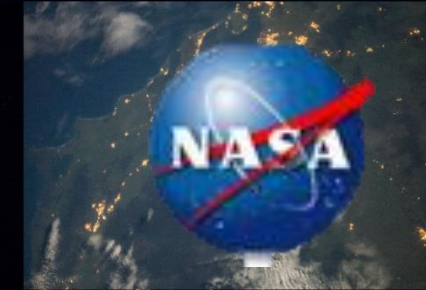




Cities at Night

A. Sánchez de Miguel, J. Gómez Castaño,
D. Lombrana, M. Aubé, A. Domínguez, B. Fernández,
JR. Solera, M. Vela,
J. Zamorano, J. Gallego, CC.M Kyba
and ... 15864 volunteers
Universidad Complutense de Madrid
Cepeg Sherbrooke



ALAN 2015 31 may 2015

What is Cities at Night?



- Cities at Night is a citizen science project to catalog, locate and georeference the archive of the Images of the ISS.
- Our main web page is www.citiesatnight.org

Why we need to catalog the images of ISS?

- First, NASA, ESA, CSA ... don't know where the images have been taken.
- They have a small team to catalog them.
- They had to classify 15,000 images of 300,000 in 15 years.
- The volunteers had to classify 130,000 images in one month.



Why we need to catalog the images of ISS?

- They are the best images actually at night.
- They have colors.
- We have images at any time.



Why we need to catalog the images of ISS?

- We will help to:
 - municipalities to save energy.
 - the research on Breast cancer.
 - reduce the air pollution.
 - mitigate the light pollution.
 - sleep better.
 - save money.
 - Increase the road safety
 - Increase the nocturnal safety.
 - see more stars.
- preserve the World Heritage Site
- preserve the nocturnal biodiversity.
 - Save the migration birds
 - Save the glowworms
 - Save the bats
 - Save the turtles
 - Save the fish overexploitation
 - Better tree growth
 -

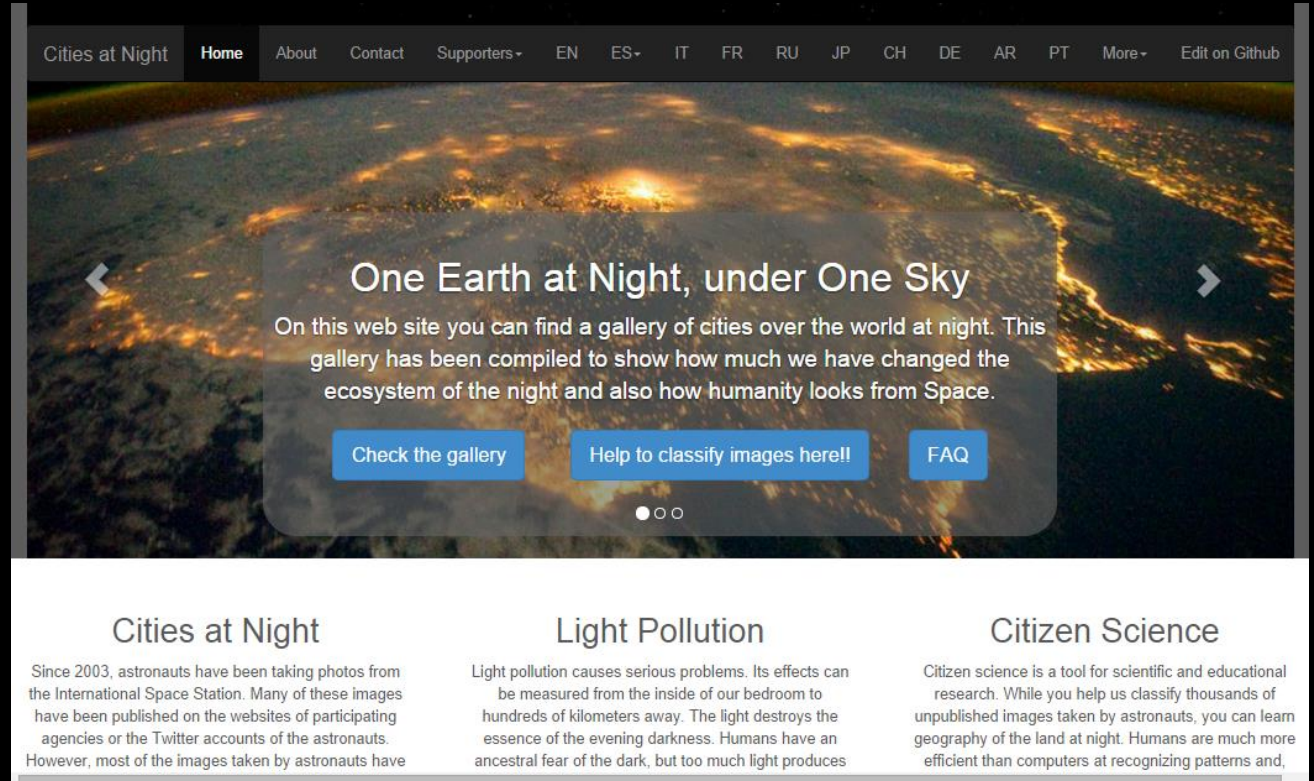
How to do that?

