

Art.Science.Incubator

Deborah Conti, Artistic Director / Stephen Long, Science Director

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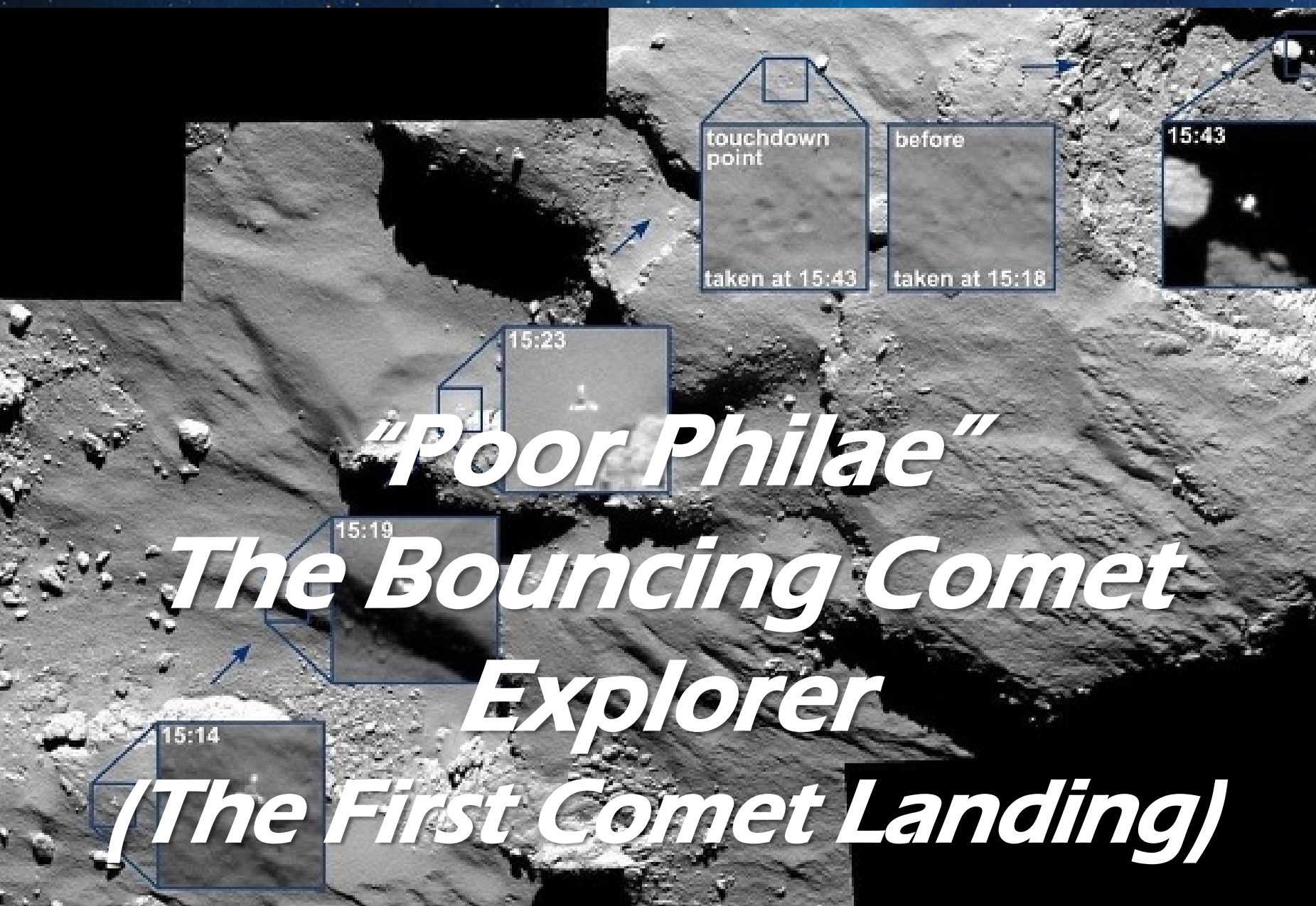
Come Join Us for our Inaugural Science Lecture This Friday Evening 7pm – 8pm

Free Admission

On-Line Registrations will have priority seating



Art.Science.Incubator@gmail.com
www.ArtScienceIncubator.com




"Poor Philae"

The Bouncing Comet Explorer

(The First Comet Landing)

The screenshot shows the website's navigation menu with options for YOGA, ART, SCIENCE, SPECIAL EVENTS, OUR WEBSITE, MY INFO, ONLINE STORE, and HELP. The event schedule is displayed for Friday, 10/23/2015, from 7:00 pm to 8:00 pm. The event is titled 'Lecture - Poor Philae with Stephen Long' and is part of the 'Inaugural Science and Technology Series'. The lecturer is Stephen Long, and the presentation is free. A 'Sign Up Now!' button is visible at the bottom of the event details.

Register On-Line at
www.artscienceincubator.com
(click on Science Activities)



Art.Science .Incubator

www.ArtScienceIncubator.com

Stephen W. Long
Science Director

Instansiation LLC

Click on the Activity Box
of Interest for Individual
Web Pages

**Art.Science
.Incubator**

www.ArtScienceIncubator.com



Art Activities

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Science Activities

Special Projects 04

**Class Schedules
and Payment Portal**



On-Line Software and
Mindbody Connect Applications

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Special Projects 08

**Stephen's
Special
Projects**

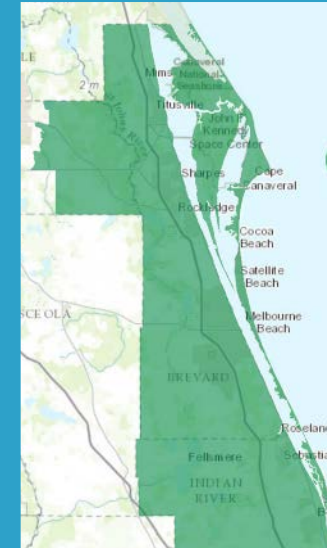


**Deborah's
Art and
Projects**



**Gallery and
Special Events**

**Florida's 8th
Congressional
District**



Special Projects 13

Special Projects 14

Special Projects 15

Special Projects 16

“Poor Philae”
The Bouncing Comet
Explorer
(The First Comet Landing)

Lecture 23 October 2015

Comet 67P/Churyumov–Gerasimenko

- 67P/Churyumov–Gerasimenko (abbreviated as 67P or 67P/C-G) is a comet, originally from the Kuiper belt, with a current orbital period of 6.45 years, a rotation period of approximately 12.4 hours and a maximum velocity of 135,000 km/h (38 km/s; 84,000 mph).
- Churyumov–Gerasimenko is approximately 4.3 by 4.1 km (2.7 by 2.5 mi) at its longest and widest dimensions. It was first observed on photographic plates in 1969 by Soviet astronomers Klim Ivanovich Churyumov and Svetlana Ivanovna Gerasimenko
- It came to perihelion (closest approach to the Sun) on 13 August 2015.

