this mission and not NASA – and that is not to denigrate NASA at all – because I am a European and it's nice to be proud of something European in origin. I just think it is incredible that so many intelligent people can do incredibly complex calculations all with so many different languages and systems. I bet it wasn't easy to marry all of those inflections of so many languages and yet...

When I saw the journey that Rosetta had made just to get to the comet was astonishing. How the Hell did you do it? How on Earth do you do these calculations? How? Tell me how!

And how can I explain the sheer speeds involved to my class of ten year olds? And the distances involved! My word, the vast distances! The numbers alone make you think and make you wonder.

And that is the crux of what Rosetta means to me – wonder. It has made me wonder so much about science but also of what else is out there, where we could go next and what we are capable of when we set our minds to it.

This has been an amazing two years for me in my middle age for this mission makes

me yearn for more knowledge (I don't think I've ever been more interested in magnetic fields) and more absolutely incredible images from an object steaming around the sun at unimaginable speeds.

So, thank you. Thank you for opening up my mind a bit further and for making me think away from the mundanity of life here on Earth. Thank you for the images, both chaotically live and beautifully still, and thank you for being brave enough to dedicate a big part of your lives to something so incredible.

When the crash finally comes, I'll be there watching from the island where Arthur C Clarke chose to call his home. I'm sure he would have been proud of you all. I'll admit that I may shed a tear or two, as I am sure you will.

Thank you once again. Paul

Editor's note: Comet 67P was discovered by Klim Churyumov and Svetlana Gerasimenko.

#### Diana Dassen

Rosetta wasn't just a mission far into space, for me it was an adventure. It felt I was going with them, the stories, the images and the discoveries that were made... it was like a whole new universe opened up for me. I always was interested in space, the galaxies, the stars the solar system but this mission was very special. Travelling to a comet was a daring adventure and to me it was a great success.

I miss Rosetta and Philae and the past few days I feel like I said goodbye to a very close and very dear friend. But I'm also very proud that I was able to follow Rosetta and Philae on their journey, those two have a special place in my heart.

Rosetta and Philae, you have changed my life and I love you. Goodbye dear friends and sweet dreams.

**bppwhalon** 

# Watching for a long time

Rosetta took off in March 2004, with little notice. But as a longtime space enthusiast, I followed its progress through people working at Darmstadt ESA. In June 2006, I had the privilege of a private tour, and visited the control room for Rosetta. It was so exciting, thinking that in that little room, a probe was being piloted en route to catch up with a comet and ride it around the sun. Talk about orbital mechanics!

Since then, I received some updates on progress, and then ESA hit the bullseye! The whole world took notice, at last. And even though Philae took a hard bounce or three, it landed and sent data! Bullseye on a bullseye! Move over, NASA... The massive amount of data, the pictures, will keep scientists busy for a long time. Our knowledge of the origin of the solar system, the Kuiper belt, etc., has taken a quantum leap.

But most of all, Rosetta has given us all fresh visions of what we can do and learn. As a bishop, I constantly remind people that Jesus' command to love God with all our mind means to ask questions and work out answers — which engenders more questions. To "seek the truth, come whence it may, cost what it will." The technological marvel that was the Rosetta mission invites us to seek a much greater vision, not only of the strange and wondrous universe around us, but also "this fragile earth, our island home." And humans who live there, and think, and dream...

Thank you for the ride, Rosetta.

**Claude Dury** 

#### Mesmerizing

As a backyard astronomer I was fascinated by the Rosetta, Philae mission. It's glorious that our human race in the midst of all the turmoil around the world can come together for such a project. Even though one agency was "in charge" it was an international effort. It proves what humanity can do if/when we set our minds to it. The views were amazing, the science even more so. With the wealth of knowledge gained, we've only begun to scratch the surface of scientific discovery of our universe. It's my hope, and dream that this project will bring mankind closer together.

#### **Alex Uribe**

A remarkable step in exploration, taking us to witness what all the generations before only imagined. Since we were able to see up and wonder. And then we will go further.

#### Anshit Singh

## The Glorious End of an Era

The title of this post may seem a little too ostentatious or perhaps too far-fetched, but let me drop my two cents.

The Rosetta mission launched in 2004, when I was 6, precisely the year I started getting interested in the cosmos. To be honest, I wasn't even aware of the Rosetta at the time, but it sure left a mark much later, in 2014. This was the year it landed on the comet 67P, a truly and utterly magnificent feat. With close fly-bys with two asteroids and then the rendezvous with 67P, the ride was just getting started.

The mission was the first of its kind, landing on a comet was unthinkable, but this is where we excel, in doing the impossible. Copernicus, Galileo, Newton, Einstein, to name a few, did the unthinkable and heralded new ages in many different fields. Without relativistic adjustments to the clocks on-board the GPS satellites, the measurements would be off by about 10 kilometres! It is these men, and their innovations that ensure humanity marches ahead into new ages, in this case, the new age of Space exploration.

With the limited budget and the ever-closing window, the success of this mission is inspiring. The landing of Philae did light a spark in me, and many more like me who now want to be the guiding hands into the new era. Space exploration is getting cheaper and more precise, just like this mission proved.

Rosetta and Philae brought to close with them the era of 'ancient' space travel, with newer and better technology on the way, it is only getting more exciting. To be witnesses to such events is truly humbling.

Congratulations to the team at ESA and everyone else who made this possible, who stoked the flames of creativity within me, brought the glint in my eye, and tear on my cheek.

Than	k vou	with	all	mν	heart

**S Hansen** 

#### Philae was me

I was Philae flying through space. I became a part of the depth, darkness, and wonder of space. I explored it through my imagination from the images sent back from this mission.

Emma Hugo

UK

I did a workshop with my local school and we made mini Rosettas and Philaes! We even made mud 67p.

This spurred me into doing an after school astronomy club for 6 year olds. It's captured generations and has inspired everyone! I have followed this from the beginning and when my son was old enough so did he! I have booked the 30th of sept off for the landing/ end of mission. And I will be with you all the way!

Amazing feat and science still coming from it all.

Thank you for your inspiration and an amazing mission that I will remember forever!

I also managed to get to Astrofest this year and meet Matt Taylor after his presentation on the Rosetta mission I was delighted and so was my sister.

Will miss the updates, Godspeed Rosetta and Philae.



Raul

# Long May our Might Last

Dear ESA,

You took a tiny ship into a Comet that potentially is older than our moon, even our own Earth. It felt like saying "hello I'm here" to the youngest parts of this Universe. It felt that given the time and effort, for as long as our minds imagine, we can find a way.

Now I need you to venture a ship into this majestic thing called a BlackHole to keep me dreaming.

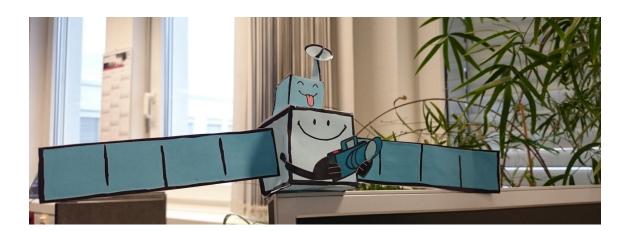
Cheers.

Sonja Koch

# Dear members of the Rosetta mission,

Up to now it is still incredible to me how you could calculate all the necessary data for this mission, and to make Philae land on the comet after a journey of more than ten years! In November 2014 I was as excited as a little child keeping my fingers crossed for Philae's successful landing while I was watching a documentation on TV. So, of course I printed out the cute Rosetta and Philae cartoon pattern last December and fixed them on top of the PC screen at my workplace afterwards. To be honest, it fills my heart with sadness to know that the mission will end soon. However, congrats to all people involved in the Rosetta mission! You all have done an incredibly amazing job!

All the best.



Josef Edlinger

Austria

# My Wallpapers

Since I noticed the first message in the newspaper about the approach to the comet I have been following this amazing mission. Since then and the first pictures published, I have been updating my wallpapers, ending up with my favorite picture as you can see :-)



Every person seeing the printout on my door gets the story of it, my kids love it.



And I have been able to follow the public viewing show about the landing of Philae in a cinema in Graz, see the scientist demonstrating the size of the comet...



Michael Cooper

# The Amazing Story of Rosetta and Philae

What would you think if someone told you this story:

Picture on your mind a comet traveling in Space at a very high speed, in an elliptic orbit where the Sun is one of the focus of it.

This comet has an irregular shape, and a great part of it is ice that will melt approaching the sun, and have some rotation movement.

Now imagine this. A spacecraft is sent to approach the comet, Imagine the speed of the comet, the speed of Earth and the Speed of the Spacecraft, all the calculations needed to be made to let the trajectories coincide at some point, besides this amazing calculations, the distance is such that you cannot send commands for immediate execution, you have to send all commands before and make the spacecraft intelligent enough to approach the comet and stay with it.

But this is not all, now that the spacecraft is chasing the comet, what if you send a smaller vehicle from it to land on the comet. That sounds pretty interesting but you have to consider all these factors: how is the terrain going to be? Does the comet have gravity force keep in on it on the surface, or the vehicle will have to anchor itself to it? Will it receive enough Sun energy to feed its batteries?

Well this is not a fiction story, this is what Rosetta and Philae did, they successfully approached the Comet, and Philae landed on in and anchored itself.

The Rosetta Mission has been an awesome Odyssey, the information it sent is very valuable to understand the origin of the Solar System and the trajectory and rotation of a comet. Both have survived very difficult situations but have overcome them because of the knowledge and imagination of the engineers that controlled them, and thanks to this great team Rosetta and Philae have accomplished their Mission flawlessly.

I am glad that I had the opportunity to follow this historical event, a mission that represents the imagination and creativity of humans and their decision to succeed.

My admiration to all the Rosetta and Philae team!

#### smitheroons

Philae landed on 67p on my birthday. I have always liked space and the space missions that have happened in my lifetime but Philae was so special to me. I listened to the radio on my way to work in the morning and heard that the landing was about to happen. I eagerly pulled up some science news sites when I got to work, checked out the official twitter, and even saw a webcomic celebrating the upcoming landing. I checked back constantly through the day, learning everything I could about the landing sequence, as if my memorization could somehow help Philae remember.

I was thrilled that a cool space thing was happening on my birthday. I was thrilled when Philae landed and worried when it was having problems. Then later when it was determined that Philae bounced I was worried but hopeful. I was glad that it was a good enough landing to do some science before the power ran out. I was sad when Rosetta kept trying to communicate but Philae wasn't answering. I was more sad when it was decided that Rosetta would also descend to 67p and would no longer communicate with earth.

I will really miss Philae and Rosetta and they will always be my favorite space mission. While I am sad to see them go, I am very excited about all of the new information they gave us about comets.

When I was a kid, my parents took me outside at night to see comet Hale-Bopp which reached its closest point to the earth on my sister's birthday! Comets are a rare and beautiful occurrence and I thank the Rosetta team for their continuing efforts to learn all that we can about our universe.

Norman Philips UK

#### Rosetta

I used to work for Astrium in Stevenage and worked on parts of the Rosetta spacecraft.

I have followed the whole mission with much interest and was delighted with the performance of the whole project and the way the spacecraft performed so well after so much time in deep space.

Congratulations to all concerned, it was a magnificent achievement.

Maria Rosa

Spain

Adiós Rosetta. Me siento feliz por haber podido vivir este momento histórico para la exploración espacial y la ciencia. Y como Europea, muy orgullosa de que sea la ESA la que lo ha conseguido. Ahora que se acerca el final de la misión Rosetta seguirá presente en mi vida y en mi casa.

Goodbye Rosetta! I am happy to have been able to live this historical moment for space exploration and science. And as a European, I am very proud that it was ESA who did it. Now that we approach the end of Rosetta mission, it will continue to be present in my life and in my home.



#### **Adrian David**

I made this render in the week leading up to Philae being powered down. It's odd, to have such confusing and conflicting feelings and emotions about an electronic computer encased in a metallic box flying through space. It's how I feel about Cassini, knowing it will one day soon plunge into the depths of Saturn's atmosphere or the Curiosity rover being left to rust on the already rusted landscape of Mars with the other numerous rovers that came before it.

But I realised it's more then that. Ever since the start of the space race, space exploration has assimilated all the hopes, aspirations and wonder of everyone who has ever looked up at the night sky in bewilderment. These individual spacecraft have their own personality, gifted to them by everyone who has worked so hard, dedicating years of their life to this one mission — one goal as well as every person who watches from afar thoughout it's entire journey.

What does the Rosetta mission mean to me? It is... an adventure on the never ending journey of knowledge and exploration we are all currently on, the collective and precedent of human intellegence, an unbelievable feat of engineering and execution in the face of overwhelming odds and near impossible circumstances.

But most of all, it is about that little lander, Philae. Forever destined to fly through the night sky atop that cold, celestial giant for all of eternity. May Philae out live us all.

Please include my name in my contribution. Thank you.



Guillaume Laurent

France

#### Rosetta: awesome and beautiful

What Rosetta mean to me is many things... The sheer audacity of the project itself, the beauty of it all, meeting with and landing on a wandering piece of cosmic history. The concerted effort, ingenuity and will of the people making this possible to happen (from an European institution, actually, something that's worth noting in these times). The wait and suspense at every step. The incredible amount of things learnt, and new questions raised... It felt like a SciFi show except it was real.

And now this small testimony of mankind's cleverness and curiosity will fly away for eons in outer space... I keep hoping it will be caught by some alien civilisation and will be returned to us "enhanced" like V Ger in Star Trek the Motion Picture:-). Thank you to all who've made this possible. You made me and many friends dream and marvel.

**Gelson Amir** 

Brazil

# Olhar para o Sempre

Todas as noites olho para o céu com binocolus, telescopio, só com meus olhos. E vejo ali todo o universo. As estrelas rodeadas por seus planetas o Espaço profundo suas nebulosas nascedoras de estrelas.

Mas ultimamente também graças ao homen eu vi o módulo Philae se separando da sonda espacial Roseta Direcionando-se ao encontro do cometa 67P Gerasimenko. SER HUMANO ABRAÇA O UNIVERSO.

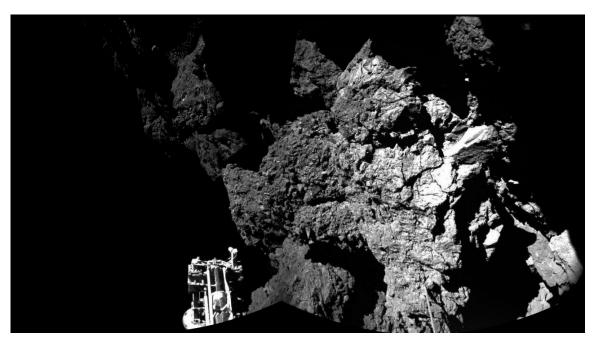
#### Looking to forever

Every night I look at the sky with binoculars, telescope or just with my eyes. And there I see the whole universe. The stars surrounded by the planets, the deep space and its nebulae where stars are being born. But lately, thanks to the human achievements, I saw the Philae module separating from the space probe Rosetta, and going to Comet 67P Gerasimenko. HUMAN BEINGS EMBRACE THE UNIVERSE.

Editor's note: The comet's full name is Comet 67P/Churyumov-Gerasimenko

**Gelson Amir** 

Brazil



Credit: ESA/Rosetta/Philae/CIVA

SEMPRE ORION ME INSPIRA A OLHAR PARA O UNIVERSO. MAS 67p Gerasimenko aguçou minha cuiriosidade ainda mais.

QUE VENHAM MAIS PHILAES PARA O HOMEM, DE VEZ, TOMAR SEU LUGAR NO UNIVERSO.

ORION ALWAYS INSPIRES ME TO LOOK AT THE UNIVERSE. But 67p Gerasimenko took my curiosity further. HOPING FOR MORE PHILAES SO THAT HUMANS CAN FINALLY TAKE THEIR PLACE IN THE UNIVERSE.

Editor's note: The comet's full name is Comet 67P/Churyumov-Gerasimenko

Piotr

# My dying friend

When Philae was sending data losing its energy it wasn't just a robot. I felt that brave Philae was an astronaut who did his mission to the end... And he had done everything before he lost his life in space. I was so sad and amazing — it was our friend...

José Luis

# La navegación más asombrosa

Desde que el hombre está en la tierra es la mayor y más impresionante misión de navegación, con un nivel técnico de aproximación y aterrizaje en un asteroide que va a tanta velocidad, dignó de película de ciencia ficción, enhorabuena camaradas terrícolas!!!

#### The most amazing navigation

Since humans are on earth it is the greatest and most impressive mission of navigation, with a technical level of approach and landing on an asteroid that is going so fast, worth of a science fiction film, congratulations fellow earthlings!!!

Editor's note: Remember Rosetta is exploring a comet, not an asteroid:)



Smurflr

#### Visions of the heavens!

Every time I try to interest someone in the Rosetta mission by showing them pictures or scientific findings, I feel like I lose their attention instantly, "Oh, it's just rocks and dust, ho hum." BUT IT'S NOT JUST ROCKS AND DUST!!! Comets have been objects of mystery and mysticism for all of human history, but that era has now come to an abrupt end now that we've gotten our first detailed look at one in HIGH REZ, not to mention all the scientific data, and WE FREAKING LANDED ON IT! Seeing all the different landscapes of 67P is like... well it's actually seeing an alien world. I don't know how anyone could not be excited by that.

What did it mean to me? It meant a whole 'nuther world to me! It was seeing something absolutely beautiful and rare for the first time. I anxiously awaited and poured over every post, every picture, every finding (and especially the landing of course) with glee. Thank you Rosetta!

A.A. Ruiz

# A message to our children

What do Rosetta, Philae and their mission to Comet 67P/Churyumov–Gerasimenko mean to me, to us?

The victory over centuries of fear, unknowledge; history being beated up by a little metal box called Philae. The Mankind beating up the own fear arriving to the edges; improving its legacy, its life, its history, its today but its tomorrow too. A thanksgiving action to Copernico, Kepler, Newton, Bruno, Aldrin, Bean, Grissom and others over and over again. A hope to our children: a message to tell them that all it's possible from the knowledge and science, Impossible's only now, but not tomorrow, tomorrow you will do it possible, like Rosetta's team did it today. A hope-full inspiration to their lifes and ours: maybe mankind will need you to get it. So: study, read, calculate. Go out, observe the universe, learn about the world, beat your own fears and limits up and get it. For you, for Mankind. Like the Apollo XI in sixties and the others in seventies. Like Colombus or Magallanes. Rosetta has been a new step in the true's search. A reason for keep searching now and forever. And you, my hope and my dreams. Son, the universe is for you. Fly like Rosetta, fight like Philae.

Lars W. Hlm

# Ending a great mission of exploration

Rosetta's journey towards the comet 67P/Churyumov–Gerasimenko started more than 12 years ago, but actually the intended target was 46P/Wirtanen. Due to problems with the launcher, Ariane 5, the launch was delayed by a year and 67P was selected as the new target. The launch went according to plan and a long and complicated journey started that included a gravity assist burn at Mars and a hibernation period of a year, a good nap as Philae would have called it. More than two years ago the target was finally in sight. But behold, the first images transmitted to Earth showed us the unmistakable shape of a rubber duck, we didn't order that! Fortunately the more detailed pictures that came streaming down from Rosetta showed us the two lobed structure we now are very familiar with. Before I go into what my impressions of some of the highlights from the last two years are, a short look back in history might be of interest.

The most well known comet is Halley's I'd say, for various reasons. The calculations done by the astronomer Edmond Halley, using the laws of gravity and motion in Isaac Newton's Principia, published only 19 years previously, showed that this comet was reoccurring on a regular basis and having very elliptical orbits of high eccentricity, being very elongated. Enter the age of celestial mechanics! Halley's comet is of interest in another historical context too. It is depicted in the Bayeux tapestry commemorating the invasion of England by the Normans in 1066.

Of more modern events the Tunguska incident in Siberia in 1908 should be mentioned. Even if there is some discussion whether it was caused by a fragment of a comet or a small asteroid exploding in the atmosphere, the result was flattening more than 2000 square kilometres of forest. This shows clearly the interaction between heaven and earth, luckily not too often of this proportion.

Now to the Shoemaker–Levy comet hitting Jupiter in 1994. First it was fragmented by the gravity of Jupiter and afterwards struck the same planet in multiple impacts. I remember still my amazement looking at the Hubble Space Telescope pictures showing the enormous and ominous black stains in the Jovian atmosphere lingering for a long time afterwards.

My own experiences with comets are much less dramatic. I was, and still am, interested in events in the sky, and when the comet Hale–Bopp showed up in 1997 I found myself In London during its perihelion. Even in the middle of the city albeit in a park but still with quite a bit of light around, I was able to see the coma and diffuse tail, impressive. Two year after, during the Leonids meteor shower I lived in a house with a skylight window facing in the right direction. On the night before the expected maximum the weather forecast was fairly good, I patiently waited, and was amply rewarded with quite a light-show. One bolide was so bright I had to blink several times to see clearly afterwards and the trail lingered for several seconds. This meteor shower happens when the Earth's orbit intersect the orbit of the comet Tempel-Tuttle which is filled with flotsam ejected from the comet. This process has been clearly documented by the spectacular images from 67P. Finally I want to mention the feeling of standing in an impact crater, even if probably is from a small asteroid 200 to 300 meters across, impacting southern Norway about 500 million years ago. This is the Gardnos crater, 5 kilometres across

and very much weathered down, but still it is possible to see traces of the crater walls. The breccia, compacted rock created from the impact, is clearly visible where a stream running through the crater has washed away the topsoil, I felt a bit small in this setting. In comparison the Barringer crater in Arizona is 1.2 kilometres in diameter.

Back to the current event, a grand finale to a magnificent mission. Following the live streaming of the release of Philae lander from Rosetta in November almost two years ago, it was very easy to sense the suspense and excitement of everyone in the control room when the lander started its journey down to the comet's surface. The watching public felt the same. Also the joy when it seemed that the probe had landed, but alas the anchoring systems had failed and Philae went on an unscheduled trip to an unknown location. Still, the robustness of the systems and contingency planning made it possible to get scientific data from the surface for as long as the batteries lasted. When we now have got imagery of the place where Philae came to rest, I for one think that is quite a feat. And Philae is in no immediate danger of getting a sunburn. Rosetta has continued its mapping, providing very impressive pictures in great details of the surface, of ejected dust and jets emerging from various pits on the comet. The scientific instruments have and still are at time of writing, collecting information about the comet and its environment. All the time we, the interested public, have been updated through blog postings, witty tweets and online conferences.

We are approaching the final moment of the Rosetta mission, a long journey is coming to the end. Vast amounts of data has been collected, much is being learned about comets, parts from the creation of the Solar system 4.5 billion years ago. Perhaps, long into the future, Philae will be retrieved and put on display in a museum with a plaque honouring the staff of the mission, the first to land a probe on one of the oldest pristine pieces of the Solar system.

#### Theodora Christoglou

Since I was a kid, long long long!!!! time ago, I gazed at the stars. What were they? I grew up, read, learned and became amazed by the infinite hidden unknown beauty around us. I feel gratitute to all those women and men who studied hard and chose to unlock some of the hidden secrets lying among the cosmos.

Comet 67P/Churyumov–Gerasimenko was a word, but a distance world that the Rosetta mission by ESA made apparent even to the most ignorant of us.

...And this is what's the most important contribution, for me. I don't know what science gained from this mission, I guess plenty, but the fact that even full grown people - who still thought that stars in the sky were planets - or little children, learnt a tiny bit more, this is what Rosetta Legacy is all about!

I hope that Philae with Rosetta will be retrieved at some time (well, one can only hope, if they won't evaporate) and return to Nile as a symbol of the perpetual endeavor of understanding what, how, when and why!

Yaowen Chang

#### **Data-dedication**

So it said in one of your post – the amount of data acquired through the Rosetta mission would allow scientists to get busy for quite a while. Of course, behind Philae and Rosetta are dedicated teams of experts to make the project possible and sustain it.

Congratulations on the fruitful outcome of your hard work.

Just as some people might treat their cars as their pals, Philae and Rosetta are more than data collection equipment for me.

Data don't come easy and things have a liking for not going as planned.

After the boo boo Philae sustained upon landing and went without a trace. One of the possible outcome was the kiddo was gone forever. Then, it finally got in contact with Rosetta and this broken-down piece of trooper transmitted a whole bunch of data gathered during the time when everyone expected it to be in a coma.

Philae gave out as much as it could before really gone sayonara. That is dedication. Rosetta, too, had maintain its functionality till the inevitable time to come-running out of energy. The last bit of remaining power will be used to get it to its final destination, Comet 67P and that terminal dive will uncover even more findings unimaginable till they are found.

It is dedication.

I had collected data for my dissertation experiment and on my mental health condition all the way right before I was locked down behind the gated doors of the psychiatric ward. I know how hard data could come by and I have absolute respect for Philae and Rosetta, who spent over a decade getting to and circling around Comet 67P. Philae and Rosetta worked their best to fulfill the mission goals so that we who are on earth can gain a better understanding of the world we live in.

Where there is an end there is a beginning. The end of the Rosetta mission will benchmark a new era where the trio, Philae, Rosetta, and Comet 67P, will journey on together.

A song for the trio by Whitesnake - Here I Go Again '87

**Eduardo Ponte Bravo** 

Argentina

# Following the life

I am following the mission of Rosetta (from Argentina) because I am interested in the genesis of the life. I am christian (I profess lutheran confession) and I believe in God, and the genesis of the life is a topic that I am fascinated, including the discussion about the existance or not existance of God and the epistemologic of the science to prove this existance.

For now and as I can know on the result of the Rosetta's mission, science still hasn't evidence of the genesis of life, and science can't explain life. Prebiotic soup is not still evidence of life's genesis. As I say to atheist people based on the «truth» of the science, I'll believe in God until science can prove that God does not exist.

However, I celebrate the investigation and the capacity to put a robot on a comet, jamazing! I'll wait for another Rosetta and Phillae than can solve the problems on this mission to landing.

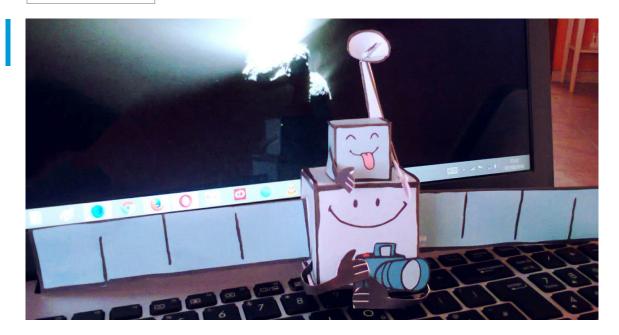
Congratulations for the efforts and achievements.

ap3x

## Rosetta Philae Fabulous Mission

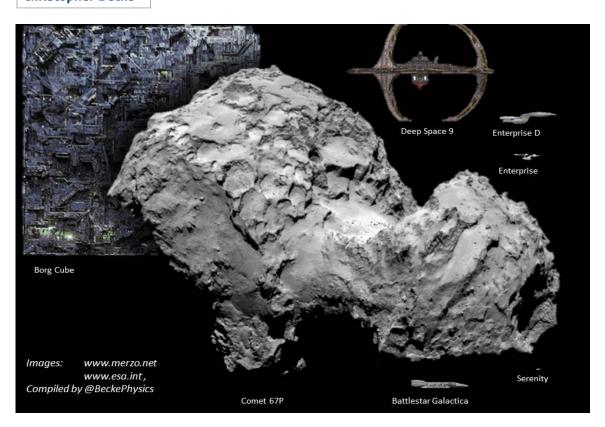


#### Lisa Jackie Grima



Thank you Rosetta and Philae for such an exciting voyage through space! I will miss you both so much! It's been a great learning experience! Bravo, ESA!

#### **Christopher Becke**



Putting 67P into Perspective.

This composite compares Comet 67P/C-G to several well-known science fiction craft, putting the comet into terms that everyone can understand.

John

#### The horizon of an unknown land

If as a species we can come together and achieve a thing such as this, it makes me wonder why it is that as a species we find it so difficult to live in harmony with each other and our home environment.

I came to Rosetta & Philae story in the latter chapters, probably due to an encounter on Twitter when I was reined in for calling a comet a rock :-)

My earliest inkling of man's foray into space is likely hearing the news of Valentina Tereshkova's flight in 1963. From then until the Moon Landing in 1969 through news, be it broadcast or printed, or through books here and there, I learned of Sputnik, Laika, Gagarin, Shepherd, Glenn, Alouette, Ranger, Gemini, Vostok, Leonov, White, Saturn, Apollo, and Astérix. Through my working life news items on space always caught and held my attention, however it was retirement that allowed me to spend more time learning of space; brought about by images posted by Expedition 41 ESA Astronaut Alexander Gerst. I follow the ISS as a hobby now, learning that space is not the domain of any one country, but the domain of our planet, our solar system and all the solar systems within and out of humankind's view.

One day I read something about Philae and wonder what fish had to do with space, unless it was some piecean theory <smile>. I got to learn the story about a rock, sorry comet, a spacecraft and the lander it carried. I got to see some wonderful images of this destination itself hurtling through space as mankind drew close to it in Rosetta, then one day Philae landed on Churyumov–Gerasimenko and we waited and hoped it was no Shoemaker; and then from far far away the signal came.

When I retired I wrote a piece reflecting on life, where it had been and where it would go. As Rosetta and Philae continue their journey through time and space let them be a monument to what our species is capable of achieving.

Today if you will allow me, I would like to dedicate those words to the young at heart, the young of our generation and to the future our species will ultimately go.

#### The horizon of an unknown land

I stood upon the shore of this land unknown Unsure of what the horizon held in store The beginning was lost in time and in the past Somewhere beyond the horizon and the seas

And so in this moment I must once again take the first step Upon the journey some call life
The final destination for all travellers is the same
The time will come we know not when
Perhaps our legacy will be in the seeds we sow
And through the spring and summer the flowers grow

Until the harvest in the golden yellow fall Will bear the fruit of life's labors for one and all

So seek the lands and seek the seas in life explore Or further still beyond our earth the universe's door For wonders abound past all horizon lines A light from moons and stars will always shine

One step is all it takes for us to learn To change the horizon of an unknown land.

**Lynne Stewart** 

# Rosetta and the little Lander who could!

I'm not even sure I can put into words how this project has affected me. I have been a Trekkie since a young age. I've been a space nerd about as long. The idea of space exploration and getting out beyond the bounds of our planet intrigue me. I memorized all sorts of space and solar system facts. The Rosetta and Philae adventure hit all the right notes for me. They went out there... they explored space, they explored a comet and increased our knowledge base. They aren't 'people' and yet I feel like they are. The brave little Lander who did it's best under difficult circumstances far from home. Rosetta, who will now end its mission crashing into the comet but sending data back until the very end.

Heroic, I say! After many years, my eyes have turned up to the skies, past the earth, reminded of all the amazing adventures I hope we have. All because Rosetta and Philae shared their journey with us. Farewell, little heroes!

ashutoshdiwakar

# Rosetta and Philae: A Journey To A Comet

Rosetta is one of the epic missions that I have ever come across. I was having a normal interest in the field of space exploration but after knowing about this mission, my interest increased by many times. So, thanks a lot to ESA & its Rosetta Mission.