- First, we need an attractive web site:

www.citiesatnight.org

(design made by Media Lab volunteers)

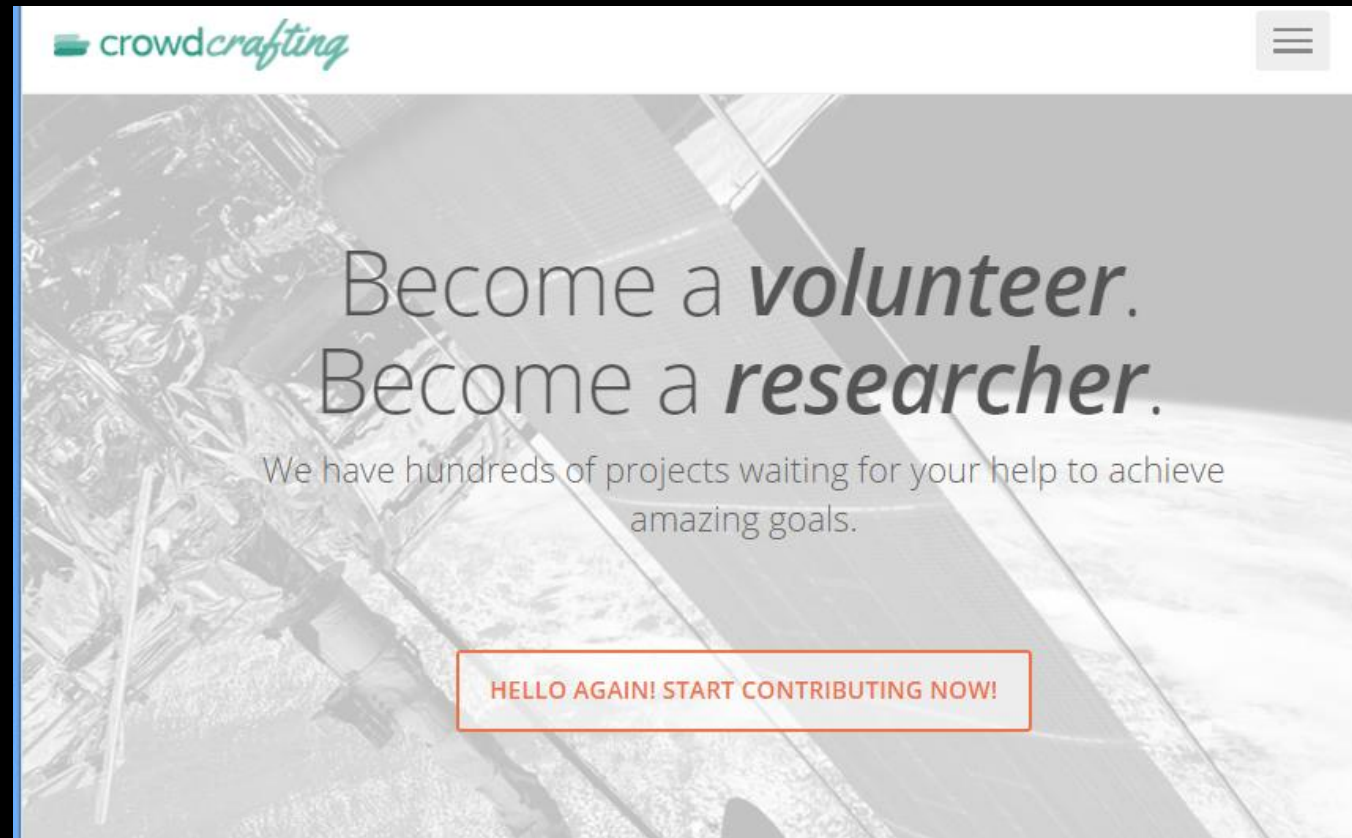
It's translated to 13 languages



How to do that?