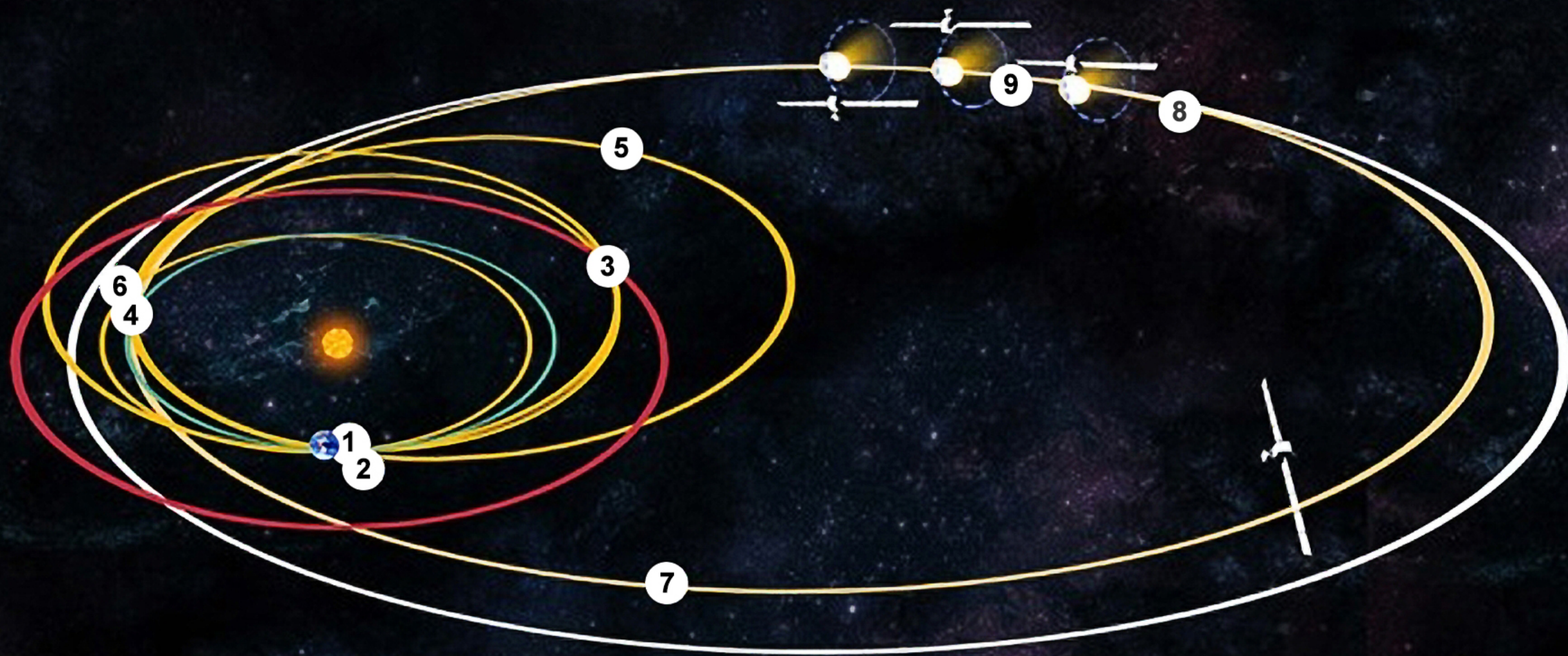
This is Photoshop – its Not Going to hit the Earth!



Rosetta

- Rosetta is a space probe built by the European Space Agency launched on 2 March 2004. Along with Philae, its lander module, Rosetta is performing a detailed study of comet 67P/Churyumov–Gerasimenko.





1. Launch, March 2, 2004
2. First Earth flyby, March 3, 2005
3. Mars flyby, February 26, 2007
4. Second Earth flyby, November 14, 2007

5. Asteroid Steins flyby
6. Third Earth flyby, November 11, 2009
7. Asteroid Lutetia flyby
8. Arriving at the comet in 2014
9. Rosetta observes comet 67P/Churyumov-Gerasimenko

● Mars' Orbit ● Earth's Orbit ● Rosetta's Orbit ● Comet's Orbit

rosetta's trajectory

Orbital Dynamics

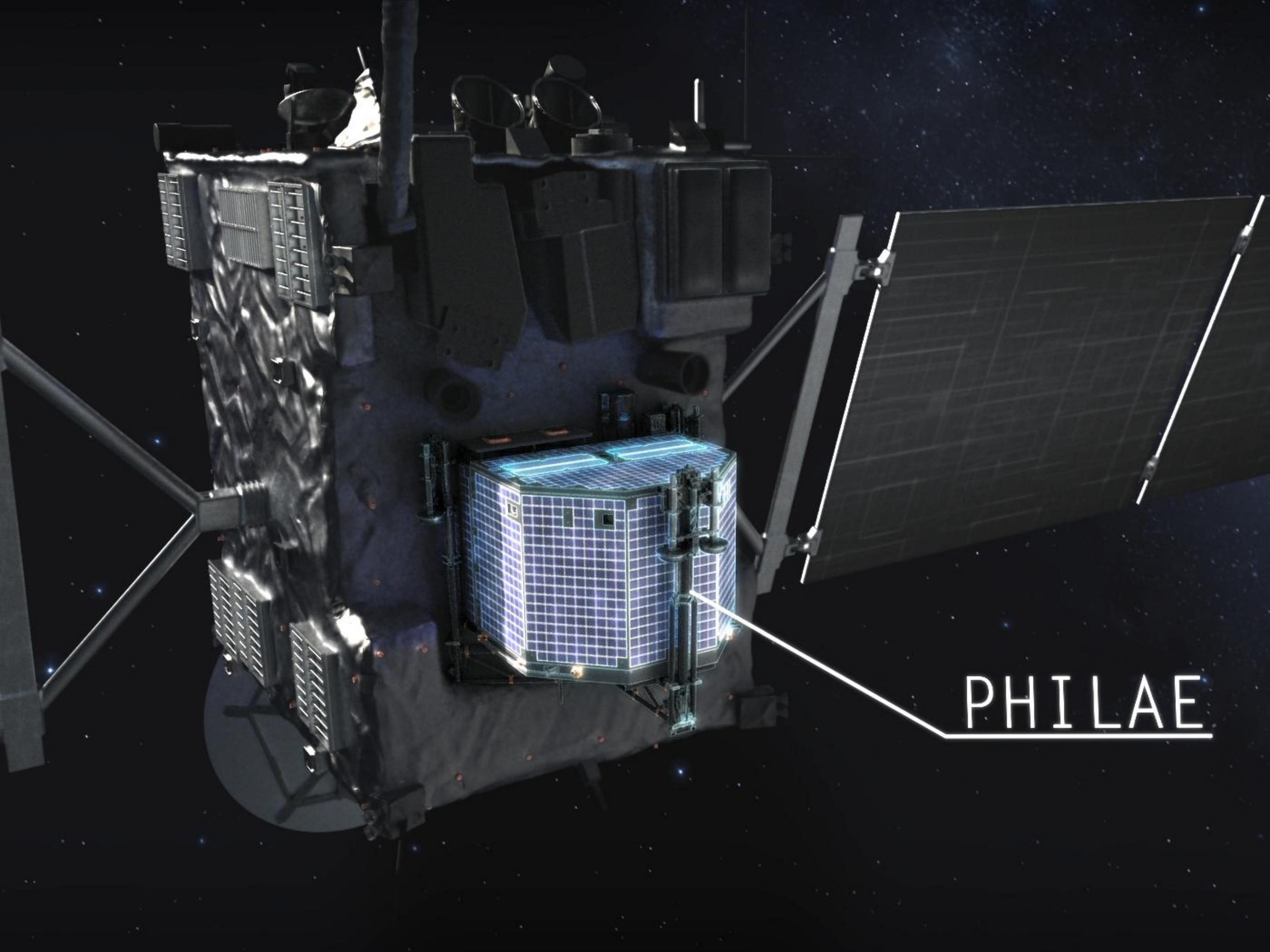
- <https://www.youtube.com/watch?v=iEQuE5N3rwQ>