Reaching to its destination 67P/C-G with all such perfections, when there are always threats to the spacecraft running for long distance, was absolutely a terrific journey. Another wonder was its hibernation that too for two and half years when where it was going was fully based on calculations only. After this, so many manoeuvres and so much efforts were given to orbit spacecraft around the comet which was absolutely amazing. Adventure doesn't stop here till the reach to destination only. I think landing of lander Philae itself on the comet where comet's escape velocity was only 1m/s was the most challenging task. And, finally, here came the issue when Philae jumped 3 times to finally settle down on the surface and lost the connection after some time.

I was very sad hearing the news of the end of mission on 30th September. However, happiness came a few days before the end of the mission when Rosetta found Philae again. I was very much excited. In my view, the happiness of relocating Philae is the same as the first time orbit insertion of Rosetta around 67P/C-G or the first ever landing of Philae itself on the comet or the second time communication with Philae in July 2015. And now, Rosetta will be relax and she can happily land on the surface of the comet as she has seen her Philae at least once just before the end of her life.

Rosetta Mission has connected the people emotionally all over the world. The emotion increased by many times because of those cute animations also which made us to think about Rosetta & Philae not just like any robot but as the two live things.

A grand salute to this terrific mission! I will badly miss you both Rosetta and Philae.

bhupendra budha

# Amazing journey so far!

Our probes Rosetta and Philae would have gone through different extremes. Taking huge risk over there had they somehow managed themselves to continue the mission. Bad vibes when Philae went through multiple bounces and also good vibes we were able reconnect to the probes after long hibernation. There were many ups and downs during the mission but hopes made us tackle those issues. Finally, I want to say that that was a great journey so far! Hope to see such sort of mission from ESA team. #farewell\_Rosetta and thanks ESA team for letting us to be part of amazing journey!

José Vicente Diaz

Spain

# Rosetta y el cometa

La aventura científica de Rosetta y la pequeñita sonda Philae en el cometa 67P/Chury, ha sido una de las más tiernas y evocadoras historias de los viajes en el espacio, cualquier misión se queda atrás tras la proeza del la órbita en el cometa y del impresionante aterrizaje en este increíble objeto. Mis sensaciones han sido de entusiasmo, nerviosismo, alegría. Un computo de sensaciones que llevan a la conclusión de que gracias a misiones como esta la ciencia jamás morirá. Os cuento un poco como ha sido la misión.

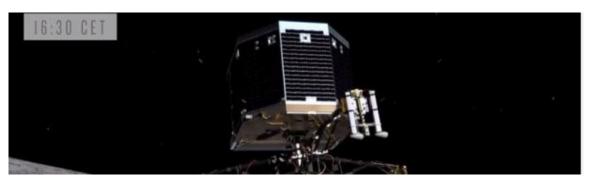
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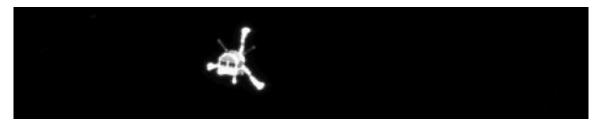
Credit: ESA/ATG medialab

Credit: ESA/Rosetta/MPS for Osiris Team

Yo puedo contar que he vivido esta maravillosa experiencia de vivir toda la misión día a día, ha sido maravilloso cada descubrimiento y cada noticia, la recordaré por siempre. Y como casualidades de la vida tuve la ocasión de fotografiarme junto a un poster enorme de Rosetta que había en una exposición. Todo un sueño!!



Credit: ESA/ATG medialab



Credit: ESA/Rosetta/MPS for Osiris Team



#### Rosetta and the comet

The scientific adventure of Rosetta and the little probe Philae at comet 67P/Chury has been one of the sweetest and most evocative stories of space exploration, any mission is left behind after the prowess of orbiting the comet and the impressive landing on this incredible object. My feelings have been of enthusiasm, concern, joy. All these sensations lead to the conclusion that, thanks to missions like this, science will never die. Let me tell you a little bit about the mission.

#### https://josevicentediaz.com/2016/09/07/rosetta-y-el-cometa/

I can tell that I have lived this wonderful experience of living the whole mission day by day, every discovery and every news has been wonderful, I will remember it forever. And as a coincidence of life I had the opportunity to photograph myself next to a huge poster of Rosetta at an exhibition. What a dream!!

Jon Hancock

#### Cosmic Euthanasia

Watching in silence as the signal from Rosetta stopped was a very emotional moment for me, and I am sure, for everybody watching. No cigars or flag waving, it surely was a 'Cosmic euthanasia' as one of your senior scientists put it. To see Rosetta's signal sink into the background noise was very moving.

I am a big fan of the understated way in which the ESA operates, the technical achievements are mind boggling and the resulting science is spellbinding. I vividly remember the Halley fly-past mission 30 years ago, when the ESA's Giotto spacecraft whizzed by that famous comet in the early hours of the morning. I sat up and watched as the images were broadcast live on BBC television. The planning for the Rosetta mission must have started just after that intrepid Giotto mission and it's only now that I see the Rosetta images, that the Giotto images start to make a bit more sense to me. The Rosetta expedition has given the Giotto images some context.

Rosetta has been truly fascinating, it inspired me to go and see the Rosetta Stone in the British Museum, I have had the Rosetta blog set up on my computer and I check it every morning to see what's been going on up there. I wish your team every success in the future and send my sincere thanks for a most wonderful and inspiring mission.

#### **Erwin Dehouck**



Atterrir sur une comète! Avec Rosetta, la réalité a (largement) dépassé la fiction.

Landing on a comet! With Rosetta, reality went (way) beyond fiction.

Mariela Romero | Argentina



Estimados amigos de ESA:

Les saludo con gran afecto desde Buenos Aires, Argentina.

12 de octubre. Ya nadie habla de Rosetta, la Esa nohace más posts en su cuenta de Twitter. La misión terminó.

Si pudiera ver en vivo al cometa, vería también a Rosetta, posada en su superficie. La mano del hombre en el espacio profundo. Que gran hazaña! Cuánta felicidad llenará las almas de las personas que participaron de tan gran proeza humana.

Muchos de ellos son personas anónimas y de muchos de ellos no sé siquiera sus nombres, pero los admiro. Admiro su vocación, su esmero. Han llegado muy lejos. Tengo 36 años y nada que ver con el mundo de las ciencias espaciales, sin embargo soy una gran entusiasta del mundo de la astronomía.

No dejo de mirar el cielo ni un solo día.

De pequeña solía pasar mucho tiempo mirando la luna y todos los puntos brillantes que eran diferentes a las estrellas. Y a las estrellas también.

Me fascine con Contacto, de Carl Sagan, y con Cosmos con Neil deGrasse Tyson. Dicen personas más grandes que yo, que el Cosmos de Carl Sagan era más poético. Veía "El Universo" de Michio Kaku y muchos documentales de Stephen Hawking.

Cuando empecé a leer sobre 67p hace varios años atrás, lo hacía por atracción o por interés de saber que harían detrás de ese cometa, cuál era el propósito. Empecé a darme cuenta de que un grupo de personas tenían como misión enviar a Rosetta a seguir un pedazo de piedra vagando por el sistema solar. Y si bien, ya seguía otras misiones de la nasa por ejemplo, la misión Rosetta me atrapó.

Aprendí muchas cosas. Su nombre, el de Klim Churyumov y el de Svetlana Gerasimenko. Pasé muchas horas pensando en como sería Rosetta, la sonda, que tamaño tendría y como serían sus trayectorias. Qué se podría ver si uno estuviera en el espacio con ella. Temble de emoción cuando en 2014 Philae iba a ser lanzado para aterrizar sobre 67p. Lo que la gente común como yo, no dimensiona es que los resultados preliminares de 67p son un hito en la historia de la humanidad.

Recuerdo haber visto imágenes de la misión Stardust, Deep Impact, y quedé fascinada de sus resultados. Ahora de 67p sabemos que se encontró oxígeno en estado muy puro, y normalmente no se encuentra así porque es un elemento muy reactivo y se mezcla fácilmente con otros elementos. Esto significa que el oxígeno estaba en el cometa al comienzo del Sistema Solar, hace 4.600 millones de años.

Otra fuente de asombro fue el hallazgo de que el núcleo del cometa no tiene campo magnético. Si 67P es representativo de los núcleos de los cometas, es improbable que las fuerzas magnéticas hayan desempeñado un papel en la acumulación de cuerpos rocosos de más de un metro que participaron en la formación de los planetas, deducen los científicos. Estos resultados podrían obligarlos a rever una teoría clave acerca de la formación de los cometas y otros cuerpos del sistema solar.

Que el cometa es muy poroso y tiene una densidad muy baja, de unos 0,5 gramos por centímetro cúbico, por lo que flotaría en el agua como un corcho.

Al cierre de la misión se apagaron todos los sistemas a bordo de Rosetta y se pararon las bandas de frecuencia que ha utilizado para que se puedan utilizar para otras misiones sin que se produzcan interferencias.

Al 28 de septiembre desde Buenos Aires estaba creando mi usuario en Livestream.com para seguir al máximo posible en mis horarios libres todo lo referido a Rosetta. Y así fue. Fue emocionante ver desde el otro lado del mundo a toda esa gente en esoc dándole los últimos comandos.

Los quiero saludar, brindar todo mi respeto y admiración. Durante años viví con un cometa.

Tanto que hasta veía a 67p en los maníes de los bares.

Vivir con un cometa fue muy emocionante, divertido, fascinante, y de mucho aprendizaje. Voy a seguir otras misiones nuevas para continuar aprendiendo de todos ustedes. Pero siempre tendré un recuerdo especial de la misión Rosetta. GRACIAS!

#### Vangelis - Rosetta "Mission Accomplie" (Rosetta's Waltz)

#### Dear friends at ESA:

I greet you with great fondness from Buenos Aires, Argentina.

It is the 12th of October. Nobody talks about Rosetta anymore, ESA does no longer post in her Twitter account. The mission is over. If we could see the comet live, we would also see Rosetta, perched on its surface. The hand of humans in deep space. What a great feat! How much happiness will fill the souls of the people who participated in such a great human feat.

Many of them are anonymous people and of many of them I do not even know the names, but I admire them. I admire their vocation, their dedication. They have come very far.

I am 36 years old and have nothing to do with the world of space science, however I am a great enthusiast of astronomy. I can not stop looking at the sky for a single day. As a child I used to spend a lot of time looking at the moon and all the bright spots that were different from the stars. And the stars too. I was fascinated with Contact by Carl Sagan, and with Cosmos by Neil deGrasse Tyson. People who are more important than me say that Carl Sagan's Cosmos was more poetic. I watched "The Universe" by Michio Kaku and many documentaries by Stephen Hawking. When I started reading about 67p several years ago, I did it out of fascination and interest in knowing what they would do with that comet, what the purpose was. I began to realize that a group of people had a mission to send Rosetta to follow a piece of stone wandering through the solar system.

And while I was already following other missions of NASA, for example, the Rosetta mission captivated me. I learned many things. Its name, that of Klim Churyumov and that of Svetlana Gerasimenko. I spent many hours thinking about what the Rosetta probe would look like, about its size, its trajectory. What you could see if you were in space with her. I trembled with excitement when, in 2014, Philae was to be released to land on 67p. What ordinary people like me cannot fully realize is that the preliminary results of 67p are a milestone in the history of humankind.

I remember seeing images from the Stardust mission and Deep Impact, and I was fascinated by their results. Now from 67p we know that oxygen was found in very pure state, and normally it would not be the case because it is a very reactive element and it mixes easily with other elements. This means that oxygen was in the comet at the beginning of the Solar System, 4.6 billion years ago. Another source of astonishment was the finding that the comet nucleus has no magnetic field. If 67P is representative of comet nuclei, it is unlikely that magnetic forces have played a role in the accumulation of rocky bodies of more than one meter that participated in the formation of the planets, the scientists deduce. These results might cause them to review a key theory about the formation of comets and other bodies of the solar system. That the comet is very porous and has a very low density of about 0.5 grams per cubic centimeter, so it would float in the water like a cork. At the end of the mission, all the systems on Rosetta were shut down and the frequency bands used were stopped so that they can be used for other missions without interference. On 28 September in Buenos Aires, I was creating my user account at Livestream.com to follow as much as possible in my spare time everything that had to do with Rosetta. And so it was. It was exciting to see all the people at ESOC giving the last commands from the other side of the world. I want to greet you, offer all my respect and admiration. For years I lived with a comet.

So much that I even saw 67p in the pubs, in the shape of the peanuts. Living with a comet was very exciting, fun, fascinating, and a lot of learning. I will follow other new missions to keep on learning from all of you. But I will always have a special memory of the Rosetta mission. THANK YOU!

### Nos habéis llevado a lomos de un cometa

Nunca imaginé que se pudiera hacer una misión a un cometa. Lo veía lejano, mucho después de mi muerte. Pero lo habéis hecho, me habéis llevado a su superficie, me habéis dejado mirarla con asombro, darme cuenta de que es ¡tan parecida al resto del sistema solar!

Sentí una enorme tristeza cuando Philae no pudo sujetarse al suelo y dejó de transmitir. Me emocioné cuando despertó y dio señales de vida unos días. Compartí su hallazgo con el mundo emocionada y eufórica ¡ahí estaba! en una grieta. Y lloré como una tonta cuando Rosetta se dejó caer sobre 67P.

Habéis hecho posible el sueño de alguien de mi generación. Nosotros nunca esperamos grandes cosas porque siempre pensamos que las verán nuestros hijos. Nos sentimos intermedios en el tiempo, demasiado jóvenes en la exploración espacial y demasiado viejos para ver realmente resultados. Por eso esta misión ha sido tan importante para mí.

¡Me habéis ayudado a caminar por un cometa! portador de los elementos de la vida por el universo. ¡¡¡Muchas gracias!!!

#### You have taken us to a comet

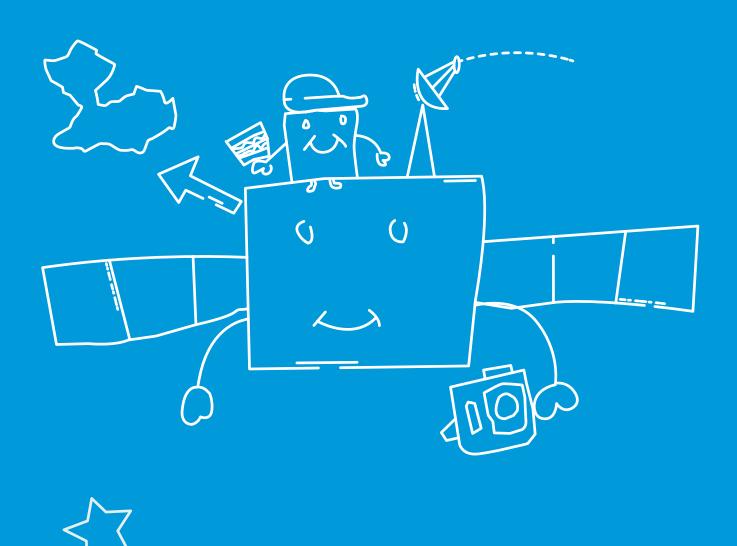
I had never imagined that you could create a mission to a comet. I saw this as something to happen in the distant future, long after my death. But you have done it, you have brought me to its surface, you have allowed me to look at it with astonishment, to realize that it is so similar to the rest of the solar system! I felt a great sadness when Philae could not hold to the ground and stopped transmitting. I was excited when he woke up and gave signs of life for a few days. I shared its discovery with the world, excited and euphoric, there it was! In a crevice. And I cried like a baby when Rosetta let itself fall on 67P.

You have made the dream of my generation possible. We never expect great things because we always think our children will see them. We feel halfway in time, too young for space exploration and too old to really see the results. That is why this mission has been so important to me.

You have helped me walk on a comet! Bearer of the elements of life through the universe. Thank you very much!!!

# 66 Rosetta Legacy

# O2. A STORY-TELLING JOURNEY



#### Federico Hernandez

# Inspiration by story telling

My son (8) and I have followed Rosetta & Philae through Twitter, the blog and the animated movies on YouTube. The creation of "personality" through the story telling in the tweets and the movies has been a success to interest my son for science and space. Well done, Rosetta, Philae and the entire ESA team. Space is adventure. There are a lot of things still to discover.

Evy

# The outreach was great!

This project proved a great way to involve our young sons in science with all its ups & downs and unpredictable turn of events. The comics were an excellent gateway in to more 'difficult' subjects and I finally got the message across that contrary to what playmobil & cartoons will have them believe astronauts are scientists and not a bunch of trigger happy meteorite-blasters;)

Jiri Kortanek

#### Yes! It's a hit!

With the Rosetta mission and especially with the means you communicate it you just hit the right spot. Today, when people are overwhelmed with information you need to get their attention. To show them something which makes them say "This is interesting, I want to know more!" And I think you made just that. I don't have to send my friends some article with lot of text they don't know if they even want to read, no. I will send them *Ambition* or *Once upon a time* or a song or any other art inspired by Rosetta. And that is enough. These are interesting on their own and along the way make people want to know more

When I watch *Once upon a time*, I always get tears in my eyes... because there it is – pushing the boundaries of mankind, teaching history in clear simple motion picture. History, that is happening now.

#### **Brigitte Hottier**



- Rosetta & Philae analyzing Earth water before their launch -

I can't believe the mission is about to end... I'll always remember what I was doing on those days when Rosetta woke up, when Philae landed, when Rosetta switched to safe mode, or when Philae was found...

Since she woke up, Rosetta has tirelessly shared her views of 67P & her thoughts (well done, Outreach Team!) with us, days after days, months after months, years after years.

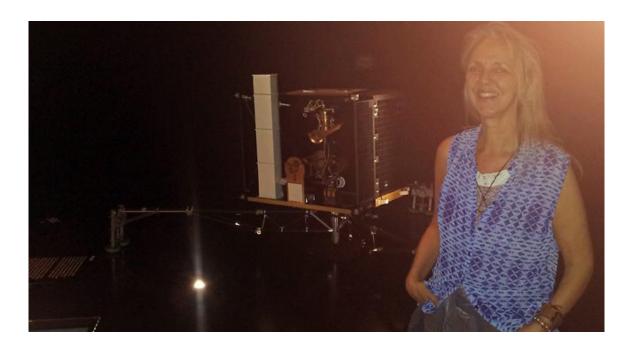
It's been a pleasure to know you, Rosetta & Philae, we'll miss you, but you made history!

**Su** Germany

### Pure Love <3

I am following all our nowadays space adventures, but Rosetta and Philae became very special to me due to their multiple appearance on online platforms, f. e. the cute (and in the end almost heartbreaking) twitter dialogues between the two, which made them come so much to life. The live video streams, the beautiful "Ambition" short movie, the many articles around the world, all this made me feel as if being a part of the team behind all this – even though it was kinda sad that this was needed to make people aware of the wonder that was going on with the Rosetta mission, you sure did a great job on it;) When I was visiting Berlin about three weeks ago, I had the chance to meet Philae's twin in the "Comets" exhibition in the Museum of Natural History (Tschuri was there too.)

I am grateful that I lived in a decade where this historical event took place – first rendezvous with a comet including landing on it! Thank you for this awesome adventure:)



Ricobzh

# Good job

It was fun to see ESA creating two 'fictional characters' on Twitter. To be able to interact with Rosette and Philae was awesome. I loved the discussions between the two. But really planning something that complex years in advance... Well done!

**Stuart Buchanan** South Africa

# #CometLanding: a social media strategy that's out of this world

The Rosetta mission was one giant leap for a small robot, and in my opinion, a stellar example of modern science communication.

I work in social media and digital marketing, and in the wake of #CometLanding, I wrote this piece detailing the way ESA used Twitter to spark the public's imagination. I was really inspired by this approach and have used it as a guideline when encouraging clients to embrace social media.

http://www.flowsa.com/blog/entry/cometlanding-a-social-media-strategy-thats-out-of-this-world

Stuart Buchanan So

South Africa

## I, Robot fanboy

I became totally engrossed in the Rosetta mission around the time of the comet landing. In this blogpost, I recall the dramatic turn of events around Philae's mission, talk about why the social media communication was such a great success, and how the ESA was able to generate real emotion as events unfolded and millions of people around the world followed with anticipation.

The Philae persona was beautifully crafted, and I think it joins the ranks of culturally-significant robots in Western popular culture. I highlight some of my other favourites here.

Inspired by #CometLanding, I have researched who the ESA social media team was, and am pursuing a career in science communication:)

Editor's note: unfortunately the post on <a href="http://stubuchanan.com">http://stubuchanan.com</a> is no longer available

Fiona Messer

UK/Canada/Germany

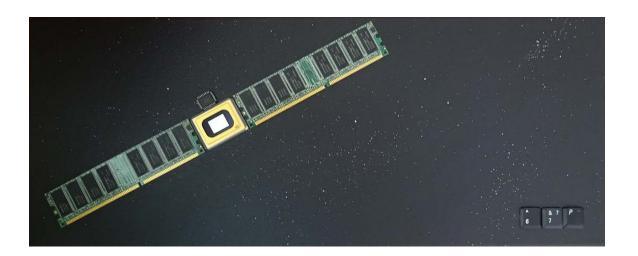
#### The stories we tell

How extraordinary it has been to watch this mission as a non science person. When I first began to take note it was with friends online who were also interested. How could one not be enchanted and fascinated by this huge undertaking? What was even better was the inclusion of the public by the entire ESA team but what I did not expect was the new and pretty awesome friendships I would make because of this mission.

I did not expect that the Rosetta mission would not only teach me so much about pesky comets and long distance communication with little robots that get lost along the way, but also about how we all, as a collective, interact with each other through different mediums and pathways, all reaching out to share our stories and learn. And boy did we learn, even for me for whom the science is sometimes well out of reach but it made me curious and I looked stuff up and I learned. It also broadened my imagination, helped me be a little bit courageous and made me realise I'm a bit of a sap when it comes to the personification of inanimate objects, but this is quite okay.

Like so many other I watched the cartoons, and the film (more than once), hit refresh a billion times during the XKCD series of Philae lander drawings, listened to the hangouts and interviews, scoured twitter for updates (thank you Emily) and become mentally and emotionally involved with this project. It has and will continue to be a part of my life long after it is officially over because it has stepped through the boundaries that sometimes keep the ordinary from the extraordinary and inspired so many. It has infiltrated my home (stickers, toys and self made art) and my hobby as a member of the 501st, as well as my annual trek to Fedcon where sitting in on the ESA panels became a bit of a competition when there were no more seats to be had. In ways I cannot even begin to explain this mission has connected my rather diverse, somewhat nerdy universe together. And it has given me new friends and a renewed sense of wonder.

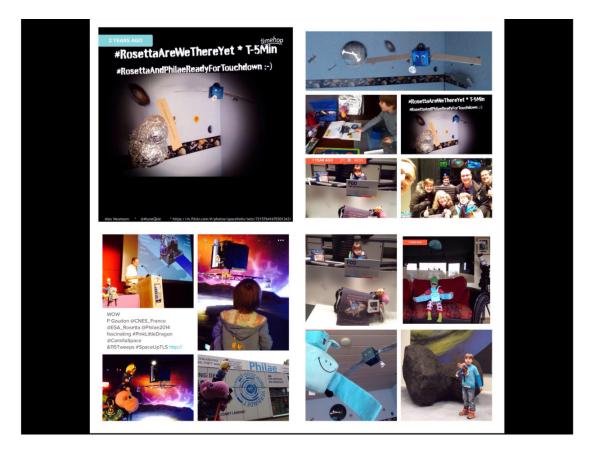
#### Thank you



20

**Alex Neuman** 

# #OnceUponATime #CometLanding #GrandFinale @ESA\_Rosetta following @Philae\_2014 to #ChuryumovGerasimenko #P67



"#OnceUponATime a spacecraft named #Rosetta was launched into the night sky. A long, long journey lay ahead of her, to uncover the mysteries of our solar system. Rosetta carried a little passenger, the lander #Philae. It had taken many, many years to dream of that mission and now #Rosetta was on her way to the far off comet Churyumov-Gerasimenko."

This is how the lovely tales of @ESA\_Rosetta and her little travelbuddy @Philae\_2014 are being told in an adorable youtube-comic series by @esa.

I can't believe how quickly time flew by since January 20th 2014, when my then 3 year old son @LightspeedLeo, my husband @travelholic and I started following this mission with #RosettaAreWeThereYet and #WakeUpRosetta.

While Leo sat there, watching the live feed and the little videos with sparkling eyes he said: "Mommy, I wish I could wake up together with Rosetta and Philae every morning".

So together we grabbed a tetra pak, card board, tin foil, self adhesive foil, spits of wood and – extremely important – some wobbly eyes for #Rosetta and #Philae and – after studying the blueprints in the <u>latest esa-bulletin</u> – started building our own spacecraft together.

Since then a happy #MiniSpaceTweep and his travelbuddy @PinkLilDragon wake up smiling together with THEIR #RosettaAndPhilae mobile every single morning;-)

It was a pleasure for all of us to follow all their adventures and to learn more about their journey, to listen to Philippe Gaudon during #SpaceUpTLS in 2014 and see those amazing models at "Cité de l'Espace" in Toulouse and also to visit the "Holy Grail of Rosetta", its home base at ESOC in Darmstadt a few times, sitting on the chair of Flight Operations Director #FOD @AndreaAccomazzo in the Main Control Room #MCR and closely feeling the spirit and excitement of this very special place and sharing this with our friends from near and far. (And no, we didn't press any buttons there ;-) )

In a few days, on September 30th @ESA\_Rosetta will follow @Philae\_2014 to its final destination and the two travelbuddies will be finally reunited on their #LuckyDucky #67P.

So I am looking forward to be at ESOC with @travelholic and many others then, sharing the #GrandFinale and the #CometLanding celebrations of a mission so well done by the awesome @esa teams around @AndreaAccomazzo and @mggtTaylor. Congrats to all involved in #Rosetta Mission @ESA - European Space Agency for taking a(nother) giant leap in history, thank you very much for your inspiration and for sharing your ride with all of us.

Your 2 little space explorers will always have a special place in our hearts! YOU ROCK SPACE AND OUTREACH!

@LightspeedLeo & @PinkLilDragon

Alex Neumann (@4tuneQkie) & Eico (@travelholic)

Gloria Italy

# A long social space journey

My passion for space things was not ignited by space itself. I work in communication and in 2011 I was looking for a good reason to join, use and try to understand Twitter, which seemed to me such an unfriendly platform compared to Facebook. Casually I found out it was possible to use Twitter to follow live what the Italian astronaut Paolo Nespoli was doing during his MagISStra mission. I thought it was an extraordinary thing (only 5 years ago!)... so I "discovered" space through Twitter. Than I began following many other astronauts and space accounts but wasn't very interested in interplanetary robot exploration, too much engineering going on for me... until Rosetta and Philae. I loved the mission, how it fueled cooperation between different countries and disciplines, the wonderful communication and outreach results, the big events like #wakeuprosetta and #cometlanding and so on. I attended many lectures and events about Rosetta & Philae, including a long afternoon on the stairs of a university hall with my spacefriend Francesca, waiting for little Philae to touchdown... and I tweeted a lot about all what happened (you can find some of the tweets here).

It was a wonderful ride, many thanks to everyone involved, you made an amazing job that will be remember forever as a milestone in space exploration and communication!

heartmusicblend-blog

### Never forget you, Rosetta

Rosetta mission caught my attention, courtesy of the popular 'wake up' call. I was excited to see what comet looks like and what comet tail is.

Since the dawn of man, comets are thought to fulfil the wish. Through Rosetta, we explored the ancient unknown world and the landscape is striking, much more than our nearest moon. No wonder the mission is destined for 67P.

Many memories from the mission, especially the quest for lost Philae. Kudos to the social media team, without them the reach would be of small scale. Even Rosetta ends as in "All good things must come to an end", the impact is shared by different people. This is its legacy.

**Victor Munoz** 

Chile

#### fisica.ciencias.uchile.cl

We have celebrated the Rosetta mission in a Physics outreach blog I administer (Ondas de Blog). In the most recent entry, published this week, we talk about the end of the mission. Previously, when Rosetta was approaching the comet, and when Philae descended on its surface, we devoted posts to those events. It's been a great joy to follow this adventure, write about it for our followers, and share with them our excitement.

Herbert

#### Closer

The way ESA communicated about the mission brought science and space a lot closer to me. It was a bit like watching a soap series, almost daily and sometimes a thriller, live into my appartment.

Rosetta/Philae were far away but at the same time very nearby.

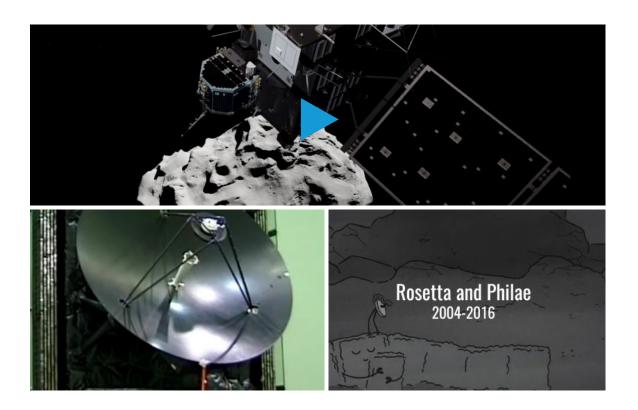
Thank you for this opportunity!

**Colin Thomas Nichols** 

USA

# Goodbye Rosetta and Philae

CosmoCast – a podcast I help run, made by space lovers — created a video to say goodbye. We asked our listeners to submit farewells, and we meshed them into a goodbye letter. I had the pleasure of writing the music and editing the video. Thank you, Rosetta and Philae.



Masanori Watanabe

Japan

#### Dear Rosetta & Philae

Congratulations on your "Mission Accomplie". All those who have been involved in your missions must be so proud of you, I'm sure.

The most impressive aspects of you, in my view, have been that you have been trying to share the missions in quite "broader" picture. Why I'm so impressed by this?? Probably because this is not what every space missions by the Human Beings is doing.

To put yourself in a larger picture, you need to be based on reality/fact when sharing what you're doing, I suspect. I started (rather deeply) following your missions since probably the end of 2013. I'm a late comer. And soon I started seeing this aspect.

Probably because you chose to take this "route", now you must have happened to find yourself having no need to think about what's to share & what's to hide (apart from

regulation on when to release science data). You must have been like "OK, let's share everything with public, as quickly as we can!!"

Two of your most impressive actions on this "route":

- 1) You have looked like having no hesitation in showing/introducing other missions by other space agencies, too, which is not something you often see in space missions (Space mission tends to be rather "local", I would say). So that people around the world can get deeper & fairer understanding on what you're doing. In fact, this is not rare at all in individual level, but you rarely see this on what space agency who launched it is "officially" doing on something they moderate. But you did this openly. Without making public feel you're doing something special.
- 2) You have had no hesitation in sharing criticisms you have received. Even welcoming to hear them. On Rosetta Blog I have seen the blogger, mission scientist, other scientist in ESA, etc, responding to them. Not only showing those criticisms. Which is again something you rarely see.

I think what you have done with this particular "route" has played one of the vital roles in making deeper connections between you & your supporters. I feel what you established is a true connection that exist. Instead of a (fake) connection/story that someone made up & spread by using news medias etc but actually does not exist. (Other space missions I know in operation today which clearly have this aspect & have ended up having such connection with supporters: Akatsuki, (Spirit &) Opportunity.)

Very much I hope this aspect becomes the standard of any space missions, not only of ESA but of all space agencies. So that, for kids who grow up with watching them, this would become something they think they should do.

As for being based on reality/fact, I'm also so impressed by how accurate what Once Upon A Time cartoon series tell have been. Longest applause from me to all those who decided to do the series in that fashion. And to combine with what I wrote earlier, I hope it's really "To Be Continued" and hope someday I will see a space mission which will follow Rosetta & Philae's achievements (no need to be a comet mission) & they will talk about Rosetta & Philae in fairest fashion, whoever will launch it.

No need to do science anymore, Rosetta & Philae. Enjoy your #LifeOnAComet!! Love and peace from Earth.

**Devil13390** 

### Une aventure extraordinaire!

J'ai suivi cette mission dès la sortie de l'hibernation de Rosetta car je n'avais pas suivi le début de la mission, et très vite j'ai été emballé par l'aspect extraordinaire de cette mission et des exploits réalisés par les scientifiques européens!

Des amis journalistes spatiaux m'ont tenu au courant régulièrement des avancées de la mission, du départ de Philae à la fin de vie de Rosetta, des conférences organisées par le laboratoire d'Astrophysique de Marseille sur le sujet m'ont vraiment tenu en haleine

comme des milliers de gens sur ce continent!

Bravo à toutes et à tous pour votre Twitter qui nous a également permis de nous informer sur de magnifiques photos transmises de l'autre bout du système solaire! Ce fut vraiment une aventure extraordinaire pour moi! Continuez à nous faire réver ....

#### An extraordinary adventure!

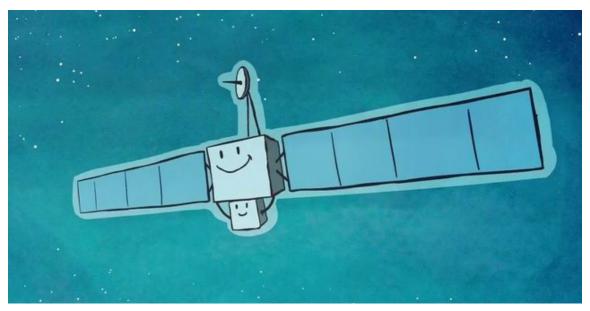
I followed this mission immediately after the wakeup of Rosetta as I had not followed the beginning of the mission, and very quickly I became excited by the extraordinary aspect of this mission and the feat achieved by European scientists! Space journalist friends kept me up to date on the progress of the mission, from Philae's departure to the end of Rosetta's life; conferences organized by the Astrophysics laboratory in Marseille on this subject really kept me hooked like thousands of people on this continent!

Congratulations to all of you for your Twitter, which also allowed us to inform ourselves about beautiful photos transmitted from the other end of the solar system!

It was truly an extraordinary adventure for me! Keep making us dream...

Emily A. Iarocci USA

# Life Lessons from a Comet



Credit: ESA

Just a couple of hours ago, the European Space Agency's extremely complex and compelling Rosetta mission drew to a close in dramatic fashion. This is the program that launched in 2004 and landed the Philae probe on comet 67P/CG back in November, 2014. This morning, Rosetta was intentionally crashed onto the comet, bringing to an end the transmission of stunning images and vast quantities of scientific data that will continue to provide revelations for decades to come. I have followed this program for years and am in full (and emotional) geek mode over the mission's end.

I've gotten my kids into Rosetta and Philae, too, courtesy of the fantastic educational animated segments produced by the ESA. Each milestone in their journey was explained elegantly for the masses of any age. And while the science was the point all along, many other unexpected non-scientific questions arose as we followed their story.

After watching Philae separate from his "sister" I had to answer that question all parents get at some point – "Will they be together again? Will we always be together?" as best as I could. "I don't know. Let's hope so."

And when ESA announced several months ago that Rosetta would in fact be joining her "brother" in a controlled descent onto the comet, I reveled in providing the news that yes, they'd be together again – always. Further happiness came when pictures of the lost lander appeared to the public on September 2. Now we know where they are and where they'll be forever.

Forever is a long time, and an abstract concept when you're little. Tonight, I know I'll field more difficult questions like those I answered this morning – "Will we ever see or hear from them again?" No, sadly we won't.

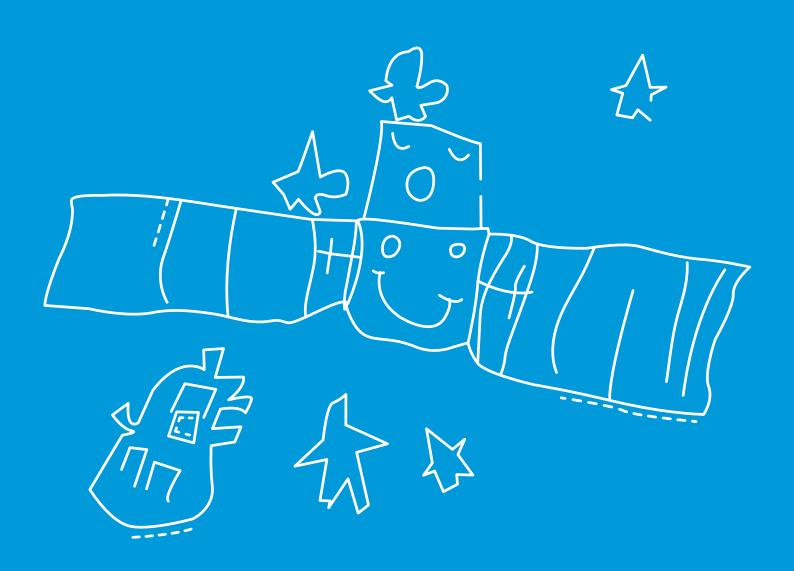
But as I wipe the tears from my own eyes, like many of the scientists and spectators did this morning, I prepare my own talking points for my children about Rosetta's legacy. About working together to achieve the seemingly impossible. About planning something that may not bear fruit for years, and doing it anyway. About leaving a mark that both inspires people today and will amaze them decades or centuries into the future.

That's not science fiction, and it's not just science fact. It's why we're all here.

#### Life Lessons from a Comet

# 66 Rosetta Legacy

# 03. INSPIRING CHILDREN



**David Fiacchini** 

Italy

#### A wonderful scientific view of the future through the past

Thanks to the excellent full-time effort of ESA's staff (scientists plus blog and social media team), the Rosetta mission is really plunged into the daily lives of all those who followed the exciting journey to comet 67P.

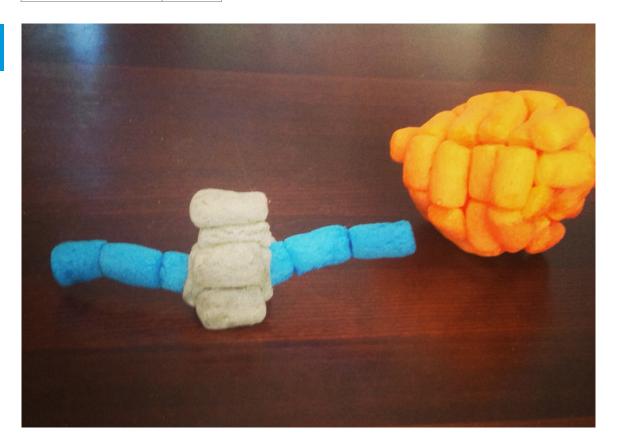
I, my daughter and my secondary school students are literally "captured" by amazing photos, updates and first awesome scientific data analyzed by ESA's research-group. The Rosetta mission – perhaps for the very first time – also plays a pivotal and huge role in knowledge creation and diffusion in a large part of our society: we will properly realize it in the future when new generations of enthusiastic young scientists, fascinated by the Rosetta & Philae "journey through the past", will continue on the... "comet footsteps" left by this unforgettable spacecraft for new ambitious missions! In the meantime, my 6-yr-old daughter was so naturally involved and "impressed" to say a special goodbye to Philae (and Rosetta) in a "unconventional but powerful" way (see photo below):



#### Richard Lloyd

My daughter who was 6 yesterday and received a planetarium for her birthday wants to be an astronaut. You can't get much more inspired than that.

Giovanni Miniscalco Italy



Giovanni, 8 years old, Rosetta fan.

Kai Werneke	Germany
I/di AACIIICI/C	actifically

Hallo!

My son (5) was very impressed by watching Philae on its way through the universe.

He started interesting in planets and stars, wanted to know everything about what mankind already had achieved to know about our solar system.

We watched together Philae's landing and it became a little friend to both of us.

Sad to let it go into the endlessness of the eternal universe on its never comeback journey.

Greets from good old Germany

#### lianagr

The impact of space exploration; Rosetta & Philae & Comet 67P from the eyes of a 4 year-old. Jonathan, now 5 years old, has been asking for Rosetta to land next to Philae so they keep each other company:)



Gianluca Altieri

#### Faraway, So Close

Thank you Rosetta and Philae. We love you.

Italy

Me and my son are so far. Since the same moments, when you reached the comet, Summer 2014.

We talked often about your mission, and your stories accompanied our chat. We dreamed together. Technology has united us and permits humans to make dreams come true. As for me and my son, that with images and chat we feel closer, your images and data collected permit to shorten distances.

Dear Rosetta, you are a dream. You are real and you remembers us that nothing can stop us.

Now, your mission is ending I hope you will bring luck to us and me and my son can sleep soon together again under same sky.

However, we will talk about you for ever, and I think that my son (and every child too who knows you) see the space in different way. Because you are history.

Antonio Coppola

Italy





They mean very very much to me and my family. I involved my grand daughter Serena in the last two years in following news about the mission, helped by cartoons from ESA, especially Paxi. She was and is so interested that almost every day she sends me messages on whatsapp about some astronomical issue! She is only 5 and a half years old. ... more Serena about Rosetta, Philae ...



Angelo Esposito Italy

#### Una favola vera

Da sempre gli astronomi, sono stati affascinati da oggetti che ogni tanto, sono visibili nel cielo notturno, con spettacolari code luminose. A questi oggetti è stato dato generico nome di stelle comete, attribuendo loro il nome degli astronomi che ne segnalavano il passaggio.

Un giorno alcuni scienziati della Nasa, sapendo che una cometa che chiameremo per brevità Gera, sarebbe passata "vicino" alla Terra, decisero di inviare due sonde, con lo scopo di stringere un'amicizia, e fare conoscenza con la cometa. Per avere informazioni sulla loro vita, ed eventualmente, anche il perché, del loro peregrinare nello spazio, girando attorno al sole, e ritornando così alla loro casa.

La più grande delle sonde, si chiamava Rosetta, la più piccola Phil.

Dopo un breve periodo d'attesa, misurato su scala cosmica, avvenne l'incontro.

Rosetta chiese alla cometa, se poteva accompagnarla per un tratto del suo lungo viaggio, e se poteva fornirgli le informazioni, richieste dagli scienziati, permettendo, a Phil di atterrare sulla sua superficie, per tale scopo, la cometa acconsentì.

Phil atterrò, sulla cometa, fotografò, analizzò, e trasmise con grande gioia degli scienziati, le informazioni raccolte. Le stesse poi furono divulgate a tutto il mondo, che gioi assieme agli scienziati, non solo per le foto, e le informazioni raccolte, ma anche per la grande capacità tecnica dimostrata, che ha permesso l'incontro con la cometa. Dimostrando che l'uomo e capace di grandi imprese.

Ad un certo punto, considerato che Rosetta chiedeva tante informazioni alla cometa, la stessa gli propose, di scendere anche lei sulla sua superficie, e di accompagnarla nel suo ritorno a casa, che si trovava molto lontano, in un luogo chiamato "Nube di Oort" cosi Rosetta, e Phil avrebbero potuto ampliare le conoscenze, per poi al prossimo passaggio vicino alla terra, sarebbero ritornati, portando maggiori e più complete conoscenze con grande soddisfazione degli scienziati, e del mondo intero.

Rosetta accettò, la proposta della cometa, e atterrò sulla sua superficie, iniziando cosi un lunghissimo viaggio.

Tutto il mondo da quel momento iniziò ad aspettarne il ritorno, fra qualche anno, di Rosetta, e Phil, e della cometa che per brevità chiameremo GERA...

Cosi ho raccontato a mio nipotino Francesco, ancora in età pre-scolare, questa grande impresa, suscitando interesse, e soddisfacendo le sue domande. angeloesposito

#### A true fairy-tale

Astronomers have always been fascinated by objects that sometimes are visible in the night sky with spectacular bright tails. To these objects the generic name of comets was given, adding the name of the astronomers who noted their passage. One day some NASA scientists, knowing that a comet would pass "near" Earth – we shall call it Gera, for brevity – decided to send two probes, in order to forge a friendship, and get acquainted with the comet to get information about their lives,

and possibly even the reason of their travels in space, revolving around the sun and going back to their home.

The largest of the probes was named Rosetta, the smallest Phil.

After a short waiting period, measured on a cosmic scale, the meeting took place. Rosetta asked the comet if she could accompany her for a stretch of her long journey, and if she could give her the information asked by the scientists, letting Phil land on the surface. For this purpose, the comet agreed.

Phil landed on the comet, photographed, analysed, and transmitted, to the scientists' great joy, the collected information. These were then disclosed to the whole world, who was happy along with the scientists, not only for the photos, and the information collected, but also for the great technical ability demonstrated, which had allowed the encounter with the comet. Proving that humans are capable of great endeavours. At a certain point, as Rosetta asked the comet for lots of information, the latter proposed she also came down to the surface, and accompany her on the way back home, which was very far away, in a place called the "Oort Cloud "so Rosetta and Phil could learn more. Then at the next passage close to the Earth, they would return, bringing further and more complete knowledge to the great satisfaction of the scientists, and of the whole world.

Rosetta accepted the proposal of the comet, and landed on its surface, thus beginning a long journey.

From that moment, the whole world started to wait for the return in a few years, of Rosetta, and Phil, and the comet that for brevity we shall call GERA...

So I told my grandson Francesco, still in pre-school age, this great adventure, generating enthusiasm, and satisfying his questions.

Editor's note: remember your friends at ESA as well as those at NASA:)

Kate Doolan Australia

# Thank you Rosetta

I talk with school kids about space and astronomy. They adore watching the animations of Rosetta and Philae! They might only be under ten years old but they now know that our Solar System isn't a big scary place and given how technology progresses, they may one day have the opportunity to see those many wonders up close and in person. As for me, I won't be travelling in space, any time soon but Rosetta/Philae have woken up this jaded Spaceflight researcher/writer to the new joys of science and exploration. For which I thank you...

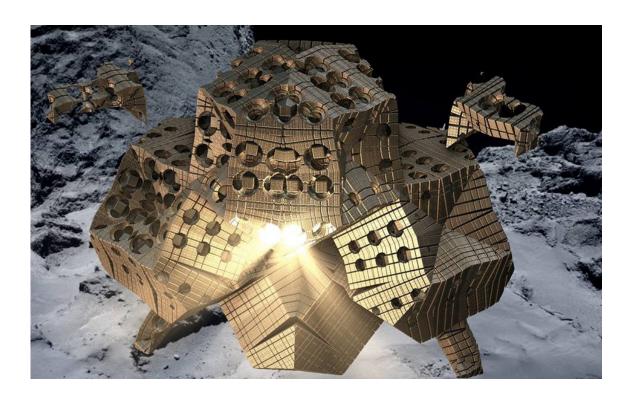
#### Fernando Vallejo

#### Fractal

Thank you for the awesome inspiration this mission has been for me and my 7yo son. We follow closely all the activity and images, and well... we'll miss Rosetta and Philae deeply. We wish them all the best in their travel along the solar system. And for all the team, a big thank you.

The image is a fractal I made, using Mandelbulb3D over a background of comet 67P/Churyumov–Gerasimenko.

cheers



Bill Smith Canada

In October 2014, living in the Pacific Northwest, I was writing my Rosetta diary for my grandchildren in London, New York and Washington, DC.

I realized I did not know the size of the COMET 67P. Was it the size of a bus, or the size of a battleship? I had no idea. All I had were the new ESA photos from long distance. But, with much research, I was able to find the dimensions from old ESA postings, and slowly I started to gain a sense of 67P's huge size.

That morning as I was looking across the Salish Sea from Victoria towards the great volcano Mount Baker North of Seattle, a vision came to me based on the Rosetta photograph. I must place the image of 67P next to an image of the volcano. Perfect. My grandchildren could now understand exactly how big 67P was.

Later in Rosetta's journey to 67P in June 2015, there was an equally important second image which triggered the development of a great idea. This image was of a cross section of the halo of the comet. To my amazement it appeared to show that Comet 67P was hollow inside.

And so my story, now known as the "Salish Space Program", came to be. Salish by the way is the name of the First Nations people living all around the great Salish Sea from Vancouver, across to Victoria and then down to Seattle. 8 million people in 55 cities now live in peace and harmony around this "magic" sea: Salish, Canadians and Americans. Here is a summary:

Imagine a comet coming in from an adjacent star system (outside the solar system), with families and Salish Animals riding inside.

The comet is enormous – the size of a mountain. Everyone lives inside the Comet in a series of enormous caves. They have lived in perfect harmony for thousands of years over the time of their journey.

You know the Salish animals – Blue Jay, Bear, Orca, Thunderbird, Raven etc. The comet is "steered" by the Salish Chief with Thunderbird as his co-pilot. As the comet passes by each planet from PLUTO to MARS, one of the animals volunteers to fly down to check it out and report back.

Their ancient map tells them they should target MARS. But they worry their information is much too old. Each planet is visited and found "not quite right". Finally arriving at their destination MARS, the Chief leaves the comet to scout out their target destination.

BUT THEN disaster happens. The only place left is EARTH so close to the SUN. This is the story of that journey.

I'd like supporters of Rosetta to feel free to download and read this children's book to themselves or their children; and help me improve it so I can perhaps get it published. So suggestions and ideas are most welcome.

Bill Smith

Victoria, BC, Canada P.S. Link to PDF is provided <u>here</u>



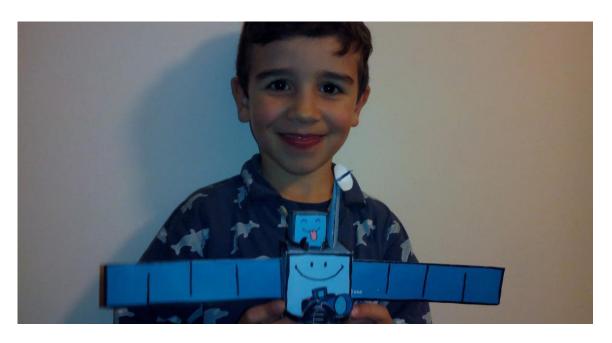
Silvia Galli

Italy

At the time when Rosetta arrived to the Comet my beautiful little sister was 5 years old. She got completely fascinated by the story of Rosetta and Philae. She was having a hard time in understanding why, without sun-light, Philae could not wake up, so my father showed her his little solar panel calculator and explained to her how solar panels work. From that moment on, Philae-the calculator was born. My sister wouldn't actually go to sleep without taking Philae-the calculator with her! I then brought her some Rosetta stickers, and that's the beautiful sky she painted for Rosetta.



Paulo & Jorge | Portugal



Back to December 10, 2014 here was five year old Jorge from Portugal, with his new Rosetta and Philae model...

Albert, Pau, Isaac & Guillem

Spain

## Philae KID's project

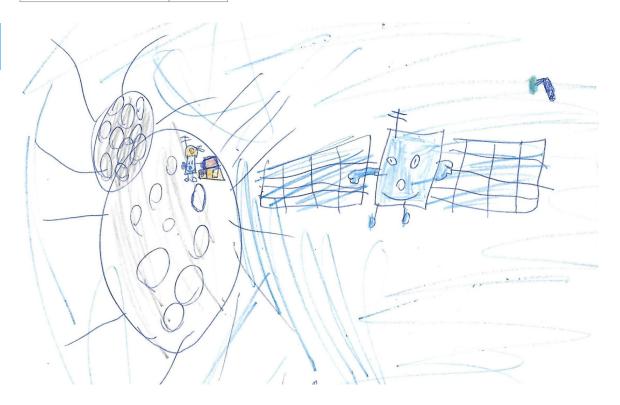
Kid's rescue mission: Philae, here we come !!!

Is there anything more exciting, amazing and incredible for 4, 5 and 6 years old children than a spacecraft arriving to a Comet? Yes, of course, a rescue mission!! On the 12th November 2014 Philae's ESA mission was successfully accomplished. The robot landed on a comet, attached itself and transmitted the surface data composition. On the morning of 14th November the battery charge was enough only for the operations of the day and contact was lost at 00:36 UTC on 15th November... ... And our history begins here: three young aerospace engineers (our son Pau-4, and his cousins Isaac-6 and Guillem-5) had a great idea, prepare a new Philae brother to help him charge his batteries again and send more information to earth... This is the adventure video that we want to share with all you, and thus bring them to the amazing days we pass with this brilliant ESA project:





Amanda Groombridge UK



Photograph taken of the Picture drawn by Annabelle, age 7yrs. She wanted to say Thank you to the Team for all the news and pictures. (I hope this link works, Thanks for your help:-))

**Cristian** Italy



This is the image that Cristian wanted for his 5 years Happy Birthday Cake: Rosetta inspires new and old generations.

**Heather Marchlewicz** 

### Kailie and Philae

My daughter, Kailie and I have been following Rosetta and Philae since their approach to Comet 67P. She, then 6, became engrossed with the project and wanted to know all she could about the two. The Rosetta & Philae cartoons helped her grasp what was happening, she loved them and watched them over and over. We watched as Philae descended to 67P, we read as he bounced, and poured over the science he did return, she mourned when the search for him was called off, and cheered when he was found just weeks ago. Philae and Rosetta were huge stepping stones in her love of space exploration, travel and information. The Rosetta & Philae plush would be an amazing addition to her collection, and just in time for her birthday!







**David Olivos Sánchez** 

Mexico

# ¡Hola! ¡Saludos desde México!

Queremos compartir con ustedes como ha marcado nuestras vidas y como marco nuestro proyecto de divulgación de la astronomía, la misión de Rosetta y Philae.

En nuestro país, hace falta mas divulgación de la ciencia, sobre todo de la astronomía, tenemos solo 230 astrónomos de profesión actualmente! Por ello, varios jóvenes, formamos una agrupación de nombre Ne-notoka Cofame, la cual da vida al proyecto "Acercándote a la Ciencia". En este proyecto pudimos adquirir un planetario móvil para proyectar de forma gratuita diversos vídeos de astronomía. El vídeo mas popular que se proyecta en el planetario, es la historia de Rosetta y Philae. Realmente cautiva ver esa historia, te vuelve parte de ella, lo cual es fabuloso para interesar a los pequeños en acercarse a la ciencia. Cuando los pequeños salen de la proyección, arman el modelo de papel de Rosetta y Philae para que lo lleven a sus casas y les cuenten a sus familiares y amigos lo sorprendente de ver viajar por el cosmos a estos azules amigos.



Viendo el gran impacto que Rosetta y Philae causan en los pequeños y ya que en la familia de Ne-notoka Cofame estamos enamorados de estos azulitos, hemos decidido nombrar a nuestro planetario en honor a esta gran misión: Planetario Philae R1.

Extrañaremos en demasía esta misión que, si bien son solo maquinas, para muchos de nosotros significan mucho mas que eso.

Rosetta y Philae, los llevaremos siempre en nuestra mente y nuestros corazones y ahora también, con mucho honor, en nuestro planetario. Sabemos que inspiraran a nuevas generaciones a descubrir mas de nuestro fantástico universo.

¡Gracias por todo!



#### Hello! Greetings from Mexico!

We want to share with you how the mission of Rosetta and Philae have shaped our lives and our science outreach project.

In our country, we need more dissemination of science, especially astronomy, we have only 230 professional astronomers today! Therefore, a group of young people formed Ne-notoka Cofame, giving life to the project "Approaching Science." In this project we were able to acquire a mobile planetarium to project a variety of astronomy videos for free. The most popular video projected in the planetarium is the story of Rosetta and Philae. It really captivates to watch that story, it makes you be a part of it, which is fantastic to interest kids in approaching science. After kids leave the projection, they assemble the paper model of Rosetta and Philae so that they can take it to their home and tell their relatives and friends how surprising it was to watch these blue friends travelling through the cosmos.

Seeing the great impact that Rosetta and Philae create in the kids and since in the family of Ne-notoka Cofame we are in love with these blue spacecraft, we have decided to name our planetarium in honour of this great mission: Planetary Philae R1.

We will miss this mission a lot because, even if they are only machines, to many of us they mean so much more than that. Rosetta and Philae, we will always carry them in our minds and our hearts and now also, with great honour, in our planetarium. We know that they will inspire new generations to discover more of our fantastic universe.

Thanks for everything!

#### Nelion, Sendeyo & Katrine Plesner

Denmark / Bangladesh

When we started to read about Rosetta and Philae (drawing) my son was 5 years old. The Rosetta Mission became a love story of a child - and of an adult. It generated all the big question of the beginning and the end: where do the comets come from? Where does water come from? Where does the universe begin? Where does it end? We followed Philae's explorations and felt sadness and sorrow when Philae went into hibernating. We cheered when Philae woke up half a year later and sent signals to Earth. We got uttermost excited when Rosetta spotted Philae a year on. My son was then 7, and for his deep emotions one question caused continued pain: Would Philae never come back to Earth? Would nobody bring him back? Would he stay forever alone far far away in the empty space? Later Rosetta's descent added to this question, and even though we dearly miss Philae and Rosetta, we have reconciled knowing that they are now together on the comet they were designed to explore, and they fulfilled their life mission. We now talk about Halley's comet. My son will be 53 years old, when it returns. Might Halley become a destination of a manned comet mission? Will somebody human step out onto a comet one day? Time will show. For now, thanks to the Rosetta team for the incredible engineering art and for letting us be part of this extraordinary space adventure – we have enjoyed it all way through!





Rosetta's final descent into the crack (follow the red dotted line) and Philae fast asleep besides his 4 gold medals, 2016, by Nelion Plesner, 7 years old.

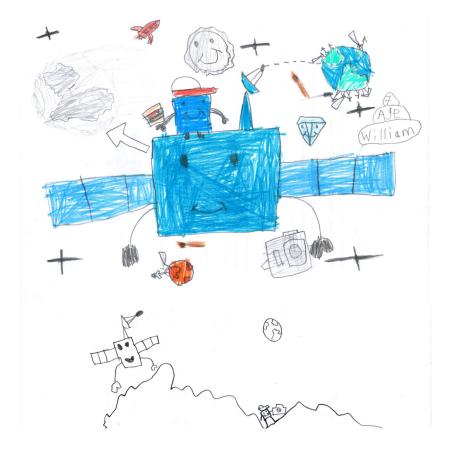


Rosetta's Launch 2004 by Nelion Plesner, 7 years old.



Rosetta's Launch 2004 by Sendeyo Plesner, 4 years old. Ground control with receiver dishes to the left, two launch rockets and mother ship carrying Rosetta and Philae to the right, taking off with a lot of fire beneath. Thank you Rosetta team!

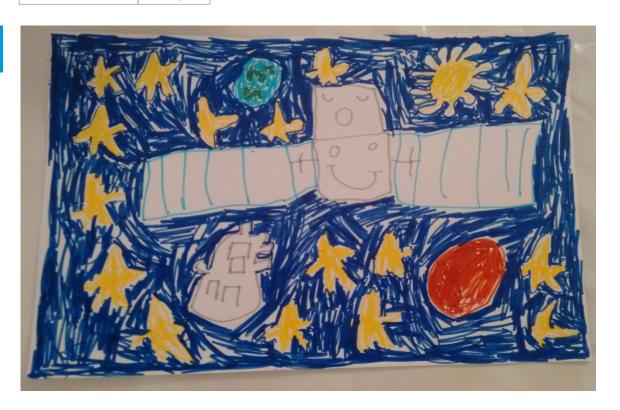
William S Germany



Thank you for inspiring our children!

Fabio Mancinelli

Italy



I told my daughter Marta about Rosetta and Philae in 2014 when she was almost 4 years old. It was when Philae landed on the comet. We watched the beautiful cartoons made by ESA. We followed Rosetta's discoveries from time to time and last week I told her that Rosetta joined Philae on the comet. We watched again the full series of cartoons describing all the mission, and she made this beautiful drawing picturing the two friends wandering in space. She's almost 6 years old now and when Rosetta and Philae were launched she was far from even being born. I hope that one day she could join the effort for space exploration... Or maybe just paint it, whatever makes her happy:) Thank you for the ride and we are looking forward to your next endeavours!

Robin



Raphael & Aurora wake up with their huggable Rosetta & Philae! After visiting the ESA/ESTEC open day last weekend, Raphael (2 yrs) says he wants to 'fly the rocket to Rosetta & Philae and bring them hugs & kisses'.

Cláudio da Silva

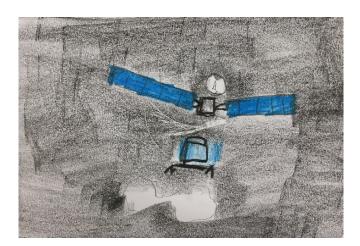
Brazil



The story of the epic mission of the Rosetta probe and the little robot Philae to the cute comet Churi has given me opportunities to teach many things to my 4 years old son, José. The most difficult to explain is that adults may cry with happy stories.

#### Rita Negral Ortiz de Landaluce

Spain



We were very sad at school the day Rosetta landed onto the comet. Me and my friends made a funeral during the playtime at school. We buried Rosetta and Philae inside two small pits, covered them with sand and left two small pillows made of dry flowers for them to rest peacefully. I also did this drawing when I arrived home that evening.

Rita Negral Ortiz de Landaluce 7 years old

#### **Dhruv Bhamidipati**

**Ireland** 



Hi...

My name is Dhruv Bhamidipati and am 11 years old and I live in Dublin, Ireland... The Rosetta Mission has brought a whole new life into space and exploration.

The Mission has taught me many interesting facts about the C-G comet, the dishwasher sized spacecraft and lander and its adventures when Philae got lost and was eventually rescued...

Check out 'Rosetta and Philae' which eventually landed on my laptop in the end during the 'Space Week' this week !!!...:)

**Iratxe Etxebarria** 

Spain





Luigina Meneghesso

Italy

## A SCUOLA CON ROSETTA!

Dopo una prima falsa partenza ti sei armata di pazienza e tra gli applausi della folla con un guizzo partivi a molla. Hai raggiunto il cielo in fretta portando Philae in spalletta. Son passati giorni, mesi, anni e senza troppi affanni, hai raggiunto la tua meta: una splendida stella cometa. Ci hai svelato tutti i suoi tesori attraverso foto, numeri e rumori. Ora dopo tanto duro lavoro a te e a Philae diciamo in coro: "Grazie! Non vi dimenticheremo e guardando il cielo vi penseremo!"

Classe IV A Scuola primaria "A. Manzoni" Busto Arsizio - VA Italy



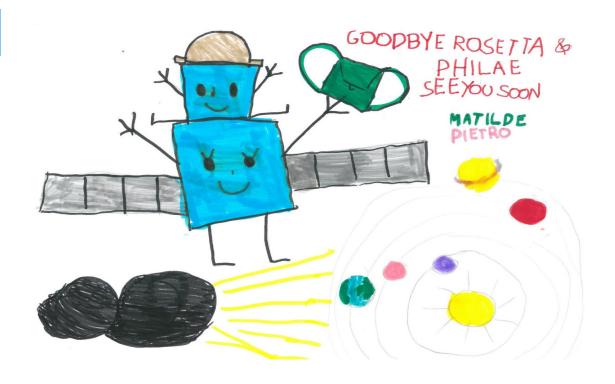
#### AT SCHOOL WITH ROSETTA!