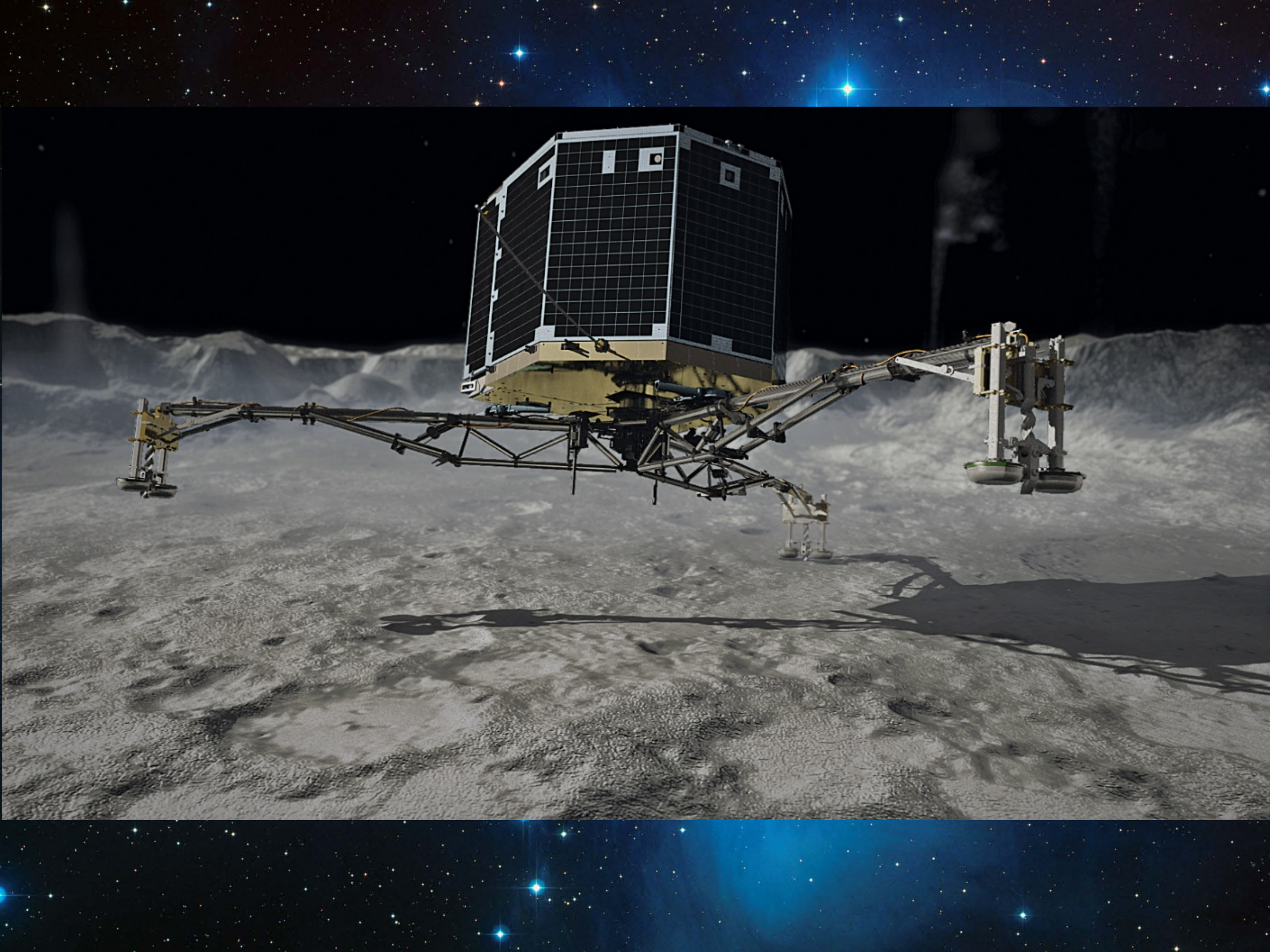
Comet 67P/Churyumov-Gerasimenko as Imaged by Rosetta