After an initial false start you armed yourself with patience and amidst the applause of the crowd with a jolt you sprang away. You have reached the sky in a hurry carrying Philae on your back. Days have passed, and months and years and without too much trouble, you have reached your goal: a beautiful comet star. You revealed us all its treasures through pictures, numbers and sounds. Now after so much hard work to you and to Philae we say in chorus: "Thank you! We shall not forget you and looking at the sky we'll think about you! "

Classe IV A Primary School "A. Manzoni" Busto Arsizio - VA Italy

Andrea, Francesca, Matilde & Pietro Cammarelli

Italy



Dear #Rosetta and #Philae,

Thank you for being such an integral part of passing down my fascination for space exploration to my young children, Matilde and Pietro.

I tried many times in the past (without success) to encourage a curiosity for space, and admittedly I most likely failed because they were too young, but on 30 September, the last day of your extraordinary mission, that all changed.

That afternoon, I sat with my 6-year old daughter and 4-year old son, and watched all of the episodes of #OnceUponTheTime. I saw my children – a sister and a brother, just like Philae and Rosetta – immediately fascinated by the inherent romance and poetry that this mission has exhibited. Needless to say, by the end we were all crying on the couch when Rosetta closed her eyes.

My children were very curious, and asked if Rosetta landed close to her brother and if she could still communicate with us. I told them the truth, but omitted some of the details. Similar to the end of the series, my version was much more "child-friendly" than the reality of Rosetta crashing into a comet, and as far as my children are concerned, Rosetta and Philae are sleeping until they are close enough to the sun to regain the energy they need to wake up and play together again.

My daughter, Matilde, appeared concerned and asked me if someone was planning a recovery mission. When I explained that no one would recover the two siblings, she looked up at me with her tear-streaked face and exclaimed, "Daddy, I will recover Rosetta!" The look of determination in her eyes made me swell with pride. I cannot predict what Matilde and Pietro will decide to study in the future, but I am very grateful to this program for providing such a powerful moment for my family. During this week, their curiosity has piqued and they have been asking me a lot of questions relating to the universe and the solar system. Their retention for concepts like the stars, planets, satellites, and the earth's rotation has been both surprising and rewarding; it is truly magical when you see your child really grasp these concepts and become empowered by the knowledge they have gained.

Our family appreciates your commitment to educating and exposing young people to space exploration, and we are especially grateful for the creation of the story of Rosetta and Philae. We appreciate your contribution to future generations and would like to extend our sincere gratitude to the #ESA and everyone that made this incredible story possible – you have helped create lasting memories in our family, and have opened the door for years of space exploration in our household. Thank you again for all of the good work that you do.

Andrea, Francesca, Matilde e Pietro Cammalleri Alessandria - Italy Elisabetta Collovigh

Italy

#### STORIA DI UN'AMICIZIA "SPAZIALE"

Dopo un atterraggio ben riuscito sulla zona prescelta della cometa 67P/Churyumov-Gerasimenko, Rosetta saluta la Terra e inizia una nuova avventura.

Ai confini del Sistema Solare, dove ora si trova, vede altre comete: brilla di più quella di Halley e lì vicino c'è la sonda Giotto, nonno di Rosetta che la saluta.

Lei è felice perché non si sente sola; le arriva anche un saluto da suo cugino Stardust: sono proprio tutte lì le sonde che l'hanno preceduta, nessuna è andata perduta! Pur non avendo più contatti con la Terra, Rosetta dispone ancora di tutti gli strumenti che le servivano per lavorare e sono ancora utili perchè la cometa 67P merita di essere esplorata a fondo.

Cerca il suo computer e vede sullo schermo uno strano essere appiccicato che lo osserva incuriosito.

I loro sguardi si incrociano e ..... entrambi urlano per la paura.

E' Rosetta a chiedere per prima:

"E tu chi sei? Cosa fai sullo schermo del mio pc?"

"Sono l'unico abitante di 67P, sono l'origine della vita sulla terra, sono tutto ciò che hai scoperto e fotografato!"

Rosetta rimane senza parole, sa di aver a che fare con un essere importante: ahhh se gli scienziati potessero vederlo! .....

Tra i due nasce una collaborazione, Rosetta parla della sonda Philae, che dorme in un crepaccio della cometa dopo essere atterrata tempo prima e... magicamente, lo "Strano Essere" la risveglia.

Le due sonde si abbracciano felici di stare di nuovo insieme e decidono di dare un nome allo "Strano Essere": lo chiamano E.P. che nel linguaggio spaziale significa "Grande Amico".

Philae e Rosetta, guidati da E.P. verificano che la cometa sulla quale si trovano è proprio come l'avevano fotografata: rocce bianche luccicanti come montagne piene di neve, crateri profondi come laghi alpini, gas grigi come folta nebbia, lastre di ghiaccio come piste di pattinaggio riempiono la sua superficie.

Scoprono il piacere di giocare insieme a nascondino, di rotolare nei crateri, di scivolare sul ghiaccio.

E.P. è felice di stare con loro e vive la gioia dell'amicizia.

Ora, sulla cometa, c'è un elemento in più: proprio l'amicizia che è sempre più rara sulla Terra.

Trascorrono velocemente sei anni; è tempo di rivedere passare nel cielo la cometa 67P.

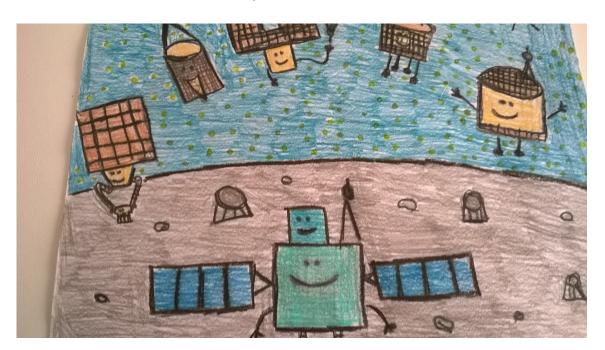
Gli uomini sono pronti per osservarla e hanno a disposizione gli strumenti più sofisticati.

Chissà che fine hanno fatto Philae e Rosetta?

Più la cometa si avvicina alla Terra, più nitida appare l'immagine delle due sonde. Con loro c'è lo "Strano Essere" e tutti insieme spargono sulla Terra una polvere magica: la polvere dell'amicizia.

Gli scienziati si abbracciano, il mondo all'improvviso si addolcisce, si scopre migliore. Dalle comete pare derivi la vita e, dall'intesa tra Philae, Rosetta e E.P., è nata l'amicizia profonda, quella che sulla terra si stava perdendo, quella che scalda i cuori! La storia continua .....

Gli alunni di classe IVB della Scuola primaria "Alessandro Manzoni" di Busto Arsizio



#### HISTORY OF A "SPACE" FRIENDSHIP

After a successful landing on the chosen area of Comet 67P/Churyumov-Gerasimenko, Rosetta says bye to Earth and begins a new adventure.

At the edge of the Solar System, where she is now, she sees other comets: Halley's comet shines the brightest, and nearby there is the Giotto probe, Rosetta's grandfather, who greets her.

She is happy because she does not feel alone; a greeting comes from her cousin Stardust; there are all the probes that have preceded her, none are lost.

Despite not being any longer in contact with Earth, Rosetta still has all the tools she needed to work and they are still useful because Comet 67P deserves to be explored thoroughly.

She looks for her computer and sees a strange creature stuck on the screen, looking at her curiously.

Their eyes meet, and ... both scream in fear.

It is Rosetta who asks first:

"Who are you? What are you doing on my computer screen?"

"I am the only inhabitant of 67P, I am the origin of life on earth, I am all that you have discovered and photographed!"

Rosetta is speechless, she knows that she is dealing with an important creature: ahh! if scientists could see it!

The two start a collaboration, Rosetta talks about the Philae probe, sleeping in a crevice of the comet after it landed long ago ... and with a stroke of magic, the "Strange Creature" wakes him up.

The two probes hug themselves, happy to be together again and decide to give a name to the "Strange Creature": they call it E.P. Which, in space language, means "Great Friend."

Philae and Rosetta, guided by E.P., verify that the comet on which they are located is just as they had photographed it: gleaming white rocks like mountains full of snow, deep craters like alpine lakes, grey gas like heavy fog, and ice sheets like skating rinks cover its surface.

They discover the pleasure of playing hide and seek together, rolling in the craters, slipping on the ice.

E.P. is happy to be with them and to experience the joy of friendship.

Now, on the comet, there is one more element: friendship, which is increasingly rare on Earth.

Six years quickly go by; it is again time to see Comet 67P in the sky.

Humans are ready to observe it and they have access to the most sophisticated tools. Who knows what happened to Philae and Rosetta?

The closer the comet approaches Earth, the sharper the image of the two probes. The "Strange Creature" is with them and together they spread magic dust on Earth: the dust of friendship.

Scientists hug one another, the world suddenly becomes sweeter and discovers that it is indeed better.

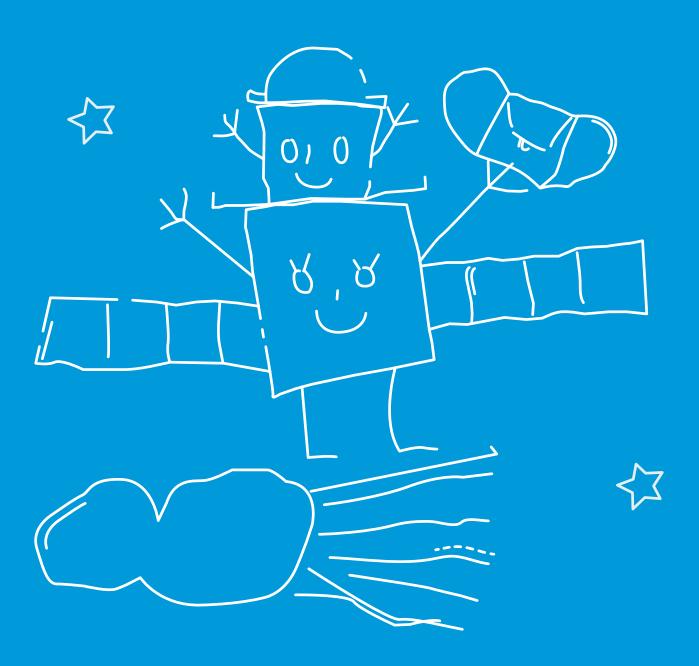
It appears that life originates from comets and, from the fellowship between Philae, Rosetta and E.P., friendship was born, the deep kind of friendship that was about to disappear on Earth, the type that warms the heart.

The story continues ...

The pupils of class IVB of the primary school "Alessandro Manzoni" in Busto Arsizio

# 66 Rosetta Legacy

# 04. INSPIRING STUDENTS



#### E. Calabrese

Je suis étudiante et je m'interesse à la mission rosetta depuis le collège. C'est une mission spatiale juste exceptionnelle sur le plan scientifique et technologique.

J'ai étudié Rosetta pour un projet d'un an (soutenance orale, dossier, maquette de Rosetta et Philaé avec la comète 67P) et également pour un projet informatique mené pour mon baccalauréat. J'ai eu le plaisir d'être aidée par un astrophysicien qui travaille sur cette mission.

La mission Rosetta a confirmé mon choix de faire des études scientifiques dans le domaine de l'astrophysique.

Un grand bravo à toutes les équipes ayant travaillé sur cette mission!

I am a student and I am interested in the Rosetta mission since high school. It is an exceptional scientific and technological space mission.

I studied Rosetta for a one year project (oral defense, written essay, model of Rosetta and Philae with the comet 67P) and also for a computer project conducted for my baccalaureate. I had the pleasure to be helped by an astrophysicist who works on this mission.

The Rosetta mission has confirmed my choice of pursuing scientific studies in the field of astrophysics.

Congratulations to all the teams who worked on this mission!

#### Sam Leakey UK

The influence of the Rosetta mission in the last year of my life has been profound. At the end of September a year ago I met the supervisor of my master's project Dr Stephen Lowry for the the first time to discuss the topic of my research. I requested to work on imaging data from Rosetta, knowing already that Dr Lowry was associated with the OSIRIS instrument. So then I spent the year working on constructing a shape model of the comet nucleus for my thesis. In November I applied to the YGT programme at ESTEC and after interviews, I heard in April that I had been offered the job. I'm now writing this from my apartment in Leiden after having spent the day working at ESTEC struggling to really comprehend how this could all have happened.

One thing is for certain though, that is: without Rosetta none of this would have happened...

#### **Aga Rosa** Poland

Hi, my name is Aga, I live in a small town in Poland. I would like to tell you about how the Rosetta mission influenced my life.

I fell in love with astronomy at the age of six: I asked Santa to get me a telescope for Christmas and I've been spending my pocket money on books I still have today. Everyone kept telling me I couldn't become a scientist, because people like me just don't become scientists: I'd have to be born in the USA and so on...

A couple years later I've learned about the Rosetta mission. I've been following its progress and I was moved seeing tears on faces of ESA personnel when the probe sent signal to Earth. I was proud of what Europe has achieved. I've started telling people about the mission and I've written an article about it to show what marvels are done by, among others, my countrymen. I though that if we can land a probe on a comet dashing through space, why would my dream of becoming a scientist remain a fantasy?

The ESA inspired me and the Rosetta mission launched me towards starting physics studies.

Mike Maher

#### Focus and Motivation

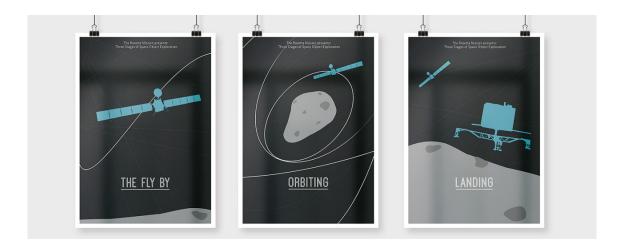
For me, this is my generation's equivalent of the moon landing. I discovered this mission around the same time I began my Open University study of Mathematics and Physics, so it provided a massive boost to my motivation as this mission is exactly the kind of research I one day would love to be involved with professionally. I also used the subject to give a presentation as part of a training course with work and because the subject is so fascinating I managed to pass that part of my course with almost 100% marks!

So overall, the mission has helped me better myself beyond anything I ever thought I would be capable of even just a few years ago.

#### **Christiane Tänzer** Germany

When I first heard of the plan to land a little lander on a comet, I thought, 'what an inconceivably bold thing to do – and sort of doing it blindfolded too!' But I had followed ESA's work for some time now and I was sure it would somehow work out. I secretly watched the live stream of the team waiting for the signal to come in during one of my study classes. I'll never forget when the whole control room burst out into joy and excitement – I did too and a few classmates stared at me, confused. Since I hadn't found a theme for the task at my typography class yet, I decided to do a poster series on the mission. I really like how it turned out:)

I kept following the mission on social media. I especially grew fond of the beautiful animations telling the story of Rosetta and Philae. I've never seen science communication done so well! The mission also inspired me in my future career choices. So seeing it come to an end does not make me feel sad but hopeful and excited about what is still to come. There is so much to explore! So much to learn! Secretly I'm hoping that one day someone out there finds the two on the comet, sleeping side by side in their sleeping bags in the hideout...



**Ríona Stokes** Ireland

# The Sky Can't Be The Limit, When We've Footprints On The Moon

I struggled for the first 15 years of my life with fitting in. I'm not saying that makes me special, everyone has a hard time finding themselves, but to me, this was everything. I had no idea where I was going, I had no plans for the future, I couldn't picture myself happily in any area at all, and if I'm being honest, I didn't see myself being around for much longer. I was tearing myself up inside, and I truly thought I had no hope.

But then things started popping up in the media about Philae, wishing the lander a happy first birthday on Comet 67P/Churyumov-Gerasimenko. And that was all it took to start the turn-around. I started researching the Rosetta mission, I poured over every piece of info I could find, I gushed over the cute animations that ESA made on YouTube to spread the word about the mission. I printed out and glued together the paper Rosetta model on the ESA kids website (not even ashamed). I learnt exactly how spell Churyumov-Gerasimenko in a few seconds flat, and spoke excitedly about all I had discovered to anyone who would listen.

From Philae and Rosetta, I found my calling. I'm going to study mechanical and chemical engineering, and I'm going to be the first Irish astronaut.

The wheels are in motion. Countdown sequence initiated. This is the first time in my life that I've actually seen myself as something, realistically. This isn't just a dream for me, I'm not going to "put it on hold" while I find a "realistic and practical" career. It's all or nothing. I'm going for this, at supersonic speeds.

Rosetta, Philae and Comet 67P/Churyumov-Gerasimenko, you've all inspired me. You'll continue to hold a special place in my heart, even after you've stopped transmitting to Earth. I can't thank you guys enough.

Ivan Marijanović

Serbia

#### The Rosetta Legacy

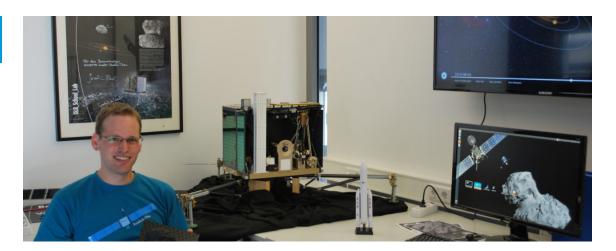
Rosetta, Philae and their mission to Comet 67P/Churyumov–Gerasimenko has inspired me so much that I decided that it will be my senior project last year in Mathematical Grammar School, Belgrade, Serbia, a highly elite school in my country specialised for students talented in mathematics, physics and computer science. And to my surprise it was awarded as the best project in astronomy. I provided the link of the PDF file with my project (which is in Serbian though), as well as the proof that it was awarded as the best.

P.S. I would like for my name to appear in the contribution since it is also on the links.

The best project in astronomy, Mathematical Grammar School, Belgrade 2015

Mission Philae, senior project in astronomy

Kind regards, Ivan Marijanović **Stefan** Germany



My first memory of the Rosetta mission was the exhibition "fut[o]ur -ForschungsRegion Braunschweig erleben" at the Landesmuseum in Braunschweig in the year 2000. Four years later Rosetta and Philae began their incredible journey. Fast forward to January, 13th 2014. Meanwhile changing from school to university I am waiting together with at least one hundred people in the entrance hall of the "Haus der Wissenschaft" for Rosetta to wake up again after her long time of deep space hibernation. Prof. Block (DLR Braunschweig), Prof. Glassmeier (IGEP, TU Braunschweig) and Prof. Michalik (IDA, TU Braunschweig) talked about their contributions to the Rosetta mission while we were all waiting and watching the live stream from ESOC Darmstadt. After a nerve-wracking delay the relief of Rosetta calling home was even greater. A little bit more than half a year later I started working at the DLR\_School\_Lab as a student job. At the DLR\_School\_Lab we invite pupils from secondary schools to get a hands-on experience in space and aerospace. All our experiments at the DLR\_School\_Lab are connected to the science our DLR colleagues are conducting in real life. Because DLR Braunschweig built Philae's structure we invented an experiment for pupils covering the Rosetta mission. I was lucky becoming the student responsible for our Rosetta experiment. Since then in total we told Rosetta's exciting adventure at comet 67P to at least 2000 pupils. Especially Philae became dear to me. Even today I still have to brush a tear away when watching "Once upon a time... Living with a comet" when Rosetta spreads the news that Philae called again. All the time after Philae's landing I told the pupils that I am absolutely convinced Philae will wake up again. I was really happy and deeply touched when Rosetta finally received a signal from Philae.

Now the mission is coming to an end. We will continue telling Rosetta's exciting story at the DLR\_School\_Lab but what did it to me? I have almost finished my bachelors in electrical engineering. Being interested in space as along as I can remember Rosetta inspired me to adjust my studies a little bit. Instead of continuing electrical engineering for my masters I will change to electrical systems in transportation, space and aerospace with a focus on space! There is still so much more to discover and I would love to contribute. Anyone else here wanting to investigate Jupiter's icy moons? Goodbye Rosetta & Philae!

Editor's note: Rosetta woke up on 20 January 2014.

Thomas Italy



I was wondering what could I do for my participation to the Famelab competition in Trieste (Italy), in which there is a challenge between students and researchers from the age of 19 up to 41, where each person has 3 minutes to explain a scientific subject or a concept, without using slides and complex materials.

While I was going to the swimming pool, one evening a few days before the deadline for registering to the competition, I thought that it would have been a great idea to be myself the Rosetta mission! I registered a voice message in order not to forget about this idea.

As I had studied the mission for the exam of "Space Physics" at the University, I already knew many interesting things to tell about the Rosetta mission...the difficult part was to be able to stay within the 3 minutes.

I divided my presentation into two parts: first of all I explained how to build a spacecraft such as the Rosetta mission, dressing myself as the Rosetta spacecraft, using colored felt, I sewed and designed it according to the real instruments, and build Philae from paper, thanks to Paper Replika, and 3D printing the nucleus of the comet 67P thanks to the SciFabLab at the International Center for Theoretical Physics in Trieste.

I got the third prize from this competition, and then used the same costume for other events, such as the Trieste Mini Maker Faire where I explained to children how to build a spacecraft.

This mission has been really important to me and I will really miss fresh images from Rosetta or interesting daily news from this beautiful Mission!

Thank you ESA!

#### Ludwig Schischka



I decided to write my prescientific work about one of the most interesting missions – The Rosetta Mission. My work is about the journey to the comet, in particular, about the launch, swing-bys and the landing.

Nathan Barba USA

# How the Rosetta mission changed my life... let me count the ways

The mission to orbit and land on a comet has forever changed my life. It has been so influential that I chose to return to school, become an engineer to one day work on a mission just like this one. I know this is an ESA mission but it was a worldwide effort to learn more about comets and the origins of our existence.

I first got hooked when I visited JPL in 2014 and met my favorite engineer Mr. Art Chmielewski and Dr. Claudia Alexander who worked on the mission through JPL. The very next day I attended a NASA Social "Preview a comet flyby". During this event I learned all about comet C-G and this incredible mission to land a dishwasher sized robot on top a comet that was speeding and rotating in space.

I remember thinking this is exactly what I want to do in life. I wanted to be at the forefront of exploration and helping humanity to understand these hard questions, so I asked Art "what kind of degree do you have because I want to be like you and work on a mission like Rosetta". I was so moved that I went home to Arizona, where I was studying physics, and changed my major the following semester to become an engineer. I continued to follow the mission very closely and even visited elementary schools sharing the story of the Rosetta Mission. I am now a senior at ASU about to finish my degree. I currently work on a spacecraft team as an engineer to visit the moon and look for hydrogen. I have visited JPL half a dozen times to get as close to the action as possible. I have been fortunate enough to visit for all the talks related to Rosetta and even attended the JPL landing event for Philae. This mission has changed my entire life trajectory and I have dedicated myself for years to one day work on a mission just like Rosetta. It has been years of work and I wouldn't change my mind for anything. I have met some great people as a result and have shared my experience with others in the hopes of inspiring them in the way Rosetta has inspired me. Thank you for sharing this mission with the world. I was sad to see it end but have solace in the fact another new exciting mission is on the horizon.



for-all-mankind

USA

# Crossing borders, oceans, and cultures, Rosetta's landing inspired American college students

Rosetta's mission of discovery marked the first time in my life that I saw a robotic mission first-hand inspire a large group of people. On that November day when Philae set off to land on Comet 67P/Churyumov–Gerasimenko, I was in my final semester of university at the University of South Florida, St. Petersburg.

As an American, news of European space missions rarely ever made the news, if at all, so I prepared to watch the landing on my laptop in the common area of our student center. To my complete surprise when I walked in, a projector had turned an entire wall into an almost theater-sized screen, with the ESOC control center looming large. The room was full of over a hundred people, all college students, watching intently as Philae approached the comet.

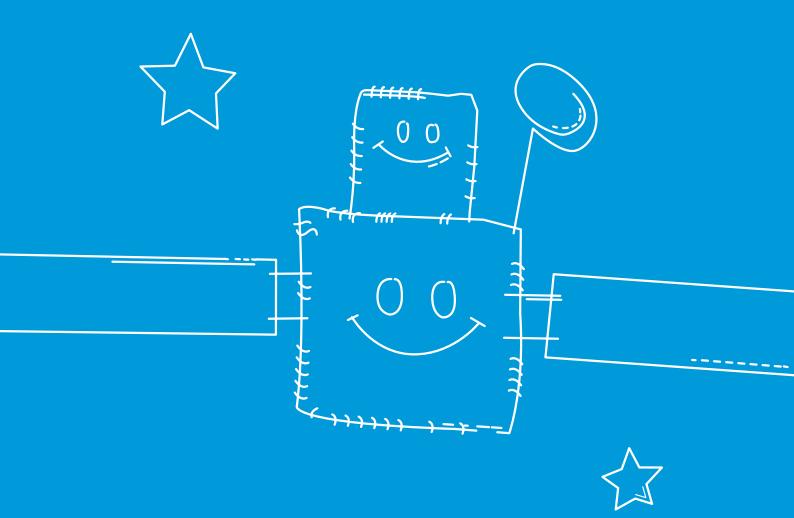
This university is a satellite campus, and did not have any STEM majors, so students with a passion for science and technology – especially aerospace – were extremely hard to find. But as Philae's altitude slowly diminished, the curiosity of those around me increased. Business majors, art majors, language majors and countless others all watched intently as the ESOC controllers monitored their consoles.

Then – it happened. Philae landed. No sooner did ESOC break into celebration at Philae's touchdown did the entire room at the university erupt into celebration as well. Cheers of "We did it! We landed on a comet!!!" and "Way to go, Europe!" were heard throughout the entire room as we continued to watch the live stream. In the weeks that followed, Rosetta's mission and Philae's landing were talked about in the classrooms and hallways of our school, something that I have yet to see since.

For me, I've never seen such a large group of people be inspired by a space mission in the way Rosetta did. It brought the exhilaration of discovery and the excitement of space travel that I feel every day to a group of people who normally would have never encountered it. Of the entire Rosetta mission, that moment will be forever etched in my brain. Seeing Rosetta's mission end was very emotional because I realized first-hand the power a space mission has to reach out across borders and across cultures to unite us all.

# 66 Rosetta Legacy

# 05. INSPIRING TEACHERS



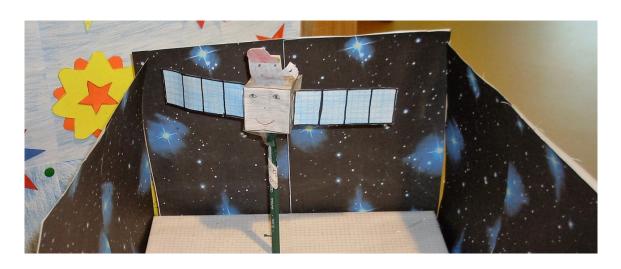
Rosa Maria Fiorini Italy

Dear Rosetta, I am an Italian teacher and with my pupils I followed your mission impossible! Thanks for all that you did to find out. Sweet dreams.















Silvia (Phoebes)

Italy

## Goodbye Rosetta! Goodbye Philae!

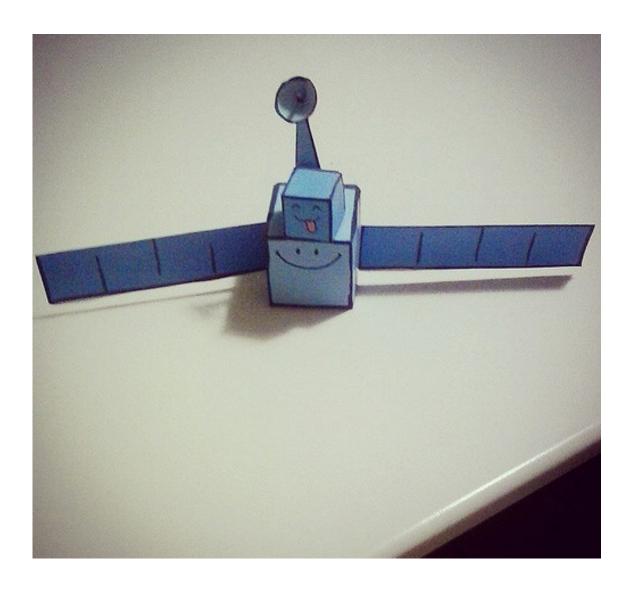
I'm a Science teacher, and I found Rosetta mission very inspiring for my work. I organised interactive lessons with my students, thanks also to all the material available on ESA site and YouTube channel.

I even used Rosetta during my final exam for my teacher certification. I followed both Rosetta and Philae on twitter, and I was always so thrilled to read news and updates. I still remember how exciting was back in June 2015 when my phone noticed me Philae waking up from hibernation!

I'm a little bit sad that the mission it's almost at its end, but I know I'll be able to use Rosetta, Philae and the fantastic results achieved by them and the amazing team working with them, for my teaching for a long time in the future.

So thank you all for this great opportunity, for this wonderful journey, for the remarkable science, and for all the fun you gave us.

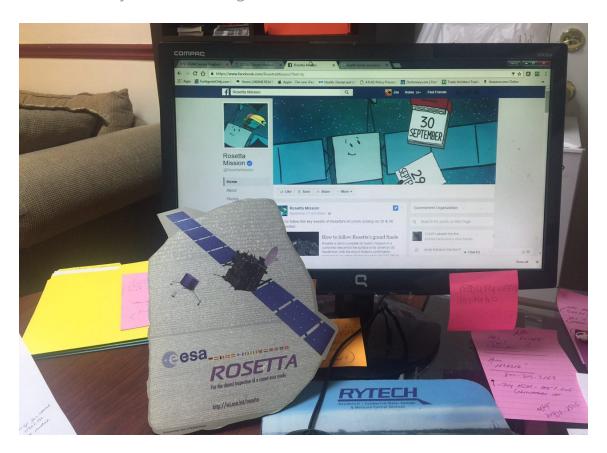
Goodbye Rosetta! Goodbye Philae!



Jim Stryder

**USA** 

Well done, have followed mission with outreach ever since launch, to thousands of K-12 students, mostly in Florida (USA). If it hadn't been for my enthusiasm and support, many wouldn't even have known about Rosetta. Now, they do, it was fun all the way. A "collectible" I have of sorts, the Rosetta "Mouse Pad", is indeed one of a kind... Not many of these "floating" around here that's for sure!



Richie Daly Ireland

I've always been a space enthusiast. It's often a lonely place to be! I'm privileged to be a primary school teacher and when I introduced Rosetta and Philae to the 11 year olds in my class I was amazed by their reaction. It felt like a true link had been found between their studies and the amazing achievements of scientists on the other side of the road. They bought into every update, every detail, every high and every low. They learned with Rosetta and Philae, not necessarily about them.