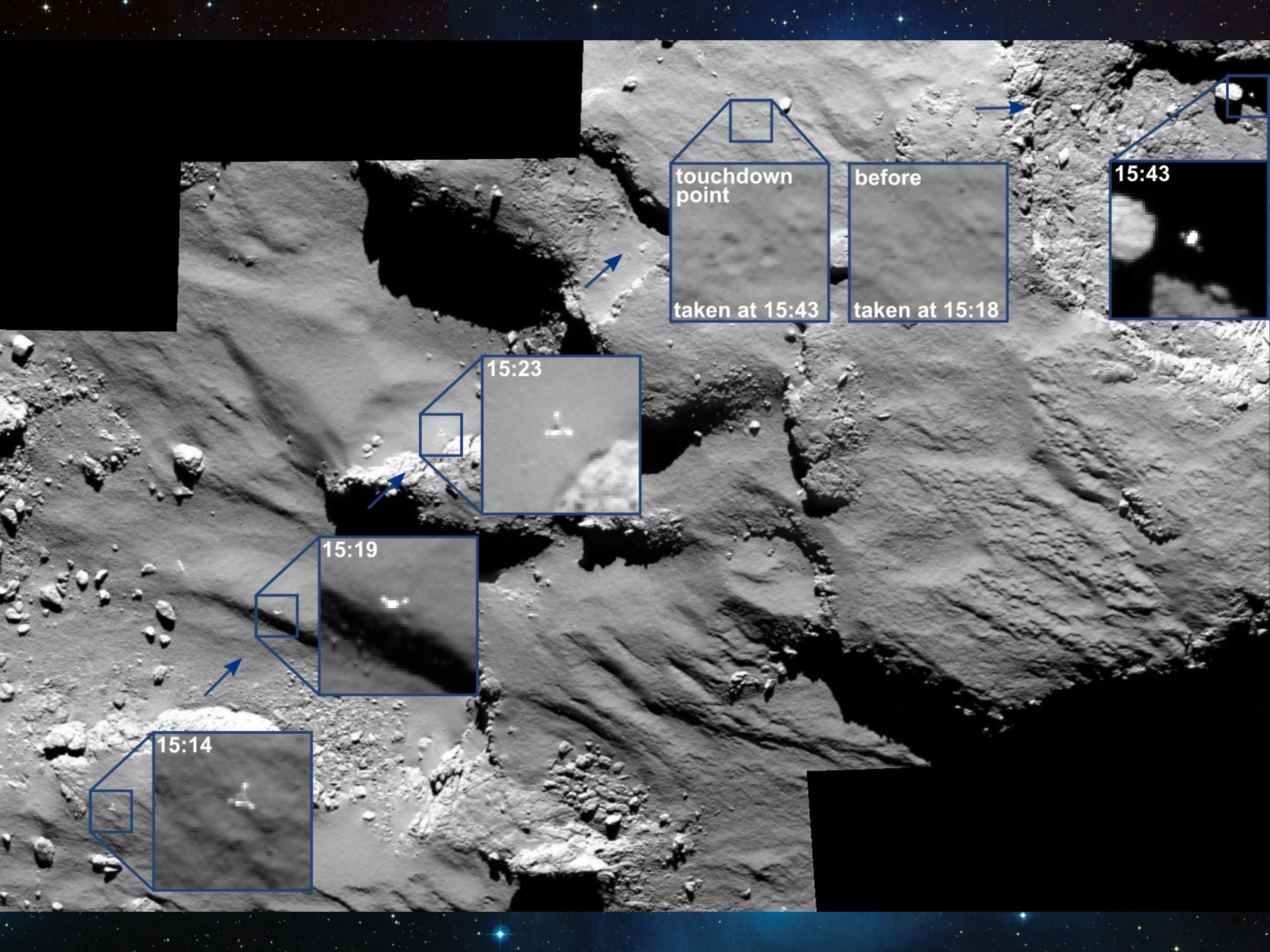
Philae

- Philae is a robotic European Space Agency lander that accompanied the Rosetta spacecraft until it landed on comet 67P/Churyumov–Gerasimenko, more than ten years after departing Earth on 12 November 2014, the probe achieved the first-ever soft landing on a comet nucleus. Several of the instruments on Philae made the first direct analysis of a comet, sending back data that will be analyzed to determine the composition of the surface.
- The lander is named after the Philae obelisk, which bears a bilingual inscription and was used along with the Rosetta Stone to decipher Egyptian hieroglyphs.



PHILAE





touchdown
point

taken at 15:43

before

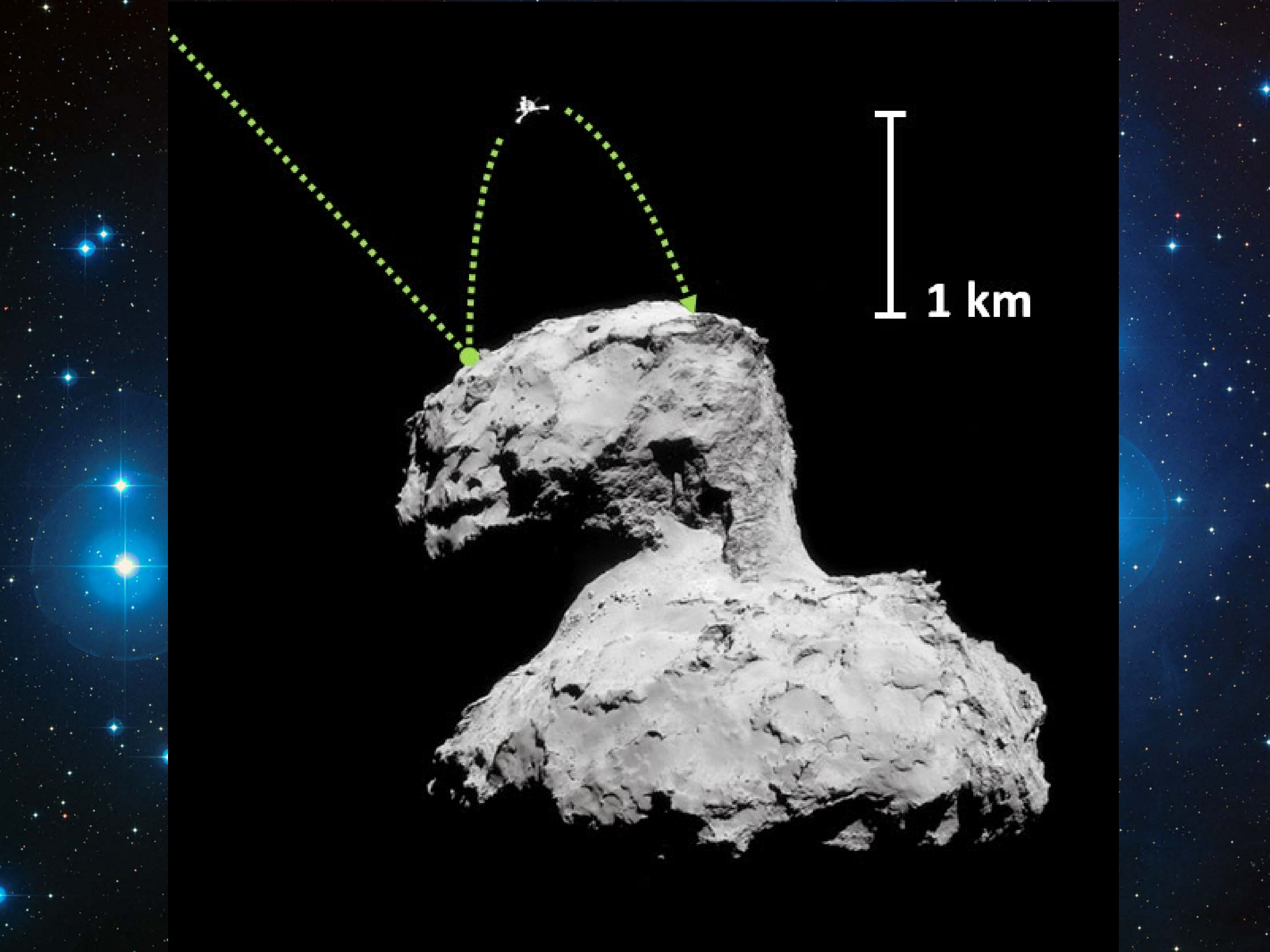
taken at 15:18

15:43

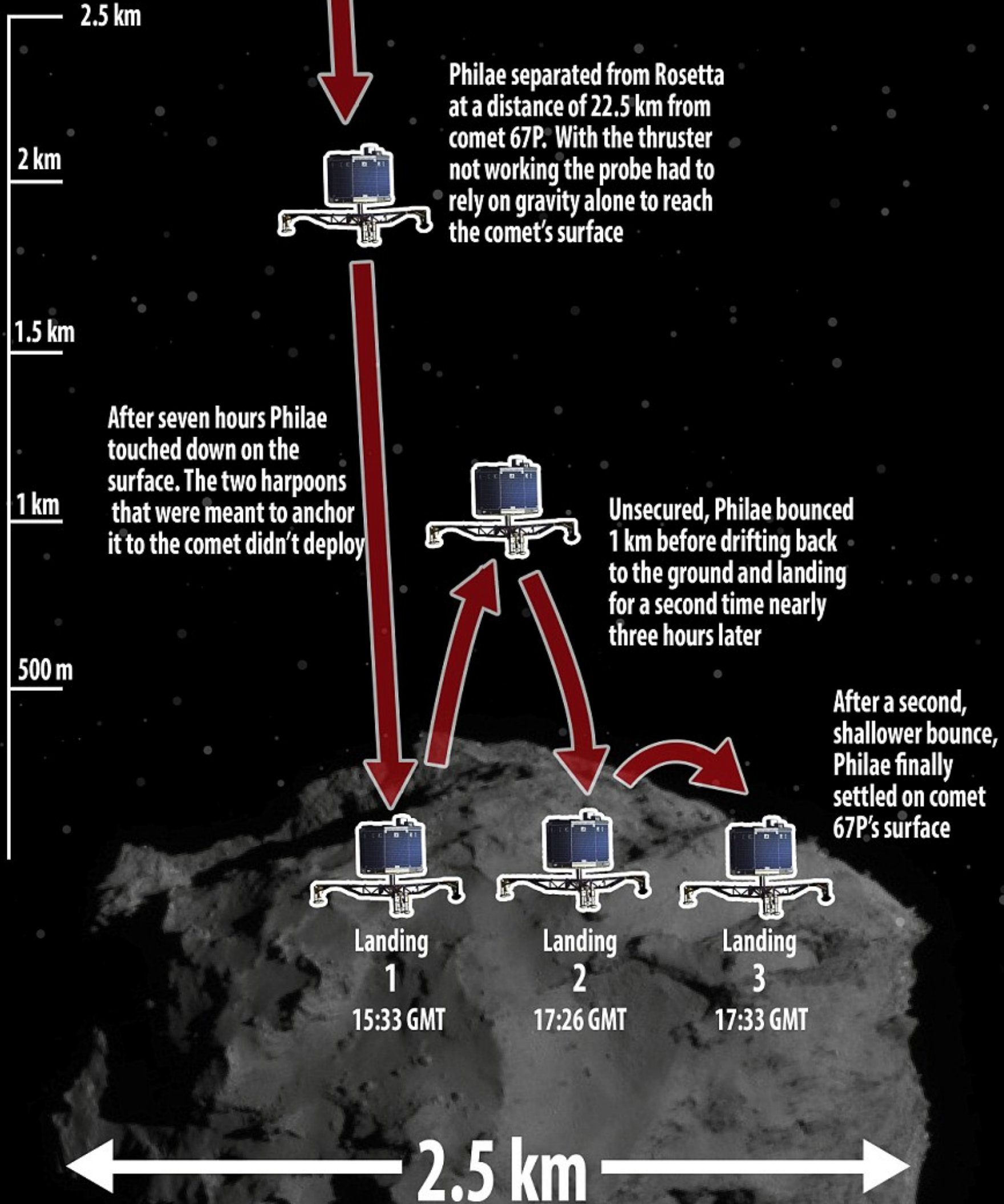
15:23

15:19

15:14



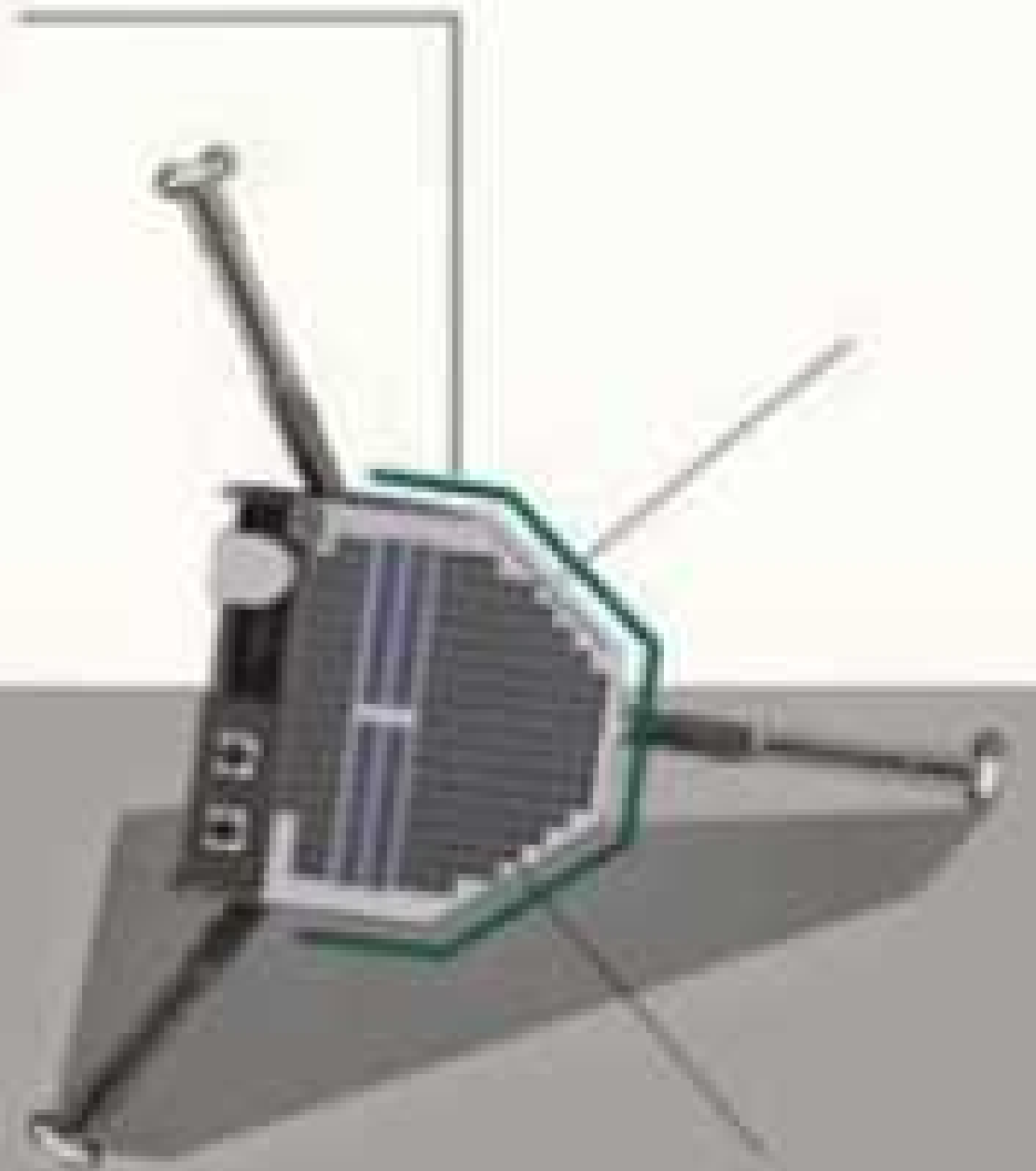
1 km



Philae lander