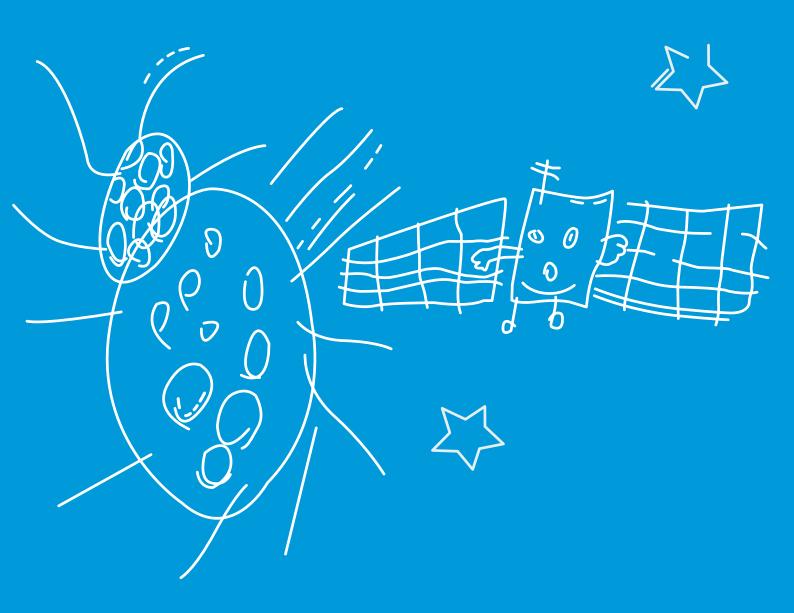
R&P took on human-like significance. They say machines carry the soul of their makers and I felt when watching the kids soak up the experience that this was true. The ESA staff, through their accessibility and enthusiasm to pass on their knowledge and investment in this project, brought the children with them on R&P's journey. To

see a group of children roar 'Wake up Rosetta!!' with innate enthusiasm was special.

To see the youngest of children enthralled by the amazing YouTube animations and engage in the process at their own level was special. Most special of all for me was to see a gang of 11 year olds burst into the classroom shouting 'Philae's down!!' and urging me to put the photos on the screen immediately. I cannot manufacture such enthusiasm in a classroom. This energy came from the hearts of the people most closely involved in the project – people like Matt Taylor who treated teachers as equals and part of the team when we met him in ESTEC, Laurence O'Rourke who took the time to keep my class updated from the heart of the mission, and Mark McCaughrean whose willingness to simply talk to those who had immersed themselves in this wonderful story on a 1-1 basis, acknowledging that those far from the mission had become part of it also in different ways. Every one of the ESA team who made the extra effort to bring those of us along who wished to travel this journey deserve all the credit. Science to many is something the other people do. ESA's team should realise that by bringing science so close to those who wished to be part of it, they've achieved something less tangible but equally powerful. I felt part of this mission. My children felt part of it. They go on now in the knowledge that there are no limits to achievement. Surely the greatest of ESA's achievements. To all of you who made the effort to take the children I teach with you, the mission has only begun. Thank you.

66 Rosetta Legacy

# O6. CAREERS AND LIFE DECISIONS



**Kartik Shah** 

## A Journey of my Life through 67P/CG

Out of every space mission, some reside in my heart and one of them is the 67P/CG because it was a successful brilliant attempt. There have been missions to comets but putting a satellite to orbit around the comet... spectacular and the Philae landing, cherry on the cake.

I am an Aerospace Engineer and I love the complex calculations associated with these missions. This mission involved a really complex trajectory and I wanted to learn to design it... moreover everything about the mission but mostly the calculations and the happiness and the winning stress... These have inspired me... and I want to be a space system engineer...

But as all said Rosetta without Philae is and always will be incomplete and I will miss them both...

**Paul** 

## A first step to a new life

Rosetta's arrival at 67P/CG came at a weird point in my life. I was at the end of a life long dream to build a company and it was backfiring on me, leaving me with loads of debts, nothing to do with my days and a feeling of void.

I've always been into space, but until this it was from a distance, I did not really understand it, but I found the whole concept of space and its exploration marveling... Rosetta was the first mission I really dug into. And from this point on it became an addiction, I had to understand everything about this mission and the underlying aspects of it.

Luck had it that a friend of mine posted screenshots of Kerbal Space Program at around the same time and got me into it. I became hooked. I've taught myself the game and reproduced all the missions I loved. First on the "normal" game, then with a collection of mods known as "realism overhaul" which make the game harder, closer to reality.

I read everything I could, took some classes online on orbital mechanics, aerodynamics and exobiology. Now I'm contemplating going back to school, getting a relevant diploma (computer science just won't do) and changing career path by applying for a job at the ESA.

Rosetta was the trigger to both getting me out of a bad slope, and giving me a new objective in life, something to be amazed by and to root for. I've built the company I wanted to (a new one), it's working properly, I love my current job and it leaves me plenty of free time that I now know how to fill.

On a side note, it also got me closer to some friends who are into these subjects and some others I got into it. Even with my mother, who was always telling me about the time she witnessed the first man on the moon as a child; we now talk more often and you can bet that when anything space related is in the news we'll have a long conversation about what's going on, the implications, the potential it unlocks.

Thank you everyone at ESA for everything you've done and inspiring me to do more. Here's to hoping I'll be one of you soon.

Renske van den Berg

The Netherlands

## RvdBird is leaving the building





Rosetta and Philae are such brave adventurers, and this was carried out so well to the public! The brave explorers gave me the last push for a career change. And now I got a job at SRON, Netherlands Institute for Space Research after being a court reporter for 18 years.

Working at communications, I am inspired to tell the public about beautiful and exciting science!

**Tomasz Bialas** 

## A hope for an exciting future

The Rosetta mission was an absolutely fascinating journey to follow. For me, it started in October 2014 with a simple educational video from the ESA – but already there, it looked like science fiction. Not only science fiction, actually – it looked like the future. Since then, when I had a bit of free time from school, I followed the mission progress. Watching the comet landing live over the Internet was fascinating and amazing, the landing, the uncertainty, the incoming data bits, the people cheering in the background, the concern about Philae's safety, the suspense waiting for radio signals.

One small bounce for Philae, one giant leap for science.

The Rosetta mission is a huge step for science and technology, but it's also a sign of hope for humanity and science, always going forward. To me, it was what rekindled my passion for science. I knew I wanted to be an electronic engineer — but now, I know I want to be part of the space adventure.

Many thanks to all the researchers, engineers, technicians, press team members, and many, many other people involved in the Rosetta mission. Thank you for the adventure. Thank you for the science. Thank you for the hope.

#### Mauric

I know that in retrospect it sounds silly, but I had a rough first half of 2014 and when I found out about the mission, it kind of helped me to stay alive. Or rather to want to be alive to begin with, so to speak. Thanks to the cute videos, awesome pictures and the unique twitter experience, I wanted to be around long enough to see if Philae makes it. And when he stopped responding I wanted to see, if he ever "wakes up". And so on. The smallest of things can make a difference.

It has been two years (time sure flies, when you are having a good time) and I am still here, so I wanted to thank you all. :)

Paulina Poland

#### Rosetta, Me and the Girl From the Radio

During a book festival I met this girl who accidentally put a sandwich on the program I was reading. I fell immediately for her although never spoke to her and knew nothing about her except that she is luckily also queer and works as a broadcaster for one of the biggest Polish radio, which I was told later. I started listening to her auditions only to find out that she is exceptionally smart and witty. And crazy about cycling. I was unemployed back then or perhaps better to say I did my time as a freelancer. While Rosetta was approaching the comet I biked through the entire city attending every cultural event, even joined a book club that I knew she somehow co-founded, hoping to meet her but never did. Couple of months passed. Around that time Planetarium in Warsaw announced that they will organize this superb event: broadcasting live from ESA headquarters during the Philae landing. I decided it was time to act. I picked a book that I liked, added a small rock I once found in a river in the shape of a bicycle saddle and wrote a letter asking if she would like to go together with me on a blind date for a comet landing transmission. And I sent it via traditional mail on her radio address. When she answered via Facebook she sounded half excited and half worried. I was perhaps overenthusiastic and over-stalkerish in all of this romantic craziness. When Philae was about to make a move on the comet, when everything was still undecided, after receiving a letter from me and still before giving her definitive answer back she hosted an audition about Rosetta and Philae, where she said that she is romantic by nature and is personally interested in this particular mission – at that moment I thought the whole pursuit was like a lottery with the smallest odds possible but in spite of my chances it looked that I won it. I will probably go on date with the smartest, most beautiful girl on the planet. Unfortunately after a few days she replied that it was too much for her, meaning: too excessive probably, too crazy. This big queer love adventure of mine was over and I don't blame her – back then I was only a weird penniless eccentric with unexplainable affection for her.

I remember writing: "Think it over, will you? Why won't you just give me a chance and meet me once (how desperate and needy, I know!) – otherwise it would be like ESA build Rosetta and put it to trash. Besides – what if you saying "no" will bring bad luck to the mission?"

And it did, didn't it? Sorry guys!

Nevertheless, it was one of the most incredible stories of my life, months spent with Rosetta, knowing that it is somewhere there, orbiting alone around a comet, unable to make contact with its companion hidden somewhere on the surface. The metaphor was so powerful!

Now I have a steady, full-time job in a book industry. Our paths crossed so many times since that time – once, during a cultural event, I was even asked by her to help her with something on the stage. And I keep thinking what if I were more patient, maybe then I could get to know her and have the opportunity to ask her out like a normal person not as a creepy girl from the internet.

But every time I hear about Rosetta or see a picture of the comet posted on Facebook from her camera I smile involuntarily and wonder if it would change the course of the space exploration history, if the Girl from the Radio said "yes" to my crazy date proposal?

Vickie Lee

#### Incredible dream from Rosetta

Rosetta comes to me as the first research job in my life and the most exciting one when I am 20. For me, these two years spending on Rosetta are a very beautiful and incredible dream.

I spent two years to study this comet. Everyday, we have so many incredible and amazing images from Rosetta which are from very far away from us. I enjoy the time spending on those beautiful images. Also I worked with the Rosetta team, attended the team meeting, and discussed with them about these strange features which we have never seen before. I should say those members in our team are so amazing and full with ideas.

When the mission is completed, I feel so amazing with what the whole group did for the whole mission. After traveling for ten years, finally Rosetta and Philae arrived comet 67P, and both of them landed on the comet! How a beautiful and amazing story/dream people have made!

When the landing of Rosetta was confirmed, I felt relieved and woke up from the dream. I should say this could be one of the most impressed work in my life!

For the public outreach, I should say the Rosetta group does a nice job since so many cute cartoons and news are made, and make so many people know this mission to comet 67P. Thank you all for your help!

Nayanee Perera UK

## Rosetta really did change my life

At the time Rosetta reached 67P, I was stuck in a job I was miserable in. I had been working in banking for the last 14 years, and I knew it wasn't for me. I dreaded getting up every morning. But I couldn't see a way out.

I still remember the day Philae landed on the comet... I had the ESA website up all day, keenly listening out for updates. I was just too excited! I couldn't concentrate on work. I was in awe of the huge accomplishment Rosetta and Philae represented. And as I spent all day following the progress of Philae, I thought to myself that I wanted to feel this excited and inspired everyday... how great would it be to feel this way about work, to do something you feel so passionate about.

The Philae landing was the start of my journey. A couple of months later, I quit my job. I took some time out to figure out what I wanted to do. Since then, I have found a job in healthcare technology – and I love my job! I look forward to work everyday. But I also changed my life outside work... took up meditation, doing more volunteering, started playing the piano again, and, of course, more time for astronomy! I've never been happier.

I'm writing this because I want the Rosetta team to know that Rosetta really has touched the lives of ordinary people, and I want to say thank you for bringing such inspiration ino my life! It really has been life changing!

#### **Daisy**

Rosetta has changed my life and made me realise my dream.

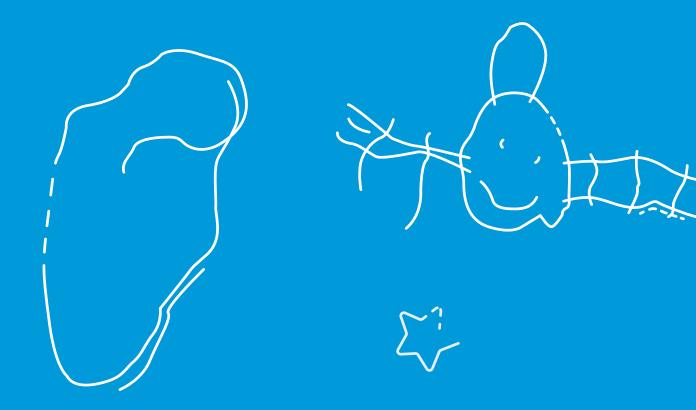
I've been interested in space and science my entire life, and I was so excited when Rosetta and Philae were going to be launched in 2004 when I was 11 years old. The internet community wasn't a thing yet, and none of my friends were interested in it.

I've followed Rosetta and Philae though every medium that was presented to me. TV, the internet and the community that started to build itself around Rosetta and Philae. I've started studying to be an interaction designer to let people experience something they otherwise wouldn't be able to. My dream however, is to build an interactive experience that will make people love a mission like this, and make people realise how great and fun these missions are.

Thanks for Rosetta ESA! I'm gonna make sure my dream comes true, and make you notice my work.

# 66 Rosetta Legacy

# 07. A HUMAN ENDEAVOUR



Megha

#### Humans and robots are a team

Rosetta mission made me fall in love with robots. When Philae landed on the planet and sent data to earth, it made me so happy as a human. This mission was loved by my 7 year old brother too. He was so sad when Philae was shut down.



Credit: ESA

Editor's note: remember Philae landed on a comet, not a planet :-)

#### Stefano Rovelli

To all the ESA team working on the Rosetta mission, I would like to extend my sincerest thanks for the amazing work that you have carried out, and wish you the best of luck for the challenges that lie ahead.

The idea that a man made probe has landed on a far away comet populates my dreams, and makes me hopeful and optimistic about the future of humanity!

#### Treble

Science at its very best, human beings engaged in a cooperative adventure, absolutely spell binding in a world so often caught up in other things! How proud you should be ESA for undertaking this brilliant task.

Pure Science at its very best increasing humanities knowledge!

P.M.

#### If you want, you can

I have been amazed by this incredible effort, begun decades ago and become real now. How can I describe what I feel when I think it is possible to watch things so far away. A comet: watched from the very first steps of mankind on the earth and seen as gods' sign. This is a human technological miracle. Thank you all. It seems that Universe is beginning to become a real and tangible part of myself.

Miklos

It is a wonderful mission of humans. I saw wonderful new, close photos of a comet. Unfortunately I can not figure out what the most important unknown science results were this mission. We knew earlier that comets brought a couple of materials to the Earth etc. But Rosetta stone in the British museum gave us a code for the understanding of an ancient world. Did Rosetta complete a similar 'code braking' mission? What kind of new information were collected from this mission? What are the ground breaking news knowledge those we have learnt from this project?

Pete Scott UK

# A brilliant technical mission that captured my attention...

To plan and execute a mission to intercept a rapidly moving comet, millions of miles away is such a fantastic feat of design and engineering... the world cup equivalent of Ronaldo scoring a goal into a net across the solar system Wow!... and as an encore, to set a lander onto the surface was just brilliant. It made me think of all the complex mathematics, computer programming and precision engineering that must go into such a venture, and wish I could understand just a fraction of how to do that! PROUD to be European!

Pete Scott, from England

**Rahul Choudhary** 

# Mesmerising

It leaves one pondering about the levels Science has reached. Thinking, planning, calculating and executing the whole mission successfully... Hats off to Team ESA. Just love to watch the Rosetta and Philae cartoons on the net. Having Rosetta and Philae Toys would be even sweeter experience.

Joseph

# Like family ...

About the time Rosetta woke up from hibernation my wife awoke from a coma after a serious brain trauma and it was then when I started to follow the Rosetta mission. Excitement alternating with doubt; would it all end up in a mess or would it reach the next stage? Did my life look a lot like the Rosetta mission! The joy that Rosetta had aligned with the comet and the fact that my wife came home after a long time. Then uncertain times begin where quick decisions have to be taken lacking sufficient time to consider all options; so many people involved and so many considerations to make. Time goes on and the right landing spot is selected. The interests of the operational team flying Rosetta don't always match with the eagerness of all the scientists who all want to have the best position for their experiments. The striking moment that Philae touched down, ... or not? The first data coming in and some more and then the silence. A roller coaster that swivels between all possible moods. Was that the end of Philae? How unsatisfactory! It is part of human nature to always look for even the impossible, like finding Philae. Rosetta moved away to stay out of the dust, unable to sync up with Philae and then closed in for the final stage. Although technically the finding of Philae is not a crucial point in the mission it is of incredible eminence for the human beings behind this. I think I can imagine the feeling.

Like family!

So many thanks to all the thousands of people that contributed to this beautiful voyage.

# maximumstrangerthing

# The importance of this Mission

For me it was the most important Mission ever held. I can express my feelings. An awesome success. We are on a comet. The Sci-Fiction is reality. Unbelievable. Following, studying one by one the incoming facts, watching the images, and posting the most of them on my Twitter account (@kountg).

I felt sad for the technical problem of Philae Lander "on surface" thrusters and harpoons, which caused the bounces and final landing in a dark gorge, making as a result to lose many information for the nature this comet nucleus. But it landed and did not lost in space. Something that could have happened. It was a great success on behalf of Humanity the landing on the surface of a Comet. We are human beings. Not wizards.

Philip Denham

# Rosetta and Philae... you made me smile when you came into my life... thank you

I have followed the Rosetta mission since its launch and it means so much to me. Against all odds the mission took on a personality of its own. Rosetta the mother ship safely carrying little Philae to the comet and deploying him to the surface. Philae the plucky lander, even when things didn't go as planned, hung in there and hung on! Even though not in the best position and orientation he successfully completed 80% of his tasks. It was meant to be... even when he was eventually found at the last moment. He wasn't destined to be lost on a comet.

All this success is the result of a fantastically planned and executed mission. Rosetta and Philae... built by human hands took on personalities of their own and became an extension of us and how we strive to seek answers to who we are and where did it all begin.

I will miss Rosetta and Philae... they came alive to me... they gave us so much. The mother ship Rosetta and her courageous plucky lander Philae... A mission well done... you have given so much to us all. Thank you and sleep well on Comet 67P/ Churyumov-Gerasimenko.

Jackie C. USA

# Rosetta and Philae: rewrites of history

Human history once called comets the harbingers of death and disease. They were regarded as omens sent from the gods, as a sign of some abysmal fate that would alter life for the worse. And why wouldn't they think such things?

The heavens above us have been catalogued and relied upon from the ancient Egyptians and Mayans, to modern religion, and even sailors navigating waters. To see something so crucial to life disrupted by a burning star that appeared with no warning and lasted for an unknown amount of time, what were early humans to think?

Even in Ancient Rome, the passing of Caesar's Comet was so powerful at the time of Emperor Julius Caesar's death that it was marked on coins to signify the passing of the deceased ruler from mortality to something akin with the gods.

As history progressed, our understandings changed. Adopting a more romantic approach we gave meaning to seeing them return like a long-lost lover that we would only have the chance to admire for a night or two before they were gone. Star-crossed in every sense of the word, comets and humanity seemed never to come together in harmony.

When Philae touched down on 67P/Churyumov–Gerasimenko, history stood corrected.

With my heart in my throat, I stayed glued to every source of information I could: with each bounce of the lander, my heart sank – until finally: we had done it!

Something that had once seemed to be terrible or 'once in a lifetime' was suddenly ours.

Humans decided distance had made the heart grow fond enough and instead of waiting for one to return, crossed unfathomable distances to make contact with our elusive companion throughout the ages.

In a way, we conquered our past because with the work Rosetta and Philae were able to do, we negated any notion of death and despair from the word comet and gave instead the image of hope.

After so many centuries we are one step closer to understanding our existence and how our wonderful blue gem in the night was formed.

From this point forward, because of the most enchanting duo of space travelers, history will associate comets with genesis of life, and I am so proud to have been able to witness such a groundbreaking transformation.

-Jackie C.

**Matthew Wayne Harris** 

# Changed the way we see ourselves

The Rosetta Mission, like the Stone, has helped to decipher previously unknown secrets. But instead of a language, it has unlocked the secrets of comets, the solar system, and even fundamentally changed the way we view our home planet and our place in this vast void of mostly nothingness. It has also forever changed humanities view of what our species is capable of if we set aside our differences and work together, and for that, this mission, the people who worked on it, and Rosetta and Philae will forever be in our hearts!

**Paul Wilcox** 

# What did Rosetta mean to me?

Rosetta, without doubt, taught me one thing: don't give up; there are no boundaries. I watched ESA's *Ambition* video with a tear in my eye. Rosetta proved that, no matter what the odds are, you can still succeed, even if that success isn't what you originally envisaged. Rosetta showed the world what can be achieved; to actually be able to launch a probe, travel a few billion miles and successfully orbit a comet and get information on that comet back to earth, now that is something to be immensely proud of.

Arthur C Clarke once wrote that: "Any sufficiently advanced technology is indistinguishable from magic". Edmond Halley would think Rosetta to be magic and for that I am really glad to be alive to have seen the world's great magic trick!

# Carlos Urzua

The Rosetta mission is to me, the best example of modern exploration and science. Rosetta surfed the planets for years to get to the comet. The team rose to the challenge when its weird shape was confirmed. The emotional roller coaster of Philae landing, bouncing and then sending first photo proved how new this environment was for humanity that it made us struggle so much to explore it. Rosetta gives me hope of what humanity is capable of when we use our technology to think long term and not far from our hearts. Why are we here? What else is out there? Lets go find it!

07

# **Zeynep OKTAY** Turkey

There has been bittersweet happiness in my heart since 30 September, since Rosetta's farewell. Being able to witness such a historic scientific mission is a cause of happiness and excitement in itself, but knowing that it came to the end is equally sorrowful.

To express our feelings and to create a personal keepsake of Rosetta&Philae's story, I and my mother made these two symbolic Rosetta&Philae figures. The first one was made by me and the second one was made by my mom (I want to add the detail that although she is a 70-year old woman, she has a huge interest in participating in these kind of things:)).

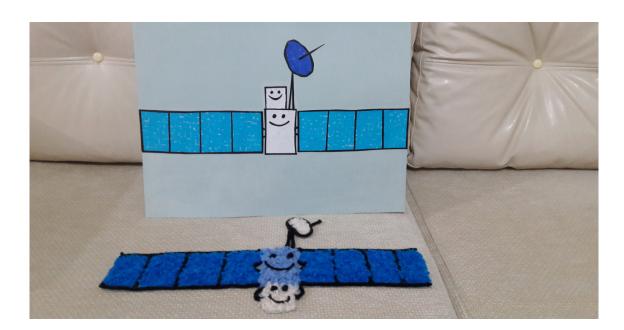
If I come to what Rosetta&Philae mean for me...

No need to mention Rosetta&Philae's scientific and historic importance, they had an emotional meaning for me. This is the second scientific cornerstone with which I have forged an emotional bond (the first one was The Human Genome Project, which has led me to decide to take an education in biology area. And I must confess that if I were at the age of choosing education area in these years, Rosetta's journey would have given me the same inspiration in the meaning of career choice). I had the chance of following Rosetta&Philae's journey from the beginning to the end. When Philae was asleep, I waited for it to wake up in a childish impatience. They gave me a childlike cheer in this sense. Every information, every image/photo they sent to the world was getting me excited.

Following Rosetta&Philae's journey was like to wait for hearing from a friend who tells me distant lands and who makes me happy by giving hope for the life. The affection that the world has showed for Rosetta should not surprise anybody, because Rosetta has proved what humanity can achieve and has also made us be proud of being a member of the human race.

Rosetta&Philae, what a wonderful journey you had and how much we love you two...
Thanks for all your discoveries.

# Zeynep OKTAY



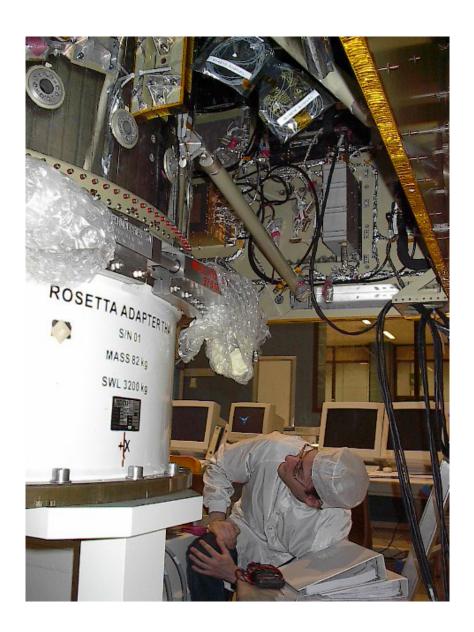
Austria

# Rosetta mission was like seeing a daughter growing up

Actually, at some time I was there, when Rosetta was "born". At that time I was a freshman working in the space business for less than a year when I was assigned to the team which was working on a test system for Rosetta. At that time I had my band, I just got a car from my dad, which I loved to drive around with, and I had found my real big love. And then I got the job with Rosetta.

Working on our system, we didn't know if we would make it. We worked with several new and challenging technologies at that time. As a freshman, I had much to learn but I really loved it and it seems, that we really did well. We managed to deliver our system in time and within budget. The whole team was really awesome.

So I had this challenging, but beautiful work, played with my band and had good times with my girl. It was the best time of my life. And at one time, I could meet Rosetta in person to "shake hands" and wish her a good flight. Here is a photo of the engineering model of Rosetta and me in the clean room at Alenia Spazio in Turin, a long time ago:



A few years later, tables had turned. I had lost my girlfriend, which was the most important person in my life, the band silently faded away and the Ariane 5 exploded, which left Rosetta on Earth and the search for a new comet began. And the best time had changed into the worst time.

I was working on other things in the space business, but Rosetta always stayed my favorite project.

Then she and Philae were sent on the journey to the new comet (67P) and for a long time we didn't hear much from her. But I had kept some folders and brochures, and of course the pictures of her, to keep the memory on the project.

After quite a long time, the "wake up" call contest from ESA was announced and all the memories came back. I was really thrilled by the attention Rosetta got from there on. Without doubt she had a long and dangerous journey behind her.

I, in the mean time, had a wife and a daughter and Rosetta was getting closer and closer to the comet, sending pictures back home. And when she finally arrived it felt like when my daughter started to walk. It was like: "Go Rosetta, now you have made one of the greatest steps, you are now on your own. We can guide you, but you can now do the work you're destined for!"

On the day when Philae started his descent to the comet, I had normal work, but I always kept the ESA live stream open in the background. I was really excited and nervous if he could make it. I had to leave the company for another appointment this evening before touchdown, but in the train I stayed on the phone and then finally the news came in: "successful touchdown!" I was really breaking out with a big "YEAH!!!"

I was really proud that I had contributed to a mission which has done something which hasn't been done before.

Two weeks after the landing of Philae I got ill. And stayed ill for over a year. Sometimes I thought it was like I was living up to that moment to get to this climax of the mission and then the stress, deprivation and other things of the years in between just caught up and said: "now rest a bit." And it was a long hard battle to get back to "normal".

My daughter already was in the third class in school, and the parents were invited to do something with the whole class. I thought a long time what I should do and decided, hey, I want to tell them about Rosetta. I want to show them how we got there, how hard and tricky that was and that we never gave up. We had the ambition to do it and we did, like stated in the *Ambition* Movie about the mission. So I prepared a talk with some material (pictures, some videos and I built a complete gravity simulator like shown here). I hoped, that I could pass on my excitement for this mission to the kids. And it seems like I did. The kids talked about my presentation weeks after and also some other classes asked if I could repeat the talk. A girl drew a picture of a starting Ariane 5 and gave it to me immediately after the talk.

And my daughter was really proud of me. And I am really proud of her and her interest. And I am proud of the other "daughter", which is Rosetta.

Rosetta will now end its mission in two weeks. That's sad, but all things have to come to an end. She was a marvelous spacecraft, together with Philae which managed to wake up for a short period of time when all thought he might never respond again. And now, for the big bang at the end, we finally discovered him! The mission may end. There will be other missions coming up, bigger missions, greater missions, riskier missions.

07

But my mission will always be Rosetta.

In the words of Doctor Who (The End of Time Pt2): "This song ends, but the story never ends."

Good Bye Rosetta. Your mission has accompanied me for so many years, in good times and in bad times.

You really deserve your rest. Good Bye.

# Zsuzsanna Klara Toth

# Rosie and Phil - a tribute

May, 2004. I started a course on scientific journalism because I liked writing and I liked science. I wanted to learn about how to convey important scientific facts to the everyday reader. Just like myself. I still remember one of the first group exercises, we had to write a short piece of news about the launch of the Rosetta space probe targeting the comet 67P/Churyumov-Gerasimenko. Landing a man-made craft on a comet seemed like science-fiction at the time. I can still recall the vivid discussion of our team on how to phrase the facts in order to make readers excited about one of the most important space missions of the new century.

Couple of things, just as a side note. Since my early age I have been a big fan of Egypt and archeology, so for me Rosetta was the stone that enabled Jean-François Champollion to decipher Egyptian hieroglyphs. Also, and here I am being very honest, I was born in the year 1967. Now you can see how these coincidences might have derailed anyone onto a somewhat supernatural turn of events, but not me. I snickered a bit and kept going.

Ten years later all of mankind, as I like to think, was glued to the internet to witness the Philae lander touch down on the comet. On November 12. Can you guess it? Yes, on the day of my birthday:) Granted, Phil bounced up and down a bit, but in the end he managed to anchor his cute little legs onto the celestial object that has been flying around the Kuiper belt since...

Yes, I cried a bit when the news hit me. Not so much because of the coincidental circumstances of the numbers and dates (although, come on, mankind landing on a comet for the first time on your birthday, that's kind of cool), but because this was a hell of a success.

Rosie and Phil, as I like to call them based on the immensely cute cartoonish characters created by the mission team, had a whole world fall in love with space exploration. We witnessed the voyage, the landing, the transmission of important data, the deciphering of information relating the early Solar System.

And now their journey has come to an end. Phil is safe on the comet, Rosie will be joining him on September 30. I, for one, am extremely grateful to the Rosetta team for allowing me to be part of this incredible adventure. This is what space exploration is about. We will never forget you Rosie and Phil, you will be in our hearts for ever and ever.:)

07

Italy

# Rosetta, il mio ultimo ricordo di mio nonno

Mi chiamo Mattia Barbarossa,

sono un ragazzo di quindici anni e vivo a Napoli. Lo spazio è sempre stato incredibilmente affascinante ed emozionante per me, come per chiunque abbia lavorato in questa incommensurabile missione. Lo spazio per me però è legato ad un ricordo davvero molto molto speciale, quello di mio nonno. Quando ancora ero un bambino e mi divertivo nelle calde serate estive e mettermi a confronto con il cielo, era sempre li mio nonno. Lui sin da piccolo mi faceva giocare con i modellini in legno che si costruiva nella sua casetta adagiata in un fitto bosco ma da cui la vista della notte stellata era incredibile. Mio nonno era un tipo incredibilmente pieno di pazienza, sia nel osservare che nel lavoro (lui lavorava presso l'Agenzia Spaziale Italiana) sia di energia. Ricordo ancora i suoi vettori (Saturni V, Ariane IV e R-7) costellavano la mensola sopra il mio letto, assieme a tanti modelli si sonde come la Deep Space One e SOHO. Ricordo bene quel modello, sembrava una piccola scatolina grigia con due enormi ali azzurre che riflettevano, nella notte la luce della mia lampada notturna. Andando a ben osservare quel modello su cui mio nonno ci lavorò mesi e mesi, si osservava proprio bene quel piccolo bitorzolo ricoperto di pannelli solari.

Oh Philae se ti avessi riconosciuto prima!

Uno dei momenti più importanti per me è stato il lancio di Rosetta. Lo ricordo a mala pena, avevo solo tre anni! Ma ben ricordo che mio nonno mi svegliò di corsa e mi mise davanti ad uno schermo di un vecchio PC. Quando lo vidi, non credo che sapessi veramente cosa mi accingevo a guardare, ne avevo visti molti di lanci, e ricordo che mi piacevano più i "plani volanti" (ovvero gli space shuttle) ma ricordo che quello fu un lancio speciale per lui perché svegliarsi presto era raro! Durante gli anni che succedettero di lanci ne vidi moltissimi (sono a circa 200 secondo le mie stime), passavo intere giornate con lui che mi spiegava come funzionassero i lanciatori e l'importanza dell' esplorazione spaziale, d'estate mentre lanciavamo i nostri razzi modelli interi gruppi di bambini venivano a vederci, a volte non sempre con i propositi migliori. Pian piano cominciai a realizzare di cosa si trattasse la missione e mio nonno mi spinse sempre avanti, tant'è che cominciai (già da 8 anni) a fare conferenze nella scuola su tutte le varie missioni del sistema solare! Purtroppo un giorno, la mensola non resistette più e, nonostante mio nonno non me lo avesse detto direttamente, credo fosse proprio colpa mia. Se ne danneggiarono molti, ma l'unico che si ruppe fu proprio Rosetta. La parabola ad alto guadagno, il pannello solare sinistro e Rosina (lo strumento) si ruppero. Data la mia giovane età, non sapevo proprio come riparare al danno, mio nonno (che ovviamente ci aveva lavorato per anni, ovviamente ci rimase molto male. Nel vano tentativo di riparare al danno fatto e, di riprodurre un'assonanza (dato che una forma di pane napoletano si chiama la "Rosetta") e che la sonda si chiamava allo stesso modo, gli feci questo.

Anche se teoricamente commestibile, non provò mai a mangiarla, gli piacque talmente tanto che la mise su quella medesima mensola ricostruita, tra un Ariane V ed il motore J-2.

La prima volta che misi piede dove lavorava mio nonno fu per osservare le immagini

scattate dell'asteroide 2867 Steins, nonostante non avessi resistito a vedere le immagini su internet, fu un'enorme e sbalorditiva sorpresa vederle su un grande schermo! L'emozione ci colpì immediatamente ed io e mio nonno ne parlammo per giorni interi, assieme ad i risultati di Mars Express. La travolgente passione di mio nonno che condividevamo, mi fece amare in un modo incondizionato l'ingegneria aerospaziale, all'età di 9 anni iniziai a frequentare i corsi in modo esterno dell'università.



Durante una calda sera di estate, erano previsti due eventi: il terzo ed ultimo flyby di Rosetta e la Churyumov-Gerasimenko prossima al perielio. Mio nonno ed io usavamo il suo telescopio da 20 cm, quando provammo ad osservare quel piccolo puntino di magnitudine 12 che era Rosetta, nulla. Già di un'altra sonda avevamo osservato il flyby con la terra ma stavolta nulla, non ne capimmo il perchè ma dopo un'oretta di tentativi passammo alla 67P. Ci mettemmo un po', ma un batuffolino debolissimo era li! Ne avevamo viste di comete ma questa era una delle poche che sapevamo sarebbe stata esplorata da una sonda!

Un bel giorno... apparve Lutetia!

Ricordo che come per Steins, ma stavolta sapendo cosa sommariamente aspettarci, aspettammo il download di tutte le immagini alla massima risoluzione possibile. E, quando apparvero sullo schermo... eccolo... un enorme corpo di 100 km avvolto nell'oscurità dell'universo che si apprestava ad i nostri occhi. Quando vedemmo la sequenza di flyby ci parve di essere li e, come per la volta precedente (ma stavolta essendoci salvati le immagini su una USB) tornammo a casa in macchina speranzosi di osservare le immagini della Churyumov-Gerasimenko.

Quando Rosetta entrò in ibernazione non ricevemmo più sue notizie fino al gennaio 2014. Quando si risvegliò la tensione era molta ma purtroppo non riuscimmo a seguire la diretta a causa di alcuni problemi personali ma fu comunque una grande emozione sapere che era andato tutto bene. Nelle settimane e nei mesi successivi continuammo

a seguire i progressi della missione, vedendo quel piccolo e strano oggetto sempre più dettagliato fino alla fatidica data.

Nell'agosto, poco prima dell'arrivo di Rosetta alla 67P/Churyumov-Gerasimenko, mi presentò un concorso dell'ESA chiamato "Rosetta - Are we there yet?". Insieme ci ricordammo del lavoro che avevo fatto quando si ruppe il suo modello ed allora ripresentammo la medesima foto, ero emozionatissimo all'idea di andare a vedere l'atterraggio di Philae a Darmstadt. Per la vincita del secondo premio con la nostra "Rosetta Cake" ricevemmo una splendida borraccia che mettemmo su quella stessa mensola "spaziale" assieme a gli altri modelli. Purtroppo non riuscimmo a vincere il primo premio e mi sconsolai molto, ma lui mi rassicurò e mi promise che ci saremmo andati al primo open day! Abbiamo visto insieme decine di fotografie della superficie e riuscimmo a trovare il posto per la diretta dalla sede dell'ASI (anche se lui era già in pensione).

Nel mese di ottobre, tornando da lavoro, mio nonno ebbe un infarto del miocardio. Morì all'età di 69 anni, non avemmo nemmeno il tempo di salutarlo.

Non ebbi più il coraggio di seguire nessun'altra missione per un bel po'.

Mio nonno è stato tutto per me, è a lui che devo ciò che sono oggi, le mie conoscenze e la mia incredibile curiosità. Con lui ho seguito decine di missioni spaziali ma la cosa che mi rattrista di più è proprio che lui non abbia potuto osservare l'atterraggio di una delle missioni che avevamo seguito insieme.



Quello che ho scritto qui l'ho scritto solo perchè volevo sapeste quale uomo fosse mio nonno e perchè sapeste che nonostante tutto questa missione è stata nel nostro cuore, nel cuore delle persone, come poche altre e che il termine e l'ultimo abbraccio di Rosetta e Philae segnerà anche la fine di uno dei ricordi che mi tiene stretto a mio nonno ma sarà per me sempre ricordato.

Buon viaggio Rosetta, rimarrai sempre nei nostri cuori Un saluto da Mattia e Claudio My name is Mattia Barbarossa,

I am a fifteen year-old boy and live in Naples. Space has always been incredibly fascinating and exciting for me, as for anyone who has worked in this immeasurable mission. To me, however, space is linked to a very very special memory, that of my grandfather. When I was a child and I enjoyed during warm summer evenings to face the sky, my grandfather was always there. It was him who, since I was a child, made me play with the wooden models that he had built in his house nestled in a dense forest from which the view of the starry night was incredible. My grandfather was an incredibly patient person, both in observing and in his work (he worked for the Italian Space Agency) and in terms of energy. I still remember his launchers (Saturn V, Ariane IV and R-7) populating the shelf above my bed, along with many models of probes like Deep Space One and SOHO. I remember well that model, it looked like a small grey box with two huge blue wings that, during the night, reflected the light from my night lamp. Looking well at that model on which my grandfather had worked for months, you could see very well that little wart covered with solar panels.

Oh Philae, had I recognized you earlier!

One of the most important moments for me was the launch of Rosetta. I remember it barely, I was only three years old! But I remember that my grandfather woke me in a hurry and put me in front of the screen of an old PC. When I saw it, I do not think that I really knew what I was going to watch, I had seen a lot of launches, and I remember that I like the "flying planes" (ie the space shuttle) the most, but I remember that this was a special launch for him because waking up early was a rare event! During the following years I saw many launches (about 200 according to my estimates), I spent entire days with him as he explained to me how the launchers worked and the importance of space exploration; during the summer, whole groups of children came to see us as we launched our rocket models, sometimes not always with the best intentions. Slowly I began to realize what the mission was about and my grandfather was always pushing me forward, so much so that I began (since the age of 8) to give lectures in schools on all the various missions of the solar system! Unfortunately, one day, the shelf could not resist any more and although my grandfather didn't say it directly, I think it was my fault. Many models were damaged, but the only one that broke was Rosetta. The high-gain antenna, the left solar panel and Rosina (the instrument) were broken. Given my young age, I did not know how to repair the damage, my grandfather (who obviously had worked on it for years) was of course very sad. In a vain attempt to repair the damage done and to make a word-play (since a Neapolitan type of bread is called the "Rosetta" and the probe was called the same way), I made him this.

Although theoretically edible, he never tried to eat it, he liked it so much that we put it on the same shelf, between an Ariane V and the I-2 engine.

The first time I set foot where my grandfather worked was to view the pictures taken of the asteroid 2867 Steins, even though I could not resist to see the images on the internet, it was a huge and stunning surprise to see them on a big screen! The emotion hit us immediately, and me and my grandfather talked for days, along with the results of Mars Express. The overwhelming passion of my grandfather that we shared, made me fall love in an unconditional way with aerospace engineering, and at the age of nine I began to audit courses at the university.

During a hot summer evening, there were two events: the third and final flyby of Rosetta and Comet Churyumov-Gerasimenko reaching perihelion.

My grandfather and I were using his 20-cm telescope, when we tried to observe that small 12-magnitude dot which was Rosetta, but nothing. We had already observed another probe that had flown by the Earth but this time nothing. I did not understand why but after an hour of trying we moved to 67P. It took us a bit, but a faint splotch was there! We had observed comets before but this was one of the few that we knew would be explored by a probe!

One day ... Lutetia appeared!

I remember that, like with Steins, but this time knowing what to expect roughly, we waited to download all the images at the maximum resolution. And, when it appeared on the screen ... here it was ... a huge body of 100 km wrapped in the darkness of the universe that was presenting itself to our eyes. When we saw the flyby sequence, we thought we were there, and like the previous time (but this time having saved images on a USB stick) we went home by car hoping to see images of Comet Churyumov-Gerasimenko.

When Rosetta went into hibernation, we did not receive any news from her until January 2014. When she woke up, the tension was great but unfortunately we were unable to follow the livestream due to some personal problems but it was still a thrill to know that everything had gone well. In the following weeks and months, we continued to follow the progress of the mission, seeing that little strange and increasingly detailed object until the fateful date.

In August, shortly before the arrival of Rosetta to 67P/Churyumov-Gerasimenko, he introduced me to an ESA contest called "Rosetta - Are we there yet?"

Together we remembered about the work that I had done when his model was broken and then we submitted the same picture. I was excited about going to see the landing of Philae in Darmstadt. With our "Rosetta Cake" we won a spot prize and received a beautiful flask that we put on the same "space" shelf together with the other models. Unfortunately we did not win the first prize and I was very sad, but he reassured me and promised me that we would have gone to the first open day! We looked at dozens of photographs of the surface together and managed to find a spot to watch the live event at the ASI headquarters (even though he had already retired).

In October, returning from work, my grandfather had a heart attack. He died at the age of 69 years, we did not even have time to say goodbye. I no longer had the courage to follow any mission for a while. My grandfather was everything to me, it is to him that I owe what I am today, my knowledge and my insatiable curiosity. I followed with him dozens of space missions but the thing that saddens me most

is that he has been unable to observe the landing of one of the missions that we followed together.

What I wrote here, I just wrote it because I wanted you to know what kind of man my grandfather was, and so that you know that in spite of all, this mission has been in our hearts, in the hearts of people, like few others, and that the end of the mission, the last embrace of Rosetta and Philae will also mark the end of one of the memories that keeps me close to my grandfather but that I will always remember. Godspeed Rosetta, you will always be in our hearts.

Greetings from Mattia and Claudio

### Farah Yeasmin

I first heard about Rosetta and Philae in 2014 just before she reached the comet. The beautiful animation on Rosetta mission was amazing and helped me to understand about the mission as I almost have no academic knowledge on astrophysics/ astronomy or cosmology. This is fascinating that we humans have made such an excellent progress. To me these moments are mind blowing and inspirational when a mission is launched, bring expected results or ended and the scientists embrace each other, share the warmth and passion. These ephemeral moments give a strong feelings that I could not put into words. All I can say, when I am going to be a mother I will tell the children about the wonderful, mesmerizing stories about the human journeys to explore the Universe as bedtime stories!

Riri Rafiani I

Indonesia

# Rosetta Mission: A story of human kind

The first time I found out about Rosetta Mission was when I, as usual, browse the Internet aimlessly, during which time I realised that the Internet had been buzzing about a comet-chasing mission. Once I got tired of browsing, I moved on to watch TV and saw a rather aggressive commercial about a documentary on comet-chasing mission on NatGeo Channel. So, I watched it and immediately fascinated by ESA's mission to land on a comet. I've been following the news since. It was not long for me to realise that this is not just a story about deep-space mission. It's larger than that.

Rosetta Mission is a story of how humans, as a species, have evolved greatly: from being frightened of a comet to finally get up close and personal with it. It is a story about the great quest to find out about how life on earth took place, how we came to be. It is a wondrous story of a concerted effort done by people from different nations to take on a mission that was taught to be ridiculously difficult to achieve.

But, together, they can make it. Want to hear a good story about dreaming big?

Just look at this mission.

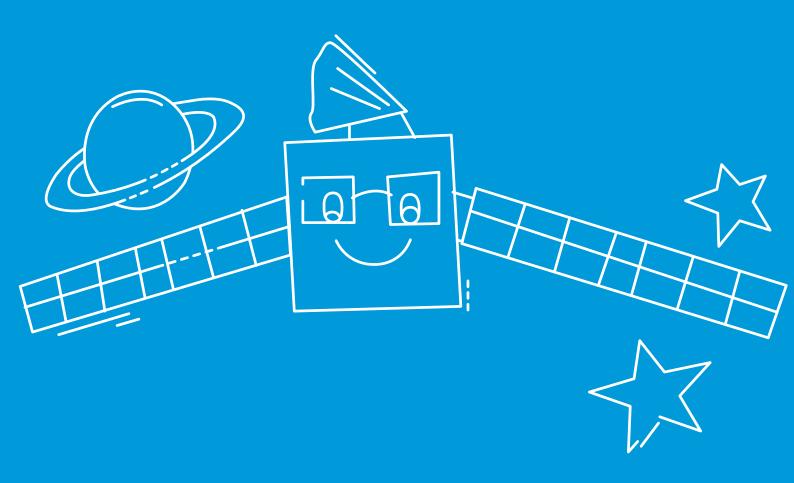
I am not a scientist, but I've always had a special interest in astronomy and space explorations. I teach in an English department in a university in Jakarta, Indonesia and whenever I have a chance, I always tell my students about scientific projects such as Rosetta Mission regardless their major. But, since they're taught to become teachers, I want to make them, at least, know about this stuff so one day they could pass it on to their students and inspire them to pursue science and technology, which are not very attractive for most people in this country (btw, I told my nephews about Rosetta and Philae and now they are big fans).

I want to thank the team for giving a wonderful finale to Rosetta by bringing it together again with little Philae and let them rest in their comet. It must have been really sad to leave Rosetta wondering alone in the cold, dark space.

Lastly, congratulations to the whole team. You are the embodiment of the word 'awesome'.

66 Rosetta Legacy

# O8. REKINDLING ENTHUSIASM FOR SPACE



discflame

# It was amazing

I fell in love with space exploration long before the Rosetta mission came into the news, but ever since learning of the mission plan I was even more intrigued. I mean, a satellite was going to make orbit around a comet (already amazing), and then land a probe on it. That was a spectacular idea and I put Philae's landing date on my calendar because of it.

I then began to research more into the mission and found those cute animations about the mission. That gave the two probes personalities and I became even more invested in what happened.

When Philae landed and sent back the first picture, I was blown away. I was actually looking at a picture taken on the surface of a comet. That was an amazing time as I spent that next hour looking intently at these pictures from a new alien world.

This mission reaffirmed my interest in space flight, and I am absolutely excited to see what the ESA does next.

Mark

# **Inspiration**

The mission to Comet 67P/Churyumov-Gerasimenko made me realise that with a bit of effort, anything is possible. If we, as humankind, can get little Philae onto a comet a vast distance away from Earth having attempted nothing of its type before and to nearly get it spot on, individually we can do anything, as long as you try! This mission has also reminded me how beautiful the universe is, with seeing photos like those taken by Rosetta and Philae making me wonder what else is out there, what we haven't seen yet. Furthermore, it has also inspired me to read further around my degree subject, by giving me literature I am genuinely intrigued to read about!

**Carol Thornton** 

# What Rosetta and Philae mission meant to me contribution

It just brought the whole of space closer to home to me. It opened up my eyes to look further and beyond our fragile planet. To have so much more respect to our humankind that enable our species to make, send, land and communicate back to Earth on a rapidly travelling piece of rock. It just gets better and better and the scientists involved need so much respect and admiration for the dedication for all this to happen. Thank you all.

Maike Ruppelt Germany

# Rosetta: How to keep on dreaming

When I first heard of Rosetta, I couldn't believe there was a possibility not only to get as close to a comet as it was planned, but also to land on its actual surface. As an author of science fiction novels I love to be inspired by new achievements and images from space which help me to create new stories about what might be possible in the future.

So I started to collect any information I could find and I got more and more excited when the day came Philae was supposed to land on the comet. I remember rushing home from college to see the livestream of the landing and how happy I got in the moment I saw all the people cheering when the landing was confirmed.

I was dreaming about flying to space or participating in a mission like Rosetta my entire life and I decided to study physics to make this dream come true, however at some points it's hard not to give up and think of something more realistic. But when I saw the livestream, I remembered why I love this so much and why it's worth to keep on struggling, so maybe some day I can stand beside these scientists – or at least help to create some cartoons as cute as the ones of Rosetta and Philae...

So thank you so much for sharing all the information, the fantastic pictures and especially the atmosphere and the mood with us!! You made me keep on dreaming!

**Christina Bruckmann** 

Germany/The Netherlands

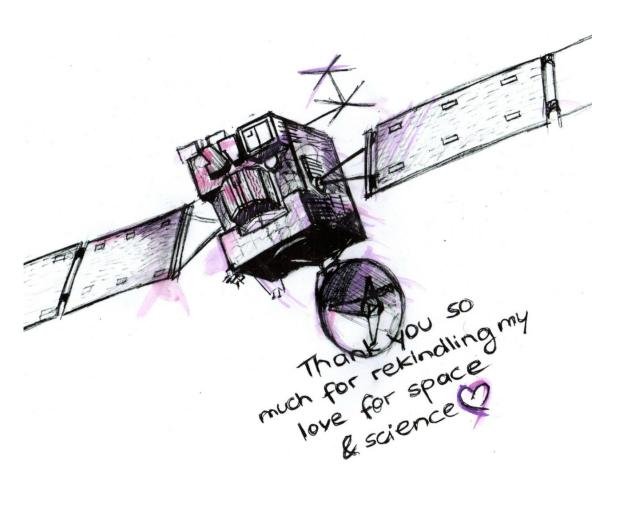
Dear Rosetta-Team,

when I was a kid, like many children I was obsessed with space. Sadly, during my teenage years I kind of lost my passion for astronomy and science in general and focused on other things. Following this mission in the media did not only make me realize that the ESA is just as cool as NASA, but also reminded me how much I love space and inspired me to regularly attend lectures at my local observatory and to pick up science books again. Thank you so much for that!

Greetings from Germany / The Netherlands,

# Christina Bruckmann

Ps: The paper version of Rosetta and Philae that I assembled based on a template they gave away at the observatory has been a really nice decoration for my bookshelf, but it is starting to fall apart, so a stuffed version of it would be just the right thing! :)



### Maria

Rosetta helped me remember what childlike excitement is! I remember re-enacting the moonlanding with my dad, and watching satellites fly over us when I was a kid. I'm sure many of them were imagined...;) It ignited my love for space exploration. Rosetta helped me rekindle that fire at the age of 30. I had already forgotten how awesome space exploration can be. It's been an exciting couple of years, and I can't wait to see what the next adventures are going to be like.

Thank you Rosetta, Philae & ESA!:)

# Cristina Romero

Spain

Misiones como la de Rosetta han hecho que descubriese el maravilloso mundo del espacio, ya que a raíz de éstas empecé a buscar más información sobre todos estos temas, y descubrí mi pasión: el espacio.

Desde entonces, cada día necesito aprender algo nuevo, leer noticias sobre los avances en la industria aeroespacial y seguir las misiones actuales.

Me quede tan enamorada de todo esto, que mi gran sueño es poder llegar algún día a estudiar Ingeniería Aeroespacial, para así poder participar en misiones tan maravillosas como esta.

Es lo que me anima a seguir trabajando duro todos los días, ahorrar para conseguir mi sueño, y ya cada vez queda menos para alcanzarlo.

El 30 de Septiembre, el día que Rosetta aterrizaba en el cometa, mientras estaba viendo la retransmisión por internet, me dediqué a realizar esta pieza en forma de colgante, para así poder recordar todo lo que ha significado para mí esta misión. Está realizada totalmente a mano con arcilla polimérica, mientras Rosetta aterrizaba para finalmente poder descansar en el cometa 67P, junto a Philae.

Muchisimas gracias a la ESA y a todo el equipo por compartir esta mision con todos nosotros.

Cristina.

Missions like the one of Rosetta have allowed me to discover the wonderful world of space, and as a result I started to look for more information about these topics and I discovered my passion: space.

Since then, every day I need to learn something new, to read the news about advances in aerospace industry and follow the current missions.

I ended up with such a fascination with all this, that my big dream is to be able one day to study Aerospace Engineering, in order to take part in wonderful missions like this one. This is what's pushing me to keep working hard every day, to save up to accomplish my dream, and every time it takes a little less effort to achieve it.

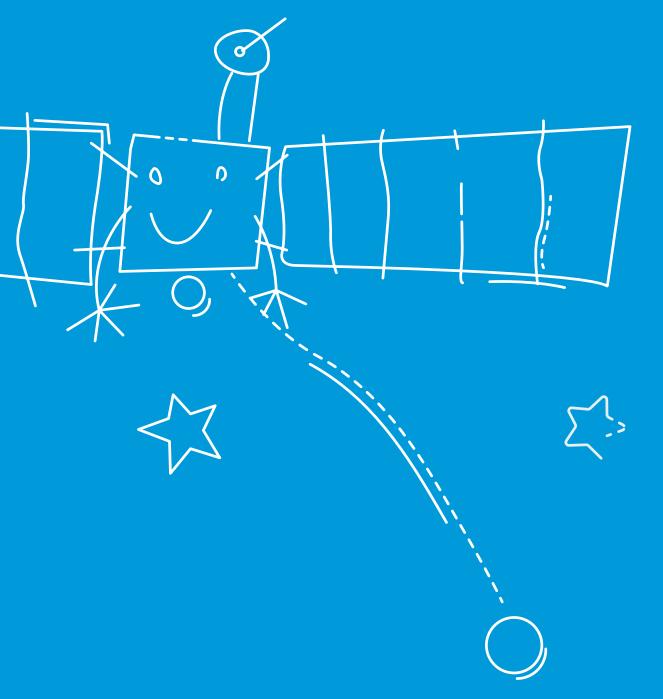
On September 30, the day Rosetta landed on the comet, while I was watching the webcast, I created this pendant-shaped piece to remember everything that this mission has meant to me. It is entirely handmade with polymer clay, crafted while Rosetta was landing to finally rest on Comet 67P, together with Philae.

Many thanks to ESA and the entire team for sharing this mission with us.



66 Rosetta Legacy

# 09. ARTS, CRAFTS AND FUN



09

This was my Christmas tree last year! How about a nice comet on the top, my husband asked. Easily done! Here is my realistic version of Christmas tree comet, complete with Rosetta and Philae!! I loved every detail of this mission! #RosettaLegacy







M. Simon Germany

Rosetta and Philae have made it to Tschuri, that was great and exciting. We have been at Berlin's Museum of Natural History to see Tristan the TRex, the Archaeopteryx and Rosetta und Philae. My Hippo Werner searched for Philae on Tschuri; -) Great journey and success for scientists and technicians, congratulations!



# Janine Timiney



Before you had designed the plush Rosetta I made my own as I wanted a soft toy version.

Max Pudney UK



To celebrate Rosetta's success, my wife and I baked a Comet 67P/Churyumov–Gerasimenko cake to share with our university friends!

Best use of a duck cake mould ever!:)

Gelson Amir Brazil



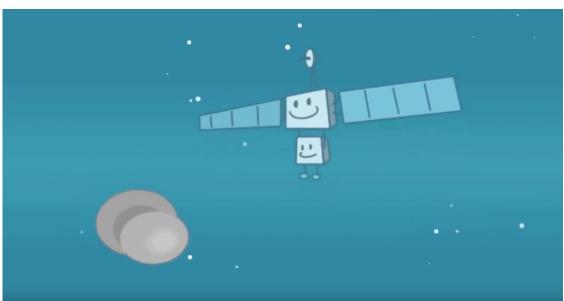
Rosetta Philae 67P. Ótima missão.

Rosetta Philae 67P. Excellent mission.

Gelson Amir RS BRASIL Sara Zeni Italy

Now that the Rosetta mission is coming to an end I feel quite sad. Thanks to the beautiful cartoons made, I found myself getting emotionally attached to these two robots. I don't want to say goodbye to them: (So I decided to make this little tribute to thank you ESA for sharing this mission with us in such a lovely way!





Animation built with Processing Interactive animation: <a href="mailto:openprocessing">openprocessing</a> Source code: <a href="mailto:github">github</a>

9

# Jordan Blanchard Guadaloupe

My little tribute to the mission Rosetta & Philae.

I built my little µPhilae. It is autonomous and runs on solar energy.

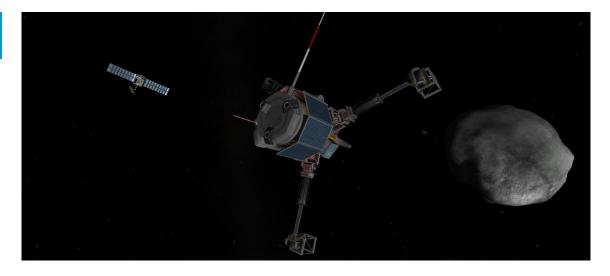
He takes pictures with his small onboard camera, measures the temperature, the attitude, pressure and send them on the web!

Even after the mission, my Philae will still be there!

I'll post assembly and webcam on <a href="http://www.chynehome.com">http://www.chynehome.com</a> soon.



# Richard Holgado



Rosetta Mission is one of the greatest achievements in space exploration. That's why I recreated the mission in Kerbal Space Program and enjoyed it a lot!

**Christin** Germany



Rosetta and Philae gave me so much inspiration to search for ghosts and creatures in space too. And I found them, deep in space, deep in me.

Noraziah Radzali Malaysia



Rosetta Mission has influenced my life since the very first time I've read about it online a few years ago. It has sparked my interest to learn more about space exploration. It's really sad knowing that this mission is coming to an end, however it has been a wonderful journey. This is my Rosetta's inspired cake pops. :)

Marion Steingraeber

Germany



Der Weltraum - unendliche Weiten... Wir schreiben das Jahr 2016

Die Mission neigt sich dem Ende entgegen und die Rosetta Mission inspiriert mich auf verschiede Weise. Ich habe sehr schnell den Entschluß gefasst eine gehäkelte Version der Rosetta-Raumsonde zu machen. Ich finde es auch sehr spannend, solche Missionen mitzuverfolgen, weil es noch so viel zu entdecken gibt und man freut sich immer mit dem Team, wenn eine Mission gelingt.

Outer space – endless stretches... This is the year 2016

The mission is coming to an end, and the Rosetta Mission has inspired me in a variety of ways. I decided very quickly to make a crocheted version of the Rosetta space probe. I also find it very exciting to follow such missions, because there is still so much to discover and one is always happy with the team when a mission succeeds.

# Maik Münch



The Rosetta mission has awakened my interest in space flight. I didn't notice anything about the start of Rosetta in 2004. Then one year before landing on the comet I followed ESA on twitter and got excited. I read every article about Rosetta & Philae, watched every cartoon and finally got the T-Shirt of them both.

I like the public relation engagement of ESA. They're simplifying the mission in order to ask for understanding and to reach a wider public.

I am sad thinking of that mission coming to an end. However, great data has been achieved.

May Rosetta and Philae be peacefully united!

# **Tim Peacock**

# Stop Motion Animation: Space Probe and Santa, Off On A Comet

Following coverage of Philae's landing and subsequent experience in November 2014, I was inspired to create a short lego stop motion animated film for Christmas of that year, one of the titles for which was:

# Space Probe and Santa, Off On A Comet

The film involves an artificially intelligent space probe landing on a comet and rescuing Santa Claus who has become trapped there. The little probe chooses to

sacrifice itself by remaining on the comet, in order to send Santa back to Earth on a separate return booster stage, waving goodbye with its mechanical arm, as it slowly starts running out of battery...

... of course being a Christmas film... there is a happy ending to this tale of festive peril!

Kristen Fredriksen

**USA** 



I'm a giant space nerd. It's all so exciting - there's so much we have yet to learn out there! It's easier now than ever to follow all your favorite missions, with space robots having their own Twitter accounts, different space agencies live-streaming to Periscope and Facebook, and astronauts Instagram-ing their (16x) daily sunrises. But there's just SOMETHING about Rosetta and Philae that gets me more emotional than the rest.

They're a great little team. ESA has done such an amazing job getting the public to care about the daily lives and fates of two cold, distant, comet-orbiting/comet-landing machines. To me, the landing on 67P was one of those rare events where you stop and say "look what we did!" and the 'we' refers to all of humanity.

I spend so much time telling my friends about all the space news happening here and there that I thought it might be fun to try to get other women and non-science types excited, too. I started regularly painting space-themed nails and have had a lot of fun! Here, you can see Comet 67P/Churyumov–Gerasimenko on the thumb and scenes from the Philae and Rosetta cartoons on the other fingers!

Thank you, Rosetta, Philae, and the whole team! Kristen Fredriksen Alessandra Ferraiolo

Italy



La Missione Rosetta, sin dal primo momento, ha catturato la mia attenzione e i suoi due protagonisti, la sonda Rosetta e il lander Philae, hanno riempito le mie giornate con le loro stupende avventure :)

Dal Natale 2014 sono personaggi fissi delle mie decorazioni natalizie, e Philae è su tutte le comete della casa, da quella del presepe a quelle sull'albero. Questa foto mostra solo un piccolo esempio dei tanti Philae e Rosetta che a Natale festeggiano con la mia famiglia:)

Grazie per l'ottimo lavoro di tutto il team della Missione Rosetta, arrivederci al 30 settembre per l'ultimo Good Bye :)

Alessandra

The Rosetta Mission, from the first moment, caught my attention and its two protagonists, the Rosetta probe and the Philae lander, have filled my days with their wonderful adventures:)

Since Christmas 2014 they are regular characters of my Christmas decorations, and Philae is on all the comets in the house, from the one on the crib to the one on top of the tree. This photo shows just a small example of the many Philae and Rosetta that celebrate Christmas with my family:)

Thank you for the excellent work of the entire team of the Rosetta Mission, see you on the 30th of September for the final Good Bye:)

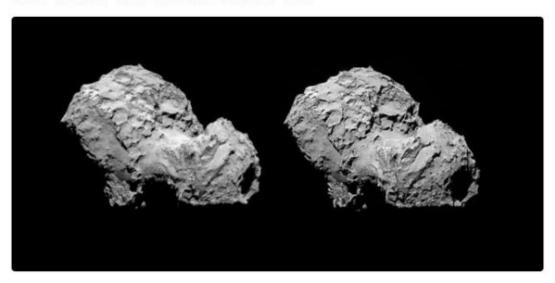
9

Claudia Manzoni Italy/UK





# Claudia Manzoni and I made this stereo from pics by Rosetta – finally meeting that comet. We think it's AMAZING! Bri



Rosetta with its amazing Archive Image Browser was incredibly inspirational and challenging for me to look for and find pairs of suitable images to build stereoscopic pictures of Comet 67P... images to look at by parallel free-viewing or through a stereoscope or Virtual Reality viewer, to see the Comet in all its 3-D glory!