How ESA thinks Philae has landed

Solar Panels

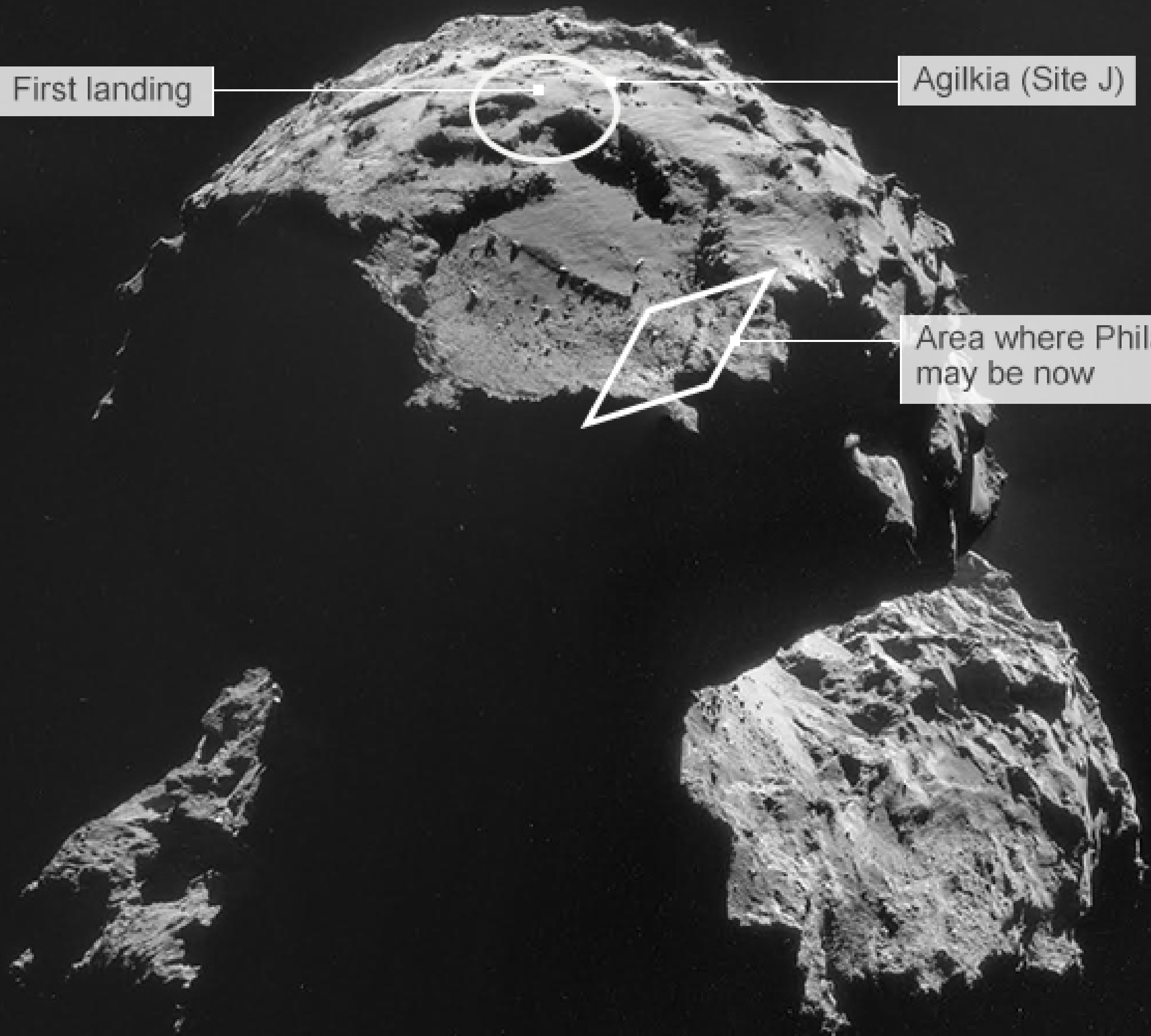


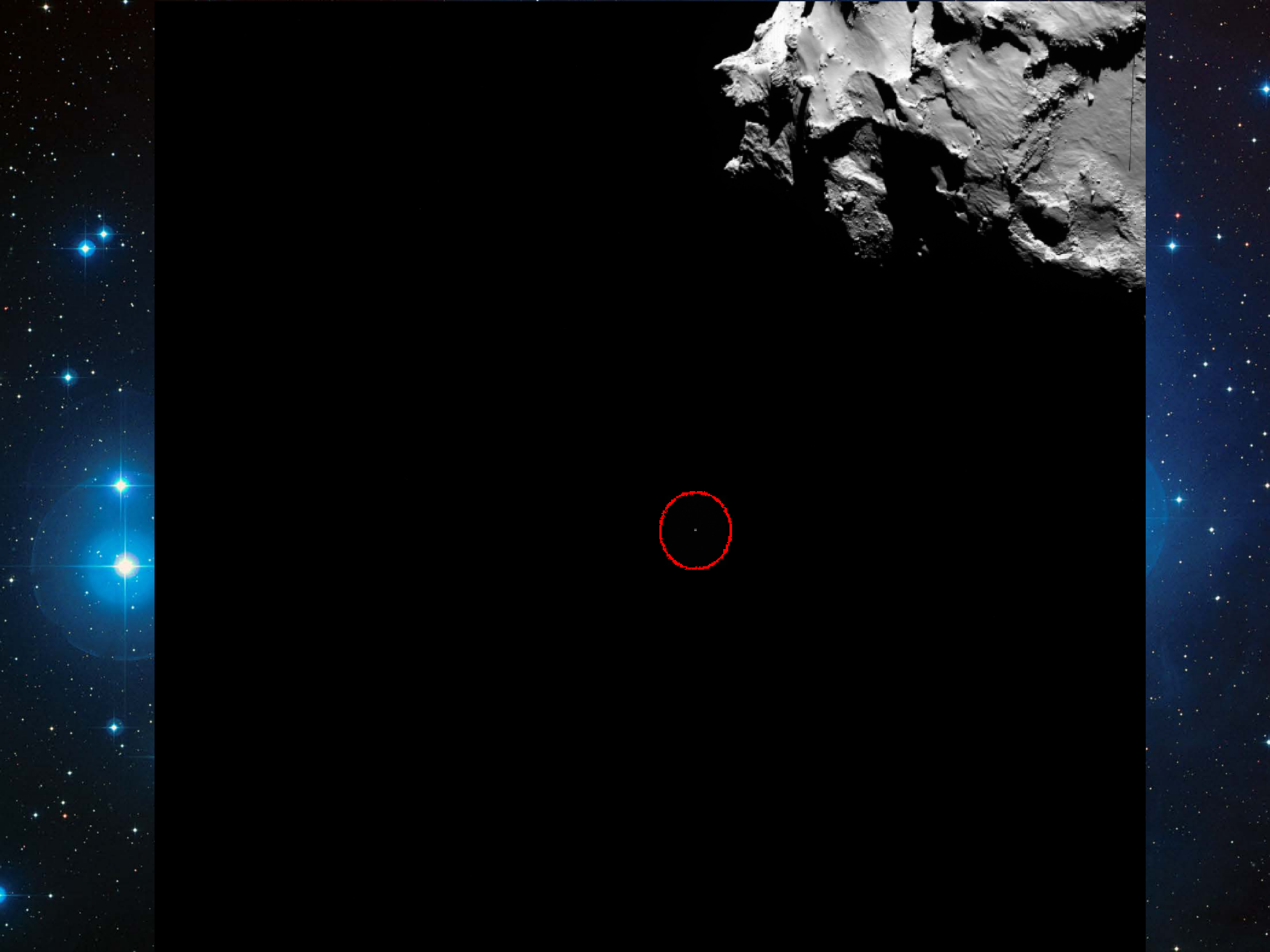
www.youtube.com/user/kafadsky #wts
Kafadsky NEWS

First landing

Agilkia (Site J)

Area where Philae may be now






Philae Phones Home

 Philae Lander @Philae2014 · 10h

My [#lifeonacomet](#) has just begun
[@ESA_Rosetta](#). I'll tell you more about my
new home, comet [#67P](#) soon... ZZZZZ
[#CometLanding](#)

  3.1K  2.3K 

[View conversation](#)