I had a lot of fun hunting for a number of stereo pairs and collaborating with Astronomer and stereoscopic expert Dr Brian May, who published a couple of those on Twitter and on his website:

http://www.brianmay.com/brian/brianssb/brianssbaug14a.html#04

# http://www.brianmay.com/brian/brianssb/brianssbnov15a.html#04

And I keep looking for more, as the Rosetta image archive is huge and still growing! Thank You so much Rosetta, it's been a fantastic ride!

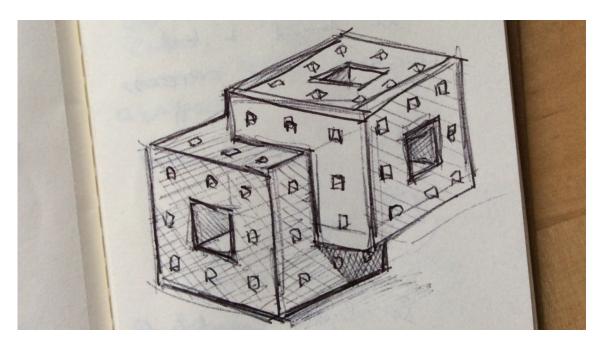
Claudia

# Isabelle Joosten



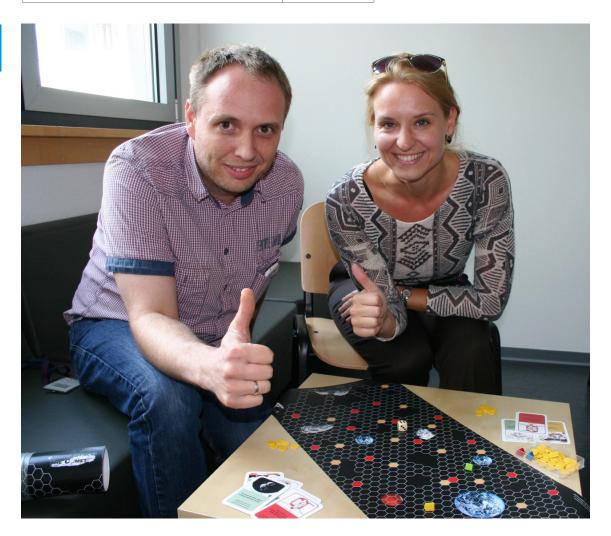
I love drawing and I really love space, so when I heard about this campaign, my first thought was "I'm going to draw Rosetta and Philae!" This is the result. The fact that Rosetta is actually out there, orbiting another world, is just mindblowing to me. It's so far away, yet so close compared to other solar systems and other galaxies. My biggest dream is to work on missions like Rosetta and find out even more about the universe we live in, and maybe even go to space myself and see it with my own eyes!

**Frayon** Germany



Holger Krämer & Alexandra Sokolowski

Germany



# A board game inspired by Rosetta and Philae

Having worked on the Philae mission myself, I know how difficult it is to convey knowledge and science to a less scientific audience. I enjoy enthusing children about astronomy and space. During my talks, my young listeners came up with many interesting questions about Rosetta, inspiring me to develop a board game to get them actively involved into a real (but playful) space mission.

Together with my colleague Alexandra we fine-tuned the game and through the support of our employer, Telespazio VEGA, we could have it produced! When I want to explain the mission and its goals now, I simply invite people to play the game with me.

Holger Krämer & Alexandra Sokolowski

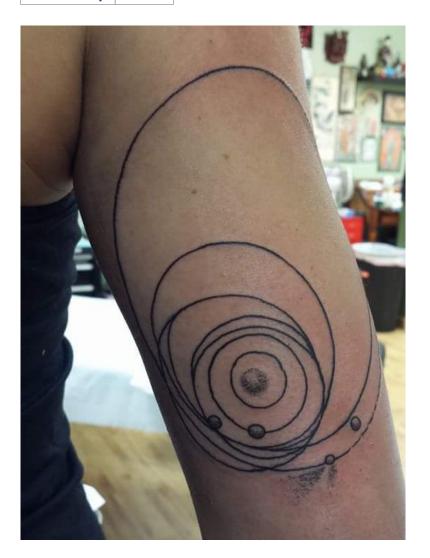
**Hayley B** 



I was so inspired by the investment and research into finding out more about our universe. I wish our society valued scientific exploration more, but missions like this remind me that small steps are possible, and happen all the time. While Philae's landing was a little sad, I'm sure the data that was collected will yield incredible insights for years to come – I can't wait to find out more. Thanks for the work you do, ESA, and for building robot friends to help us explore the galaxy.

Hanna Carey

USA



It meant so much to me that I got the Rosetta mission flight path tattooed. I returned to school 6 years ago to pursue a degree in astronomy and I am graduating this semester from the University of Texas at Austin with a BSA of Astronomy! With the events tomorrow, I know part of the mission is ending, as with my commencement in school, but I am excited for the information to come and where the Rosetta mission and my mission go from here!

**Ho Koon Astronomical Centre** 

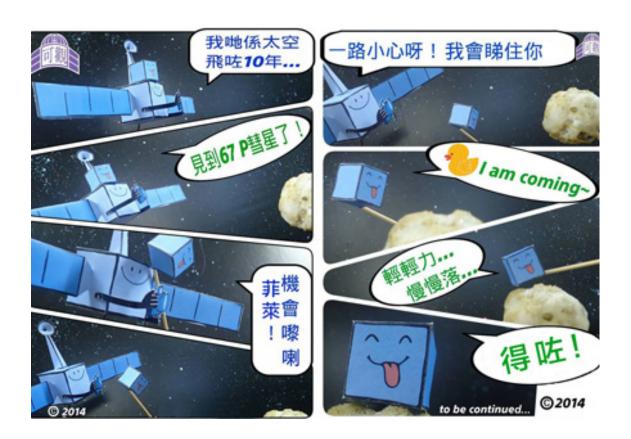
Hong Kong

# First Comet Landing - Rosetta Mission

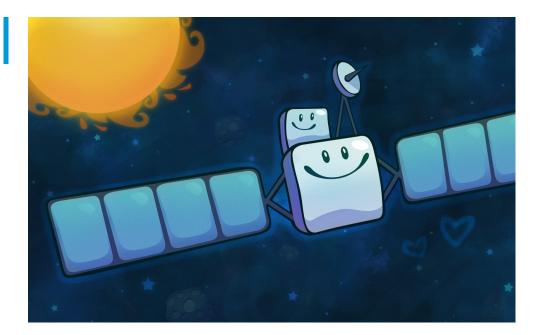
In Nov 2014, Astronomy teachers of our centre (\*) have created a series of comics in Chinese using paper model and images of ESA and comet model (made of ice, dry ice & soil) to keep tracking and promote the science exploration of Rosetta mission. Not only forwarding and translating ESA news, our team has published Chinese comics in Facebook hashtagged #CometLanding in a casual and funny way to promote astronomy and science in this >90% Chinese speaking city. After the landing, we have published an article to summarize the science and inspirations of Rosetta mission in the 3rd week of Nov, 2014.

Our Rosetta & Philae comics in Facebook:

- 1. Approaching Comet
- 2. Philae Landing
- 3. Philae in Dark
- (\*) Ho Koon Nature Education cum Astronomical Centre (<a href="http://www.hokoon.edu.hk">http://www.hokoon.edu.hk</a>) is a Hong Kong based field study centre, which concentrates on environmental and astronomy education services for schools and public.



irisuhime



I've been following ESA Rosetta Mission for the past two years. So many good memories! Thank you Rosetta and Philae. Here's my tribute to you and the team.

Emily Iarocci

USA

# Our End of Mission celebration cake



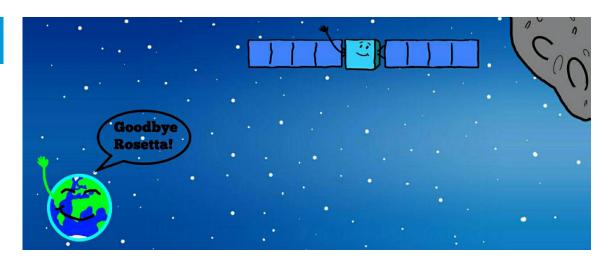
It's too cute to eat!

sam-albers



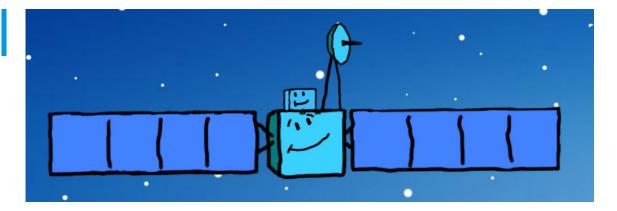
Rosetta with electric wires :)

#### sam-albers



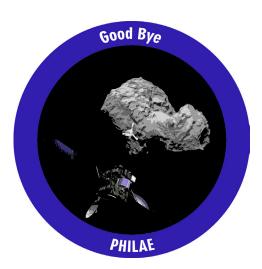
Farewell, Rosetta! We will miss you and Philae!

sam-albers



Rosetta and Philae

Fabrizio Guerrini Italy



This is the patch I did to say goodbye to 'our' favourite little lander, becoming the FIRST on a comet forever!!!

#### **Arthur Crépin-Leblond**

Germany

Dear Rosetta, dear Philae, dear ESA team, I will never forget this journey when you landed on a comet, for the first time!

What a remarkable team work, I want to congratulate you all, you made it possible and the discoveries will keep you busy for decades.

I enjoyed so much following day by day the discoveries of our two favourite robots, and the grand finale touched me deep in my heart, seeing the team removing their headsets for the last time was Something, the end of a mission, the success of a mission and opening doors to new ones!

It made me realise how curious the human being is and what he is capable of; combining maths, physics, chemistry, software, hardware all together then put it in a box ready to be sent far far away.

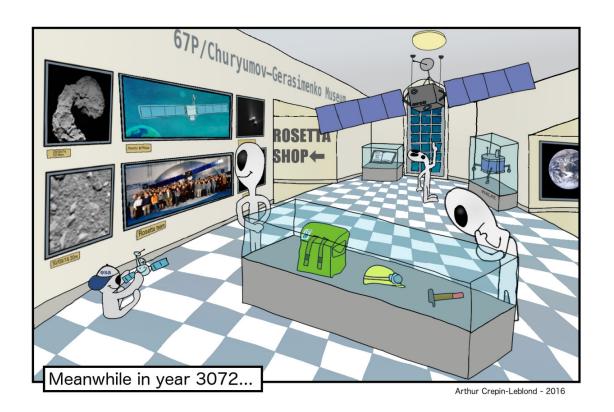
As a software engineer, I looked at the technical specifications and it was like coming back in time, even if I wasn't born when the robots got designed on paper. Rosetta's little heart kept oscillating at 25Mhz for 12 years, impressive. Other curiosity: the used programming language, Forth, I played with it and I love it, this language is robust, no wonder why Matt Taylor was so confident that Philae would land and got tattooed before.

I wanted to thank you so much for what you accomplished so I drew for you an alternative scenario to the end of the story, apparently you were also a source of inspiration out there.

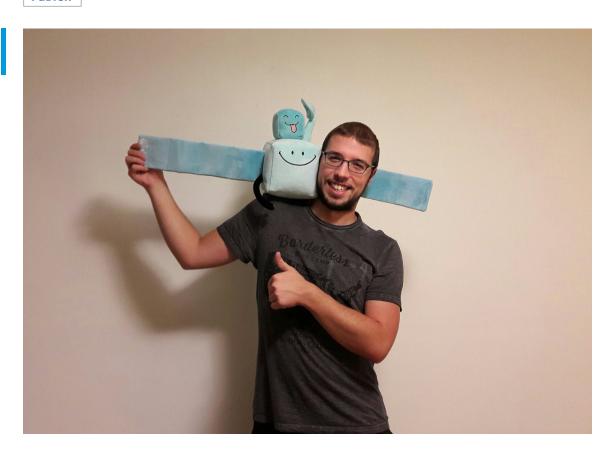
Sleep well Rosetta, sleep well Philae. ESA, get back to work! Other missions are waiting.

Hugs,

Arthur.

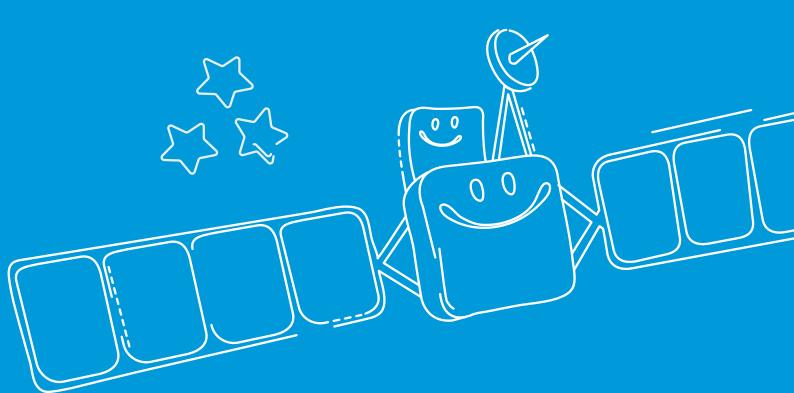


Fabien



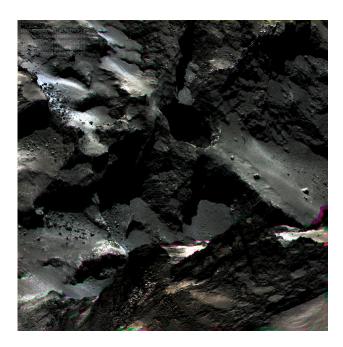
66 Rosetta Legacy

# 10. ASTROPHOTOGRAPHY



astroobserver

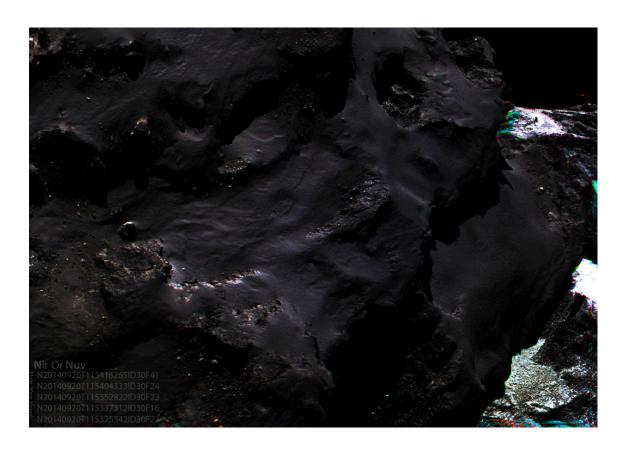
# Color composite, OSIRIS



Rosetta has been an opportunity to perceive at a distance the disconnect between observation and theoretical expectations.



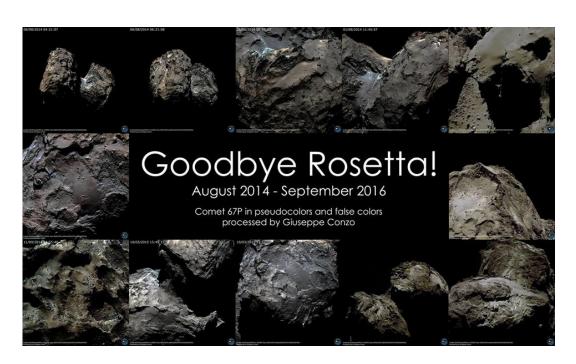
Frame numbers band pass and luminosity warp, all presented. Hapi chasm in false color. Thank you: ESA Rosetta mission, OSIRIS calibration team. For the reliable data, late as ever, but here non the less.

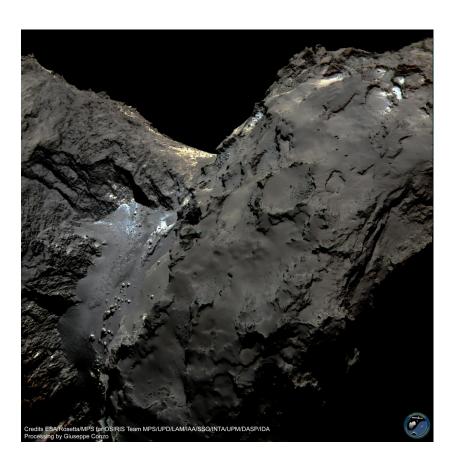


Hatmehit in false color. This part of the nucleus really is dark.

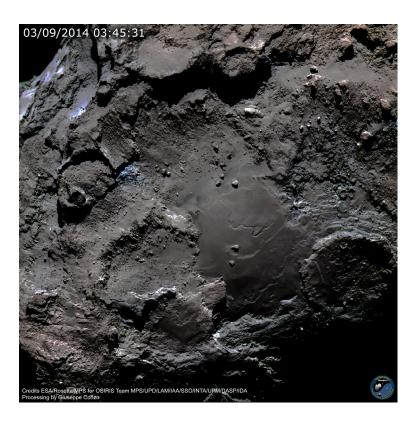
Giuseppe Conzo Italy

# Goodbye Rosetta!





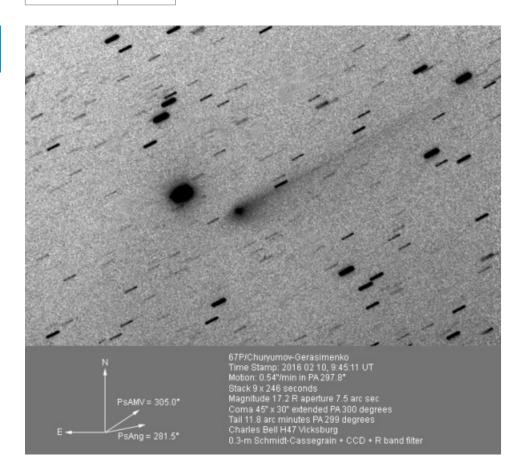
My false color processing. The color is obtained join NIR, Orange and Blue channel from ESA Archive Image.



My Imhotep Regio in false color processing. The color is obtained join NIR, Orange and Blue channel from ESA Archive Image.

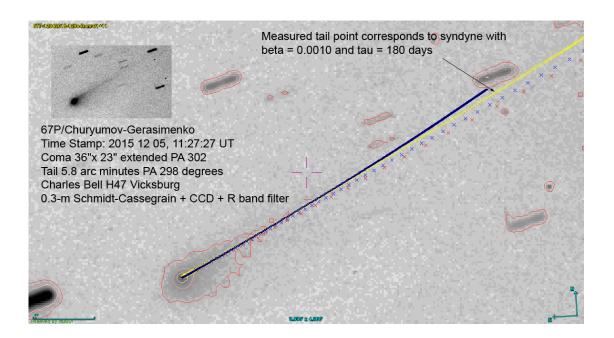
Charles Bell

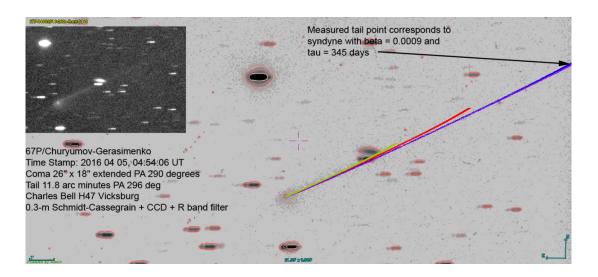
USA



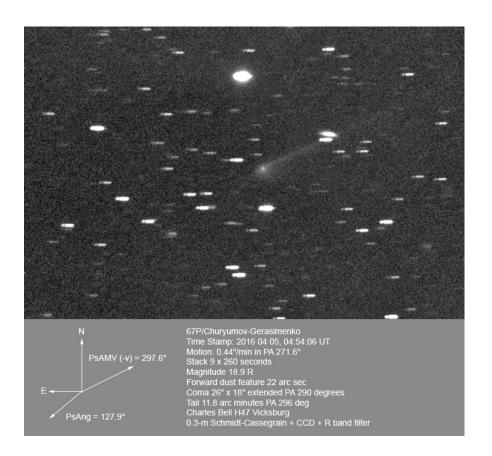


Observing and sharing my own observation images of comet 67P/Churyumov–Gerasimenko gave me a chance to see the comet's dust tail from the ground while the Rosetta spacecraft was observing from much closer. I routinely submit comet astrometry to the Minor Planet Center from my observation images and observed comet 67P/Churyumov–Gerasimenko during its 2008 and 2016 perihelion passages on many nights.

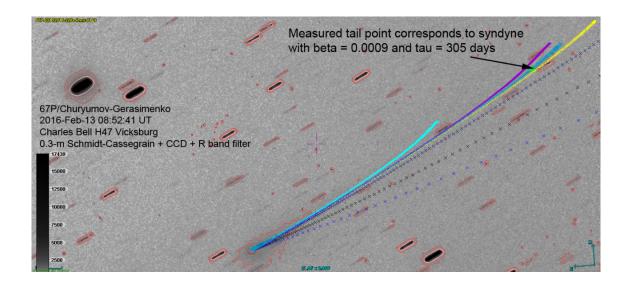


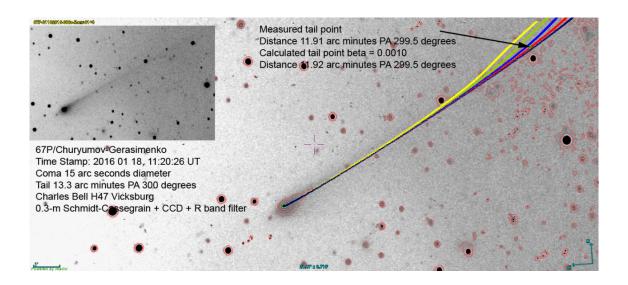


My observations are used along with all the many others to improve the orbital solution of 67P/Churyumov–Gerasimenko and other comets. It is a rather mundane contribution but without observations, we would have no idea precisely where a comet is in the sky. I use a 12 inch or 0.3 meter aperture Meade Schmidt-Cassegrain telesecope with an SBIG ST8-XME CCD camera plus f/6.3 focal reducer and red photometric filter and can take long exposures based upon the sky motion of the comet.

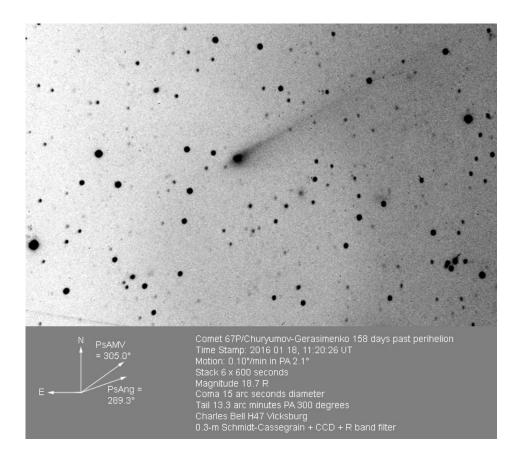


I have included one of many of my images taken on February 10, 2016 along with position angles of the extended sun-comet radius vector and negative velocity vectors. The dust tail lies close to the position angle of the negative velocity vector which shows that there was a concentration of larger particles making up the extended dust tail. My images gave me the opportunity to do a Finson-Probstein analysis and derive a beta factor of 0.0010 with a dust release time on the order of 290 days.





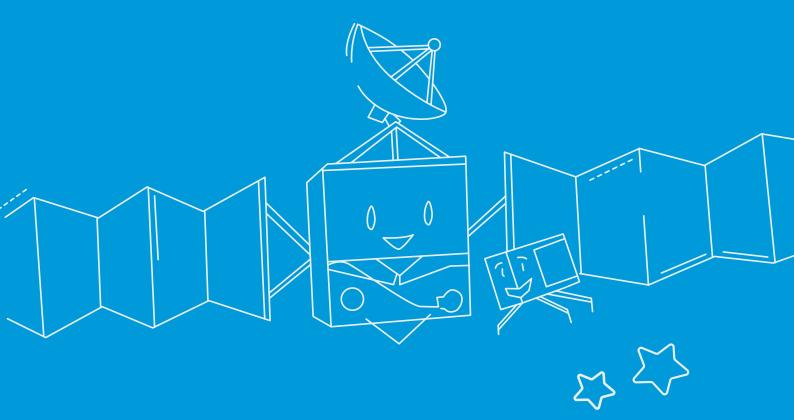
The dust tail on this comet was much longer in 2016 than I observed in 2008. I also was able to make photometric measurements of R Band magnitude and Afrho which were submitted to Cometas Obs. I enjoyed very much conversing with Matt Taylor from the Rosetta project team on Twitter and Facebook. I was also fortunate to share images and converse briefly with Dr. Klim Churyumov on Facebook. That was very exciting to get good feedback from him on my images and to know that someone appreciated my work.



I have a <u>Flickr photo album</u> of some of my best images of comet 67P/Churyumov–Gerasimenko online for anyone interested.

66 Rosetta Legacy

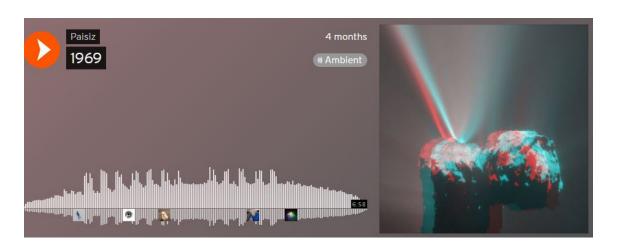
# 11. ARTISTIC HOMAGES: MUSIC, POETRY, FINE ART, FICTION, DESIGN AND MORE



Beka Khukhunaishvili Georgia

# 1969

"A Singing Comet" is pure inspiration...



Yvor Malone UK

# Song for Philae

This song was written whilst looking up at the stars from a hillside in the Caribbean.



**Calin** Romania

# Rosetta Visual Identity and Wallpapers

Hi there, I'm Calin, a designer from Romania, and I'm kind of a space nerd:) I'm religiously following your Rosetta mission and I wanted to tell you that your work is amazing and inspiring.

Anyway, you give a lot to humanity and I wanted to thank you for inspiring people all over the world by showing you some of the effects of that inspiration: D sooo... I made a Rosetta identity and some wallpapers for you to enjoy. Hope you like them, Cheers and keep up the good work!











And a gif

#### entre-lignes

The Rosetta mission made me dream like many people in the world and inspired me to imagine objects, one of the activities that please me the most.

The «Swing » pendant light is composed of several ellipses that draw the path of the Comet 67P/Churyumov-Gerasimenko, the Rosetta space probe and his journey to the comet.

The largest two ellipses represent the probe and the comet, it's two ribbons of wood enlightened with leds, toward the inside of the lamp. They meet at the rendez-vous between the Rosetta probe and the comet.

The large light source is a disk that reminds the Sun and around which, revolve small rings of wood, staggered in height. They symbolize the gravity assist manœuvres necessary to Rosetta to accomplish his journey.



#### **Bek Hoffman**



#### Francis Rocard

France

After the amazing landing in November 2014, Philae has stimulated French artists Jean-François et Martine Luye, who decided to paint the lander on the nucleus of 67P. Here is the painting.

Francis Rocard, CNES Rosetta programme Manager



Giovanni Lonard

**Italy** 

# a short collection of really short poems, in italian

After the Grand Day Out on the Comet, on the 15th of November of 2014 I wrote this really short poem, in italian:

poèsia

**UPDATE** 

sono seduto sulla Testa di una Cometa, e nella penombra dormo, e sogno di Principi, e di Volpi e di Rose, e di Uomini in Pace. forse mi sveglierò, e forse no. I'm sitting on the head of a comet, and in the dim light I sleep, and dream of Princes and Foxes and Roses, and Men in Peace. maybe I'll wake up, and maybe not.

then, on the 6th of June of 2015, I wrote this other:

poèsia

PHILAE

update: comete, e me insieme. update: comets,

and me together.

and then again, on the 14th of June of 2015, I couldn't resist to write again:

poèsia

UPDATE!

sono seduto sulla testa della mia Cometa, e nella penombra ho dormito. e ho sognato, di pace in terra agli uomini di buona volontà. buongiorno! I'm sitting on the head of my Comet, and in the dim light I slept. and I dreamt, of peace on earth to men of good will. good morning! and then on the 8th of January 2016:

poèsia

#### **UPDATE**

ho volato a lungo, e poi mi sono seduto sulla testa della mia Cometa, e nella penombra ho dormito, e ho sognato di principi, e di rose e di volpi, e di uomini in pace. ho aperto un occhio, un giorno ma il viaggio è lungo, e forse dormirò per sempre. vi saluto. I flew for a long time, and then I sat on the head of my Comet, and in the dim light I slept, and I dreamed of princes, and roses and foxes, and men in peace.
I opened one eye, one day but the journey is long, and perhaps I will sleep forever. Goodbye.

and the last one, on the 12th of February:

poèsia

#### **UPDATED UPDATE**

ero fatto della stessa materia di cui sono fatti i sogni, e la mia piccola vita era circondata dal sonno. ma è stato bello, oh, se è stato bello! I was made of the same stuff as dreams are made of, and my little life was rounded with a sleep. but it's been good, Oh, it's been good!!

and that's it. thank you all for everything. it was great, oh, it was really great!

Giovanni

Siobhan Logan

UK

# Where Philae Boldly Goes ...

... We follow. #AreWeThereYet? What's not to love about a mission that delivers more drama, danger and comebacks than a sci-fi franchise? Only last week, Philae provided another cliff-hanger as Rosetta tracked down the long-lost lander. Marvellous as the engineering has been, it's the imagination that's kept me riveted to my desktop porthole. ESA has transported us across the solar system via our Twitter-feeds. Beam me down, Scottie. Those razor-sharp OSIRIS photos of 67P put me right there, kicking up the carbon-dust. Where early Egyptians drew constellations on coffin-lids to guide departing souls, ESA let us ride the stars. This virtual adventure inspired me to create a poet's saga for the digital age: Philae's Book of Hours

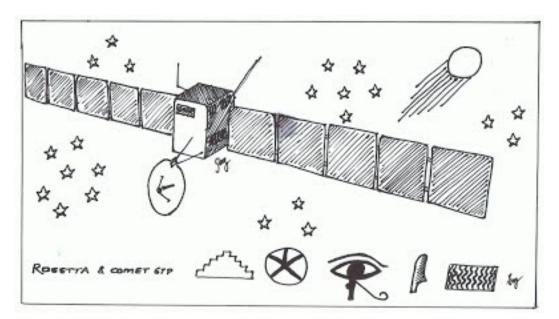
Philae to me is a chattering soul-bird. And though its song has since fallen silent, it had us spellbound in its season. Its cometary resting-place Abydos was named for an ancient cemetery. In Egyptian mythology, after death a human-headed soul-bird flits between the lands of living and dead. I thought of ESA scientists at computers communing across vast distances to their metal avatar in this underworld. But Philae ventured into the dark on our behalf too, an android explorer probing an icy wilderness, an ingenious box of tricks sifting air and dirt for the secrets of creation. And most extraordinary of all, it talked to us. Well-named for an obelisk that unlocked an ancient language, it kept up a stuttering dialogue for days. #LifeOnAComet Its subsequent silence always hummed with the promise of more.