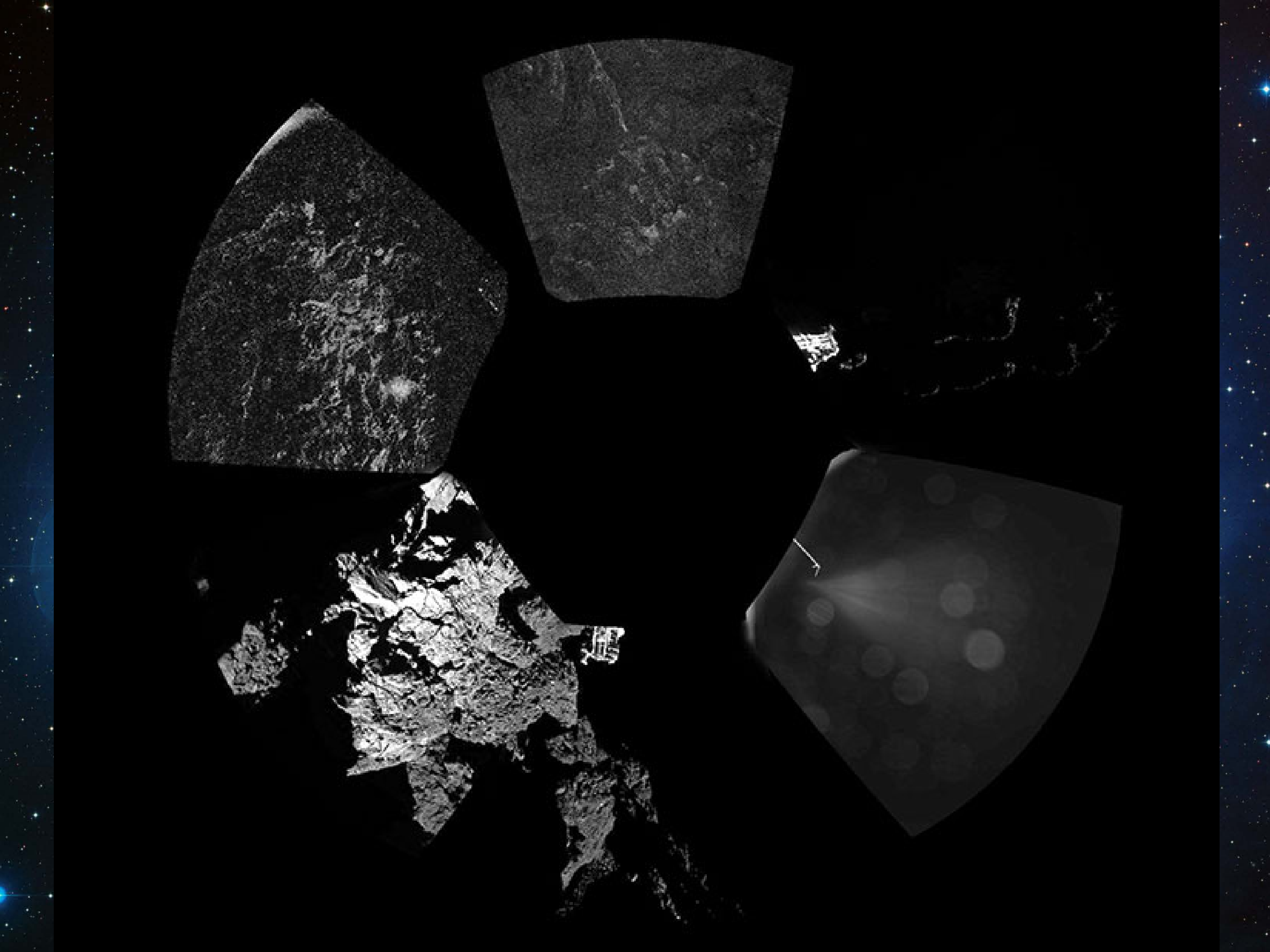
 Philae Lander @Philae2014 · 10h

Thank you, [@ESA_Rosetta](#)! I did it! I
became the first spacecraft to land on a
comet & study it! But it's not over yet...
[#CometLanding](#)

  1.7K  1.7K 

[View conversation](#)





Philae Science Results

- Data from the SESAME instrument determined that, rather than being "soft and fluffy" as expected, *Philae*'s first touchdown site held a large amount of water ice under a layer of granular material about 25 cm (9.8 in) deep.
- The mechanical strength of the ice was high and that cometary activity in that region was low. At the final landing site, the MUPUS instrument was unable to hammer very far into the comet's surface, despite power being gradually increased. This area was determined to have the consistency of solid ice or pumice

Philae Science Results

- In the atmosphere of the comet, the COSAC instrument detected the presence of molecules containing carbon and hydrogen. Soil elements could not be assessed because the lander was unable to drill into the comet surface
- Upon *Philae*'s first touchdown on the comet's surface, COSAC measured material at the bottom of the vehicle which was disturbed by the landing, while the Ptolemy instrument measured material at the top of the vehicle.
- Sixteen organic compounds were detected, four of which were seen for the first time on a comet, including acetamide, acetone, methyl isocyanate and propionaldehyde

Philae Phones Home



Philae Lander @Philae2014 · 10h

.@ESA_Rosetta I'm feeling a bit tired, did you get all my data? I might take a nap...
#CometLanding



3.2K

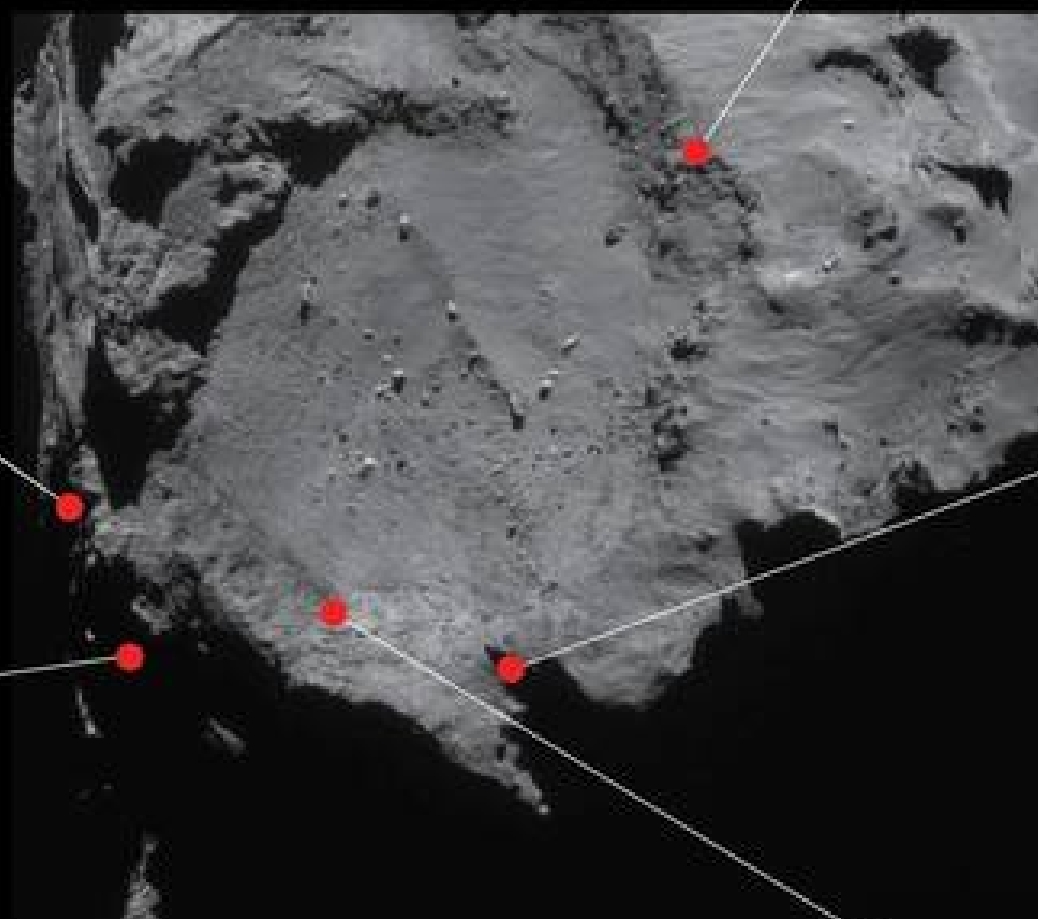



2.4K



Philae in Safe Mode

- On 15 November 2014, Philae entered safe mode, or hibernation, after its batteries ran down due to reduced sunlight and an off-nominal spacecraft orientation at its unplanned landing site. Mission controllers hoped that additional sunlight on the solar panels by August 2015 might be sufficient to reboot the lander. Philae communicated sporadically with Rosetta from 13 June to 9 July 2015.



The background of the image is a deep space scene filled with numerous galaxies and stars. The galaxies are in various orientations and colors, including bright blue, orange, and yellow. The stars are scattered throughout, with some appearing as bright white or yellow points and others as fainter, multi-colored specks. The overall effect is a rich, multi-colored cosmic field.

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