You bide your time, faithful as a mummified dog... When you wake at last, Philae you are babbling to yourself a snakeskin song of telemetry a cometary Book of Hours ...'

Rosetta is the mother-ship goddess, blue-winged like the protective figure of Isis, who knew a thing or two about resurrections. So whip-smart, quick on its feet, engineering with attitude. Think Princess Leia before the bikini. But this solar-panelled spacecraft could also be sun-god Ra's midnight barge crossing the dangerous realms of the afterlife. When ESA's scientists described the comet's icy jets as a 'living thing, a dragon waking up,' the storyteller in me was hooked. Rosetta's zig-zagging course was a pyramid trajectory. It had to dodge comet 67P's fierce outpourings, just as Ra and his 'crew of gods' had to steer past Apophis, the fire-spitting snake. Surely this is a classic Hero-Quest, a space-voyage in an aluminium boat on a wing and a prayer. Han Solo minus the laser-gun.

And then there is the comet, captured in mesmerising black-and-white shots in all its rugged variety. I am addicted to those OSIRIS close-ups. Tracts of wildernesses marked not by space-boot but by Philae's human-made SESAME feet. I see comet 67P as a book. Let's call it a book of maps, a cartography of 26 alien regions 'named for Gods of the Old Kingdom'. All very Star-Gate. ESA's Egyptian analogy for the space mission finds its fullest expression in their colour-coded maps of 67P's rocky terrains. Rosetta's own burial chamber will be a cometary pit of hell. I love that it's named for Deir-El-Medina, an Egyptian archaeological site filled with tomb-workers' rubble. But the comet is a book of spells too, a book that spits and fires and sings. A book that hides its secrets deep in pages of ice-dirt, in a crease of rock or sudden abyss:

'... The comet is spitting creatively uncharted twinklings, carbon-glints, constellations of grit, a cosmic sneeze of light.'



Some Earthlings are sad that the mission is drawing to a close. That we will cease our conversation across space with Rosetta's satellite. No more fly-by postcards from the underworld. No time-delayed messages from the box-robot forever hanging on its cliff. Yes, I'll miss all that. But the scientific stories that Rosetta-Philae gifted us are still being decoded. We will be thumbing the pages of 67P for decades to come. And this space-epic has already become a tale of us at our best, coming together in many languages, over borders and twittersphere, to achieve an extraordinary feat. No wonder we painted a face on Philae and begged it to call home. Like the Egyptians, we've daubed this fable on our walls. Rosetta and Philae are celebrated in our poems, rock albums, t-shirts, e-wallpapers, sculptures, cartoons, comet-shoes, installations and origami. They are already legends. As the Pyramid texts promise, 'you have died but you will live.'

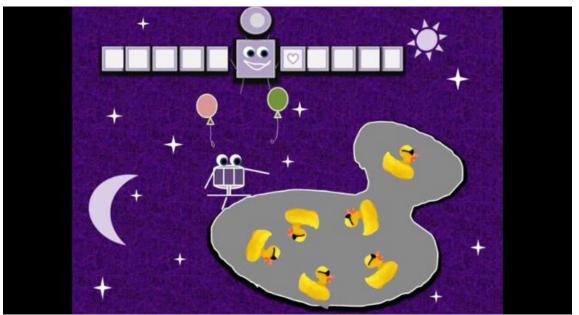
Siobhan Logan

Martina Gemmar | Germany

# Rosetta Song Video

Hi, the mission inspired me to write this song and I hope you like it! Martina





**Edward Blakely** UK

## The Rosetta Suite

It's simple really: Rosetta, Philae, and their team of dedicated scientists inspired me to compose a suite of orchestral music – the biggest and most challenging that I've ever undertaken.

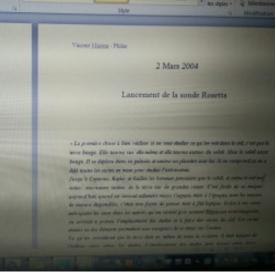
It was really quite easy and pleasing to draw from the energy and enthusiasm that Rosetta inspired around the world. Not since the moon landing have the general public engaged with science and astronomy in such a passionate way.

I hope it has encouraged the younger generations to engage in STEM subjects, and ensured them that those crazy dreams can still come true!

The Rosetta Suite

Vincent Maston France





Philae and Rosetta gave me the inspiration to write a novel.

After writing a first novel a few years ago, I couldn't find the inspiration for another.

I spent hours thinking about characters, plots, only to throw them away.

That was until the Philae landing.

As soon as this wonderful machine started sending data to Rosetta, I was hooked.

I started writing on the very night, and after a few months, the novel was born. It is called Philae, and is about a young girl whose father used to lead a team of scientists working on Philae, in the ten years between the Ariane launch and the Philae landing.

I tried to put into it the passion for science that this wonderful mission gave to countless kids worldwide. Even though I didn't find a publisher for it yet, I am beyond grateful to the whole Rosetta team for pulling me out of this creative slump.

Good bye Rosetta, we will think of you for a long time.

Aya



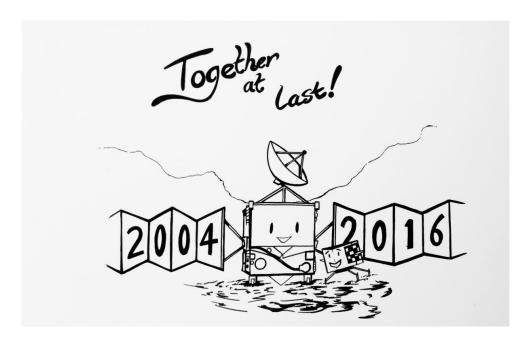
Goodbye Rosetta <3

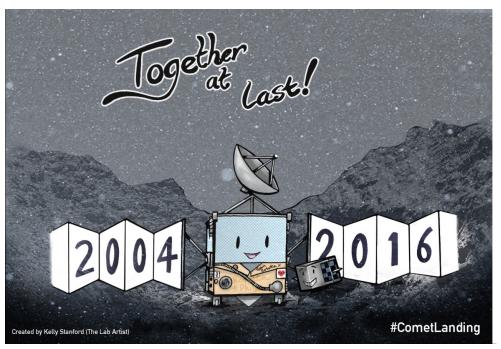
**Kelly Stanford** 

UK

# Rosetta and Philae – together at last sketch

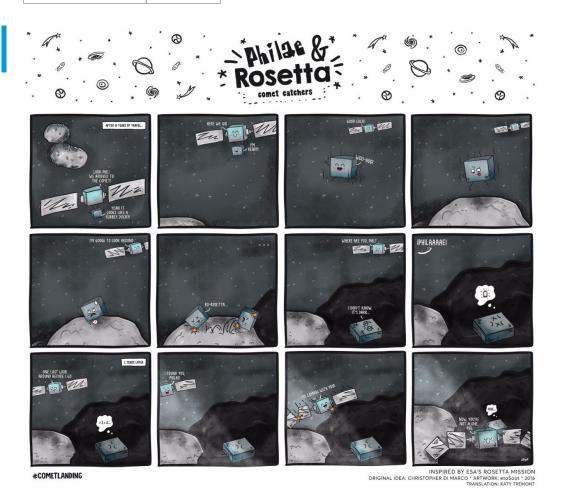
Here is a sketch I made last month, I originally posted it on twitter but have only just got round to posting it to my Tumblr. Hope you like it!





This is the full colour finished version of an illustration I did a few weeks back to commemorate the end of Rosetta's mission. All the textures present are made from photographs taken by Rosetta as it orbited around 67P/Churyumov–Gerasimenko.

Catherin Villasmil Venezuela



Philae & Rosetta - Comet Catchers.

This mission affected us deeply. We portray them as cute machines with warm feelings because that is what we feel when we think about them.

Original Idea: Christopher Di Marco // Artwork: @etosoot // Translation: Katy Tremont

Stuart Atkinson UK

### "67P"

I have followed the ROSETTA mission from well before launch, in my imagination flying alongside ROSETTA every day as she sped out towards the comet, rendezvoused with it and then studied it. As well as using its beautiful images in my astronomy and science outreach work, the ROSETTA mission has inspired me to write many "astro-poems" but this is the one which I think captures the beauty of the comet, and the romance and drama of the mission, the best. I will miss ROSETTA when it has gone, but will look forward to the science that will follow. https://astropoetry.wordpress.com/2014/08/27/67p/

#### **Idil Orhon**



My contribution to the Rosetta inspirations:)
A Neruda poem that goes along well with this mission:

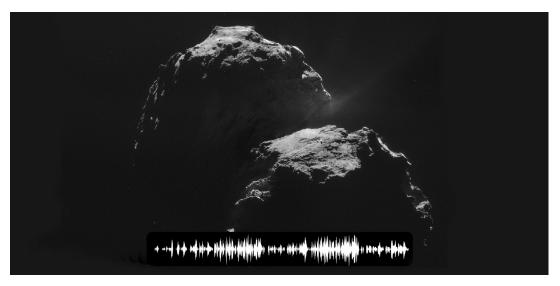
"He who does not travel, who does not read, who does not listen to music, who does not find grace in himself, she who does not find grace in herself, dies slowly."

Luis Luque Alvarez

Venezuela/Hungary

# "The Sound of Universe"

Rosetta Mission gave a lot of answers and discoveries about from where we are coming, where we are, and where we go. As a musician it was fantastic to listen to the comet 67P sound.

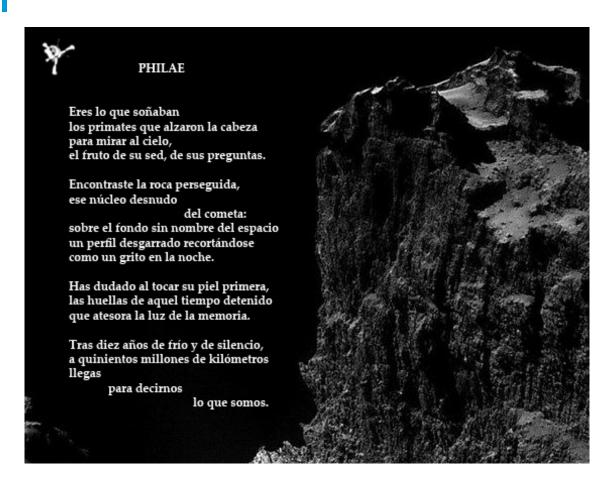


Credit: ESA/Rosetta/NavCam

**Carlos Briones** 

Spain

# **PHILAE**



You are the dream of The primates that raised their heads To look at the sky, The fruit of their thirst, of their questions. You found the pursued rock, That naked core Of the comet: Against the nameless background of space A torn profile trimmed Like a scream in the night. You hesitated to touch its skin first, The traces of that prisoner time That treasures the light of memory. After ten years of cold and silence, Five hundred million kilometres away You arrive To tell us

What we are.

#### Stephen Atkinson

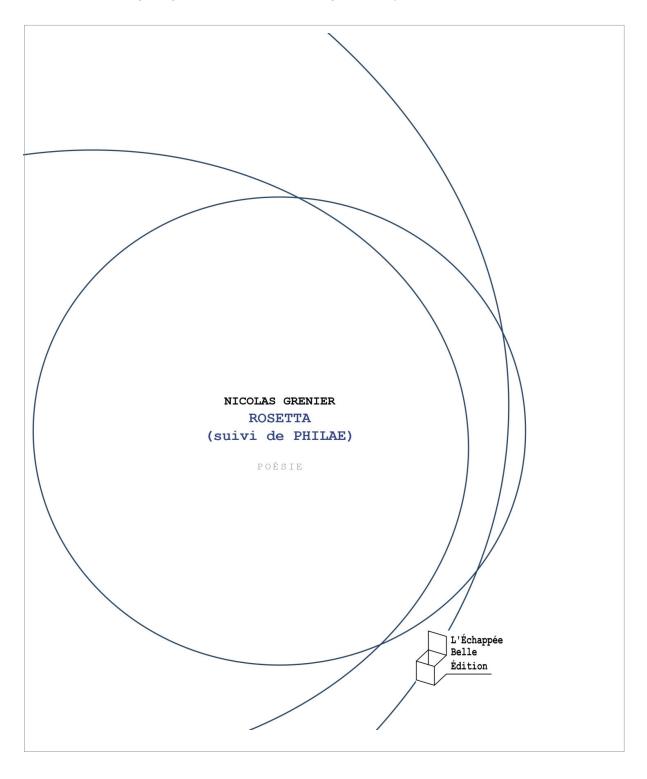


It's a whole dark, complex, glorious world down there...

Nicolas Grenier France

# A collection of haikus for Rosetta and Philae in France

The collection of haikus "Rosetta, suivi de Philae" is a tribute to science, scientists and space agencies that have worked on the Rosetta space program since the 90s. It is also a tribute to literature and more specifically, from Greek poets, Aratus or Empedocles, to contemporary poets such as Durs Grünbein or Jacques Reda, who all referred to the mystery of the stars and the sky in their poems.



This collection is also a bridge between science and poetry, because poets need science as scientists need poetry.

The collection has three parts: Kourou, Rosetta and Philae.

- The first part Kourou describes the preparation of the rocket, the space probe and the robot inside the laboratories. The end of this part relates the launch of the Ariane rocket from the sky of Guyana to the atmosphere.
- The second part tells the journey of the space probe from the earth to the comet 67P. There, the space probe flies over Mars and the asteroids Steins and Lutetia, deep inside the silence of the solar system.
- The last part takes place on the comet 67P. Philae walks on the icy comet. Rosetta orbits around the comet that speeds towards the sun. The trip ends on september 30th with the death of the two working heros: Philae and Rosetta.

The universe has over thirteen billion years according to the European satellite Planck. The history of poetry has five thousand years. Haiku is even younger, four hundred years. Nicolas Grenier chooses haiku for this collection because it is a short form of poetry. On the one hand, the minimalism of poetry. On the other hand, the maximalism of the universe. The collection contains 176 haikus. 45, for the first part, as the height of the Ariane rocket. 64, as the size of 32 meters of solar panels, and 67 haikus as the comet 67P that astronomers Klim Ivanovych Churyumov and Svetlana Ivanovna Gerasimenko discovered.

For the collection, Nicolas Grenier studied comets, and especially the 67P comet, he also studied the Rosetta space program. Since childhood, the poet looks at the sky through the television show "World Tours, tours of the sky" with music by Georges Delerue. The poet is a scholar of modern times, always influenced by sciences, arts and culture. Forever, everything that is human touches his heart. In the postface entitled "Poésie and cosmos", the poet Luis Mizon says "if there is an adventure that concerns man, science and poetry all together, it is obviously the one about our origins. But after all, who are we?"

Former student at Sciences Po Paris, French poet Nicolas Grenier is "one of the most prolific poets of the young generation in the French culture." (Alexia Gavriil). He has written several collections of poetry and was published in a hundred French and international journals. His poetry evokes the world of the twenty-first century, its major trends, artistic, scientific and cultural. The author is particularly influenced by German poets, American and French, as Gottfried Benn, Emily Dickinson, Joachim du Bellay.

Title: Rosetta (suivi de Philae) Literary genre: Poetry, haiku

Language: French

Publisher: Editions L'Echappée Belle

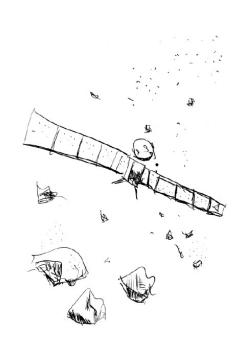
Year published: 2016

Location of publisher: Paris ISBN: 978-2-919483-389 Pages number: 72 pages

#### **Emma Wright**

UK

Here's a poem by Rachel Piercey from our new anthology 'Watcher of the Skies: Poems about Space and Aliens', aimed at children aged 8+. Rachel wrote this partly for the 2016 National Poetry Day theme, which is 'messages', in the poem she explores different kinds of communication. The illustration is by me, Emma Wright!



#### Message for Rosetta

#### Rachel Piercey

Rosetta, Rosetta, tell us how long it will take you to get to the Kuiper-belt comet?

> Ten years, ten years, past asteroids, Mars, soaking up sun rays to power my task.

Rosetta, Rosetta, what's in your pocket to give as a gift to the Kuiper-belt comet?

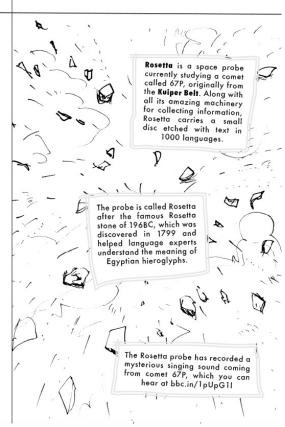
> A message, a message, a disc etched with words, so whoever finds it might understand Earth.

> > (35)

Rosetta, Rosetta, now you're in orbit! What have you found on the Kuiper-belt comet?

> It's singing, it's singing, a high flinty hum – don't know what it means but our talk has begun...

> > C3



(36)

Lucile Peyre France

# Rosetta, Philae et moi

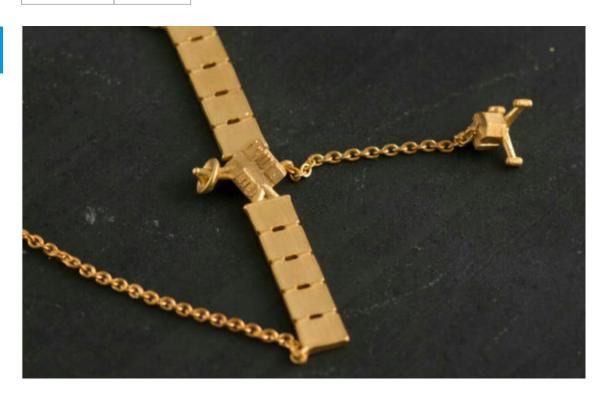
J'ai rencontré Rosetta et Philae sur Twitter. On était en 2014 et un hashtag venait de m'interpeller. En quelques clics je comprends ce qui est en train de se passer et me voilà à suivre en direct l'arrivée de Philae sur la comète Tchouri. C'est un truc qui me parle, en tant que prof de philo et en tant qu'amatrice de SF. J'écrivais mon premier roman à cette époque là, un roman qui se passait dans l'espace, qui parlait de la découverte d'une nouvelle planète. Et voir ce petit robot se poser loin là haut sur une comète, ça me faisait rêver, ça me donnait des idées. Pour la petite histoire c'est en live twittant l'arrivée de Philae sur Tchouri que j'ai fait connaissance avec l'un de mes lecteurs bêta, Thomas. Aujourd'hui je viens de sortir mon troisième roman. Ça se passe toujours dans l'espace et Philae y fait une apparition. Dans le tome 4, il deviendra un élément récurent. Alors je suis un peu triste de penser que Rosetta va cesser de nous envoyer ces magnifiques images de Tchouri, mais dans mon imagination, et dans mes romans, ce n'est pas la fin de l'histoire.

## Rosetta, Philae and me

I met Rosetta and Philae on Twitter. It was in 2014 and a hashtag had come to me. In a few clicks I understand what is happening and here I am following live the arrival of Philae on comet Tchouri. It is something that speaks to me, as a teacher of philosophy and as an amateur of sci-fi. I wrote my first novel at that time, a novel that takes place in space, about the discovery of a new planet. And to see this little robot landing far away on a comet, it made me dream, it gave me ideas. For the little story, it is while live twittering the arrival of Philae on Tchouri that I got acquainted with one of my beta readers, Thomas. Today, I just released my third novel. It still takes place in space and Philae makes an appearance there. In volume 4, it will become a recurrent element. So I'm a little sad to think that Rosetta will stop sending us these beautiful images of Tchouri, but in my imagination, and in my novels, this is not the end of the story.

**Akif Teoman** 

Turkey



A tribute to Rosetta mission, a man made device landed on a comet! Why shouldn't I design silver jewelry for this amazing achievement:)

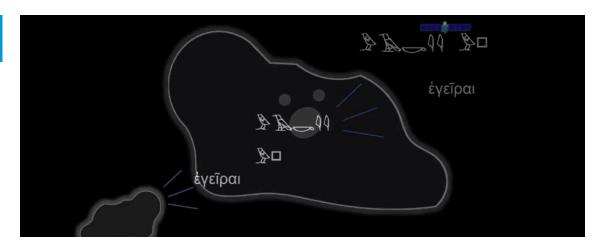
Manuel

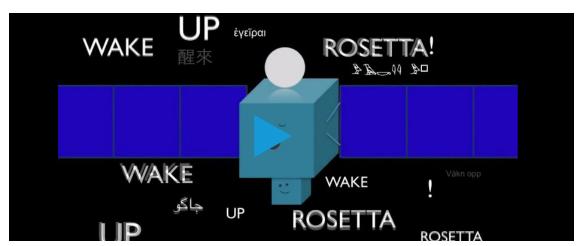
# Rosetta Haiku

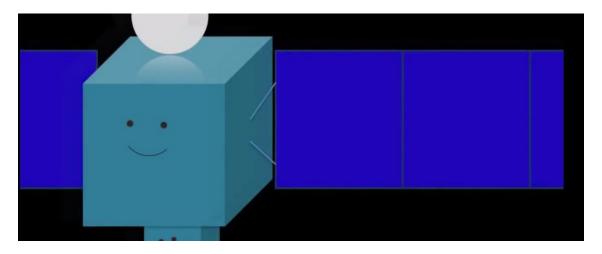
Aciago viaje,
termina en la sombra gris
de una colina.
Compañero ahí,
de un largo viaje espacial
a nuestro origen.
Anoche te vi,
por fin, bajo la sombra,
pronto te alcanzo.

Fateful journey,
Ends in the grey shadow
Of a hill.
My friend,
Of a long space journey
To our origin.
Last night I saw you,
Finally, under the shade,
I will reach you soon.

Katarina Eriksson Sweden







I've always had an interest in space and science, and as a graphic designer I've taken the opportunities when I can to work with related things. When the #WakeUpRosetta contest came up I decided to make a stop motion animation though I had never done one before. Using the idea of Rosetta as a translator of 67P/Churuymov-Gerasimenko (just as the Rosetta stone was the key to other languages) the video has 67P yelling "wake up Rosetta" and a myriad of languages that Rosetta translates as it wakes up. An idea I came up with together with my mum who is a researcher in the linguistics field and ancient Greek. Very interdisciplinary!

ESA has really succeeded in making us care about the Rosetta spacecraft and Philae the lander almost as if they were people, or at least characters in a story. With that I think a broader range of people have also begun to have an interest in comets, in space travel and in space exploration and science.

I followed closely the different steps of the mission, and my family started to follow it too, and texting me when there was any Rosetta news in the news. Even though I haven't personally been involved in the mission, I felt sad when Rosetta landed on the comet and felt connected to everyone else who followed the Rosetta mission.

Katarina Eriksson, Sweden

## **Volker Paelke**



Philae and Rosetta's new home.

Thanks for an awesome story of discovery and an inspiring scientific adventure!

Andrew Manson USA

# Rosetta and the Comet



Hello to everyone at ESA!

When I heard y'all were landing Rosetta on the comet forever, I thought that was the most incredible thing. I was so in awe of everything y'all had achieved, that I'd been planning to write a piece of music to just basically give to ESA to accompany the descent hoping someone would see/listen to it someday, but then I saw the "What does Rosetta Mean to You?" post on Tumblr and got very excited that the track could have a place to reside, among friends.

I hope you enjoy it.

## Track Description:

"I've been following the mission for years and I have such an incredible admiration and respect for the Rosetta and Philae's team, and everyone at ESA. When I heard the spacecraft was going to be landing on the comet forever, it seemed so epic, beautiful, sad, happy, incredible, etc.

The piece itself starts with a kinda sped-up timeline of events including launch, flight, the majesty of space and the comet upon approach, and jumps right into the final descent (to the head of the duck :)).

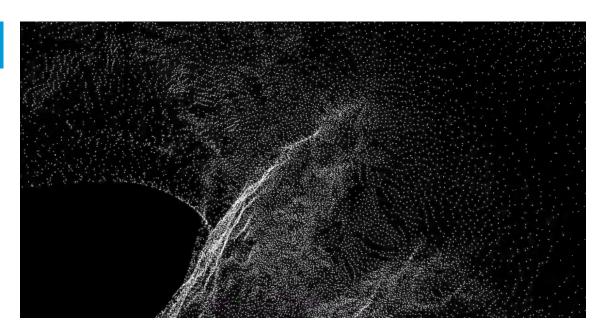
Thank you everyone at ESA for striving to achieve greatness, thank you Rosetta for the hope and inspiration you gave me, and I hope this piece of music can accompany you down to the comet."

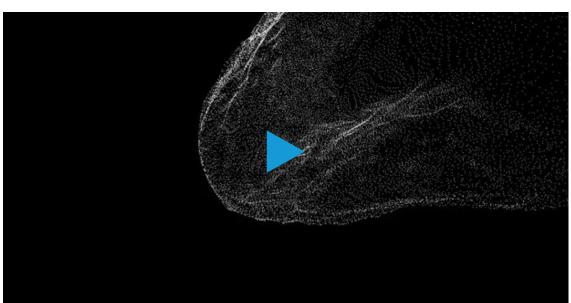
Good luck on everything over the next couple of weeks.

Sincerely,

Andrew Manson, composer, big fan :)

João Martinho Moura Portugal



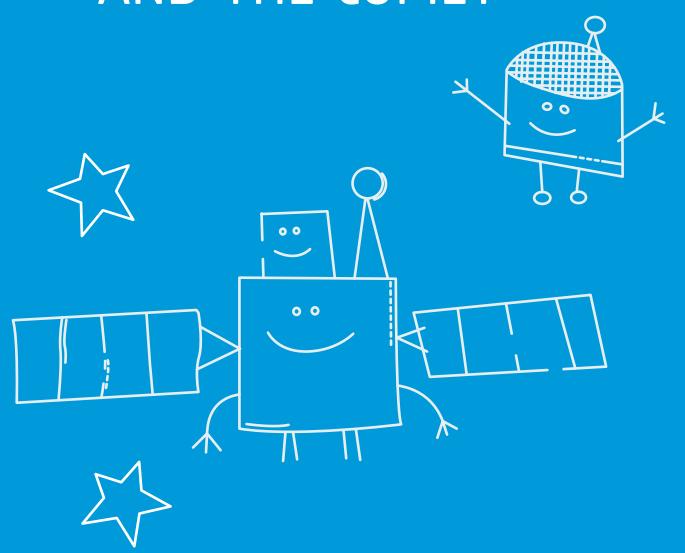


"67p: an unexpected topological space" João Martinho Moura, 2016. Data source:

ESA/Rosetta/MPS for OSIRIS Team MPS/UPD/LAM/IAA/SSO/INTA/UPM/DASP/IDA

66 Rosetta Legacy

# 12. NAMED AFTER ROSETTA, PHILAE AND THE COMET



Jacob Reimer USA



Silas Philae Reimer just a few months after launch, and now, more than a year along. It's been a wild ride and we're finally getting some sleep here at Mission Control. We had already decided on our son's middle name last spring, and when we were married June 13 of last year, Philae woke up during the ceremony to say hello!

Gaia Legori Italy

## Comets on Earth

Hello to everybody,

My name is Gaia and I am passionate about astronomy. I cannot explain how proud I felt when I read that we got into the orbit of Comet 67P/Churyumov–Gerasimenko, because I believe it is such a big achievement for human kind, that I have been following Rosetta mission ever since.

I am also a sporty girl and play lacrosse for the Italian national team. Last summer I founded a new women's lacrosse team in Milan and I was looking for a name for my new

team. I thought a lot about possible names, but none really convinced me until one afternoon I found myself staring at the book I was reading about Rosetta mission and FUREKA!

I named the team Comets Milano Lacrosse!

I believe we are pioneers in spreading lacrosse in Italy as Rosetta and Philae and ESA mission's team have been in reaching Comet 67P/Churyumov–Gerasimenko, recovering from unforeseen events, studying and analysing data from the Comet. I am happy to have chosen this name, and I like to think that my teammates and I are little comets running on the Earth.

P.S.: We also developed a <u>logo</u> for the team resembling a lacrosse stick catching a comet.

I wish you good luck for your last act Rosetta. Sincerely,

Gaia

**Aleksandr Svidesskis** 

**USA** 

# The best thing!

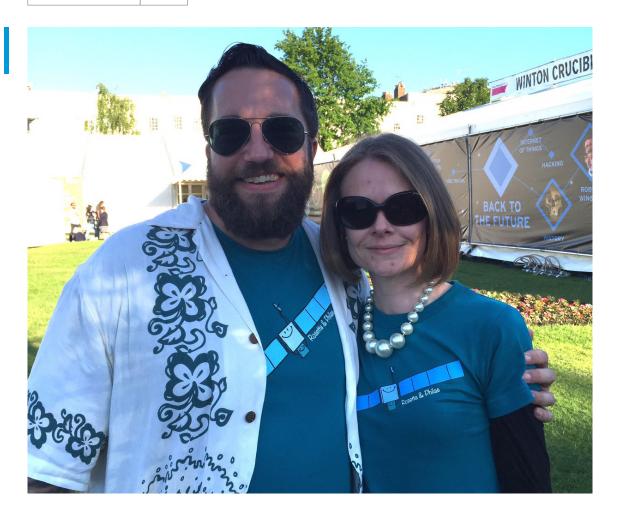
That mission was very truly important to this disabled marine here in America, before it started as a child listening to Stephen Hawking and with the basics of the milky way and now fast forward to this past year, and this mission was like a longtime homework and following, in the most important way it has changed my life an now forever it will, because my lil babygirl was born a couple months ago and guess her name, yes it is, Rosetta, for the very reason is that Rosetta will be forever like my love for this miraculous mission and a very beautiful an life changing it will always be for me, I've always have had the love for the ESA, no offense to NASA, but the ESA is much more influential and diverse in my own love of the billions and billions of stars out there and how the ESA translates it into reality to us novice star-gazers!

With all that being said, I'm no astro-physicists or etc, I'm kinds homebound with my disability, but I have my high powered telescope and laptop to do my work, but with what little I have, I do a lot with it, so on that note, I at least appreciate, you reading my lil simple story.

Thank you, and plz, keep up the awesome work, that I follow daily! Aleksandr Svidesskis

Rosetta Porte

UK



I am lucky enough to share my name, Rosetta, with the incredible spacecraft and, consequently, have felt a special connection with her and the mission.

I have followed Rosetta for the last 12 years, from the launch in March 2004 to the final descent last week. The highlight for me was meeting Matt Taylor at the Cheltenham Science Festival in June 2015 – I got to meet a world class scientist and he got to meet a human Rosetta for the first time!

Coverage of the mission has reached far and wide and Rosetta and Philae have touched the lives of many who would not, perhaps, have ordinarily been interested in space or science. Now, when people find out my name the often say: "Oh, like the space mission!"

The mission has brought science and space exploration into the public eye and into their minds. That, together with the extraordinary data which the mission has gathered, is the legacy of Rosetta. A legacy that is, in my opinion, as important as the legacy of the Stone after which we are both named.

I am proud to be a Rosetta.

Eliška Cassels

Czech Republic

# Arrival of the Comet

As we are interested in space, we were at home discussing the landing of the Philae launcher on the comet. I chose this as the moment to tell my parents that I'm pregnant by showing them an ultrasound photo.

My father (still deep in the comet debate) said upon seeing the ultrasound: "so, which bit of the comet is this?"

And so, 8 months later, my daughter was born and her middle name is Kometa! (Czech for comet)

### **Ashlee Gee**



This is Philae. Who landed in our life, explored like crazy, and then slept for a very long time...