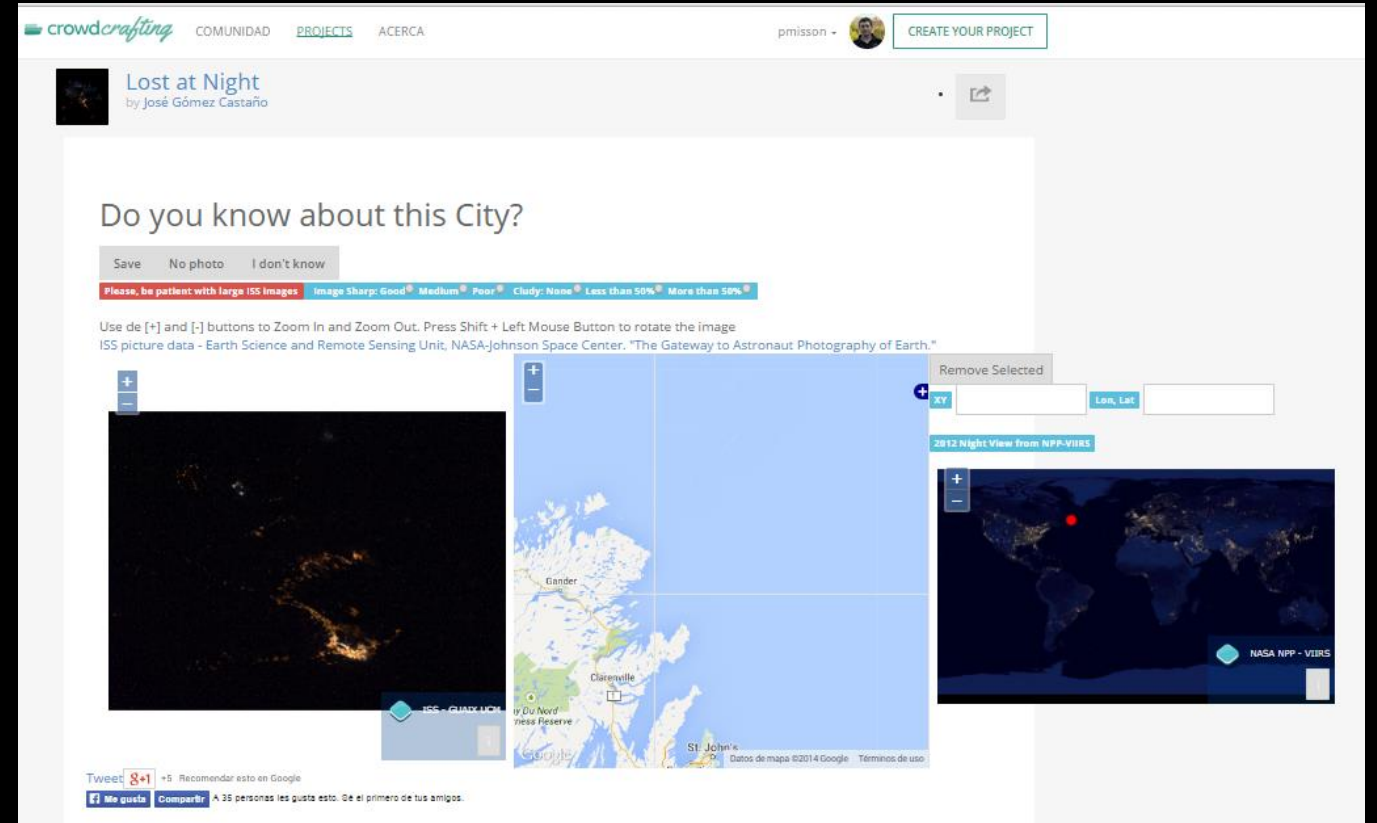
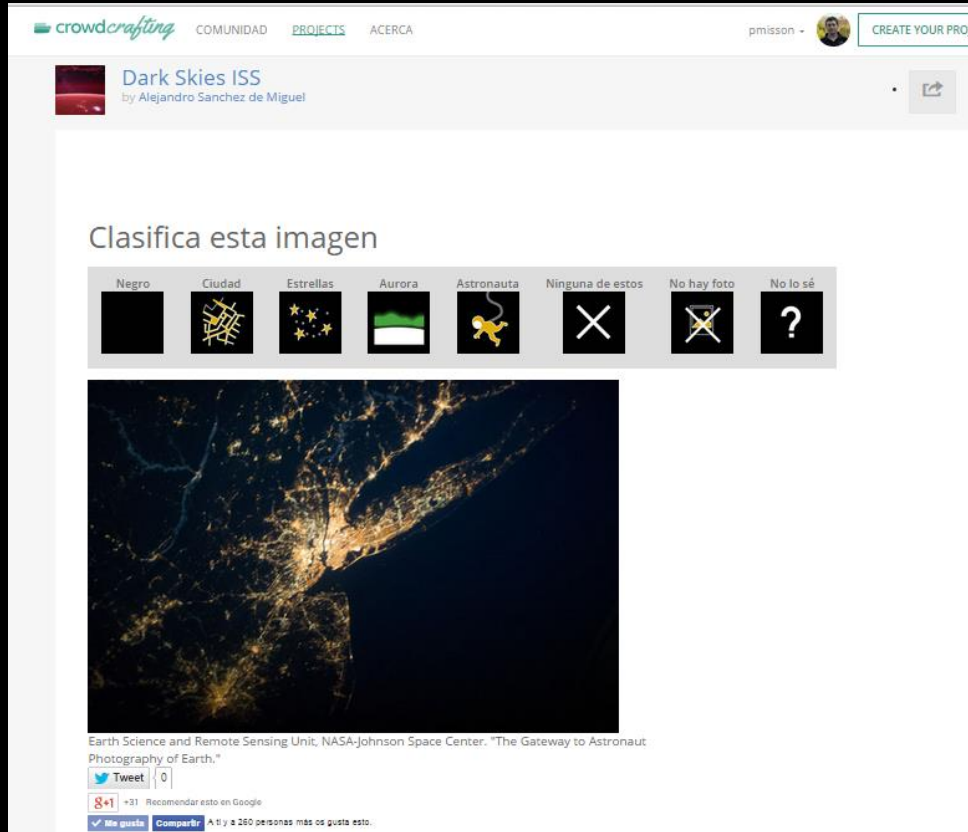
- Second, we need a platform to do the classification:

Crowdcrafting.org



How to do that?

- Third, we need a interface:



Icons and first tests by MediaLab volunteers

How to do that?

- Forth, we need volunteers over the world.
 - We contact NASA, ESA and CSA-ASC and they help us to spread the word.



ESA España  [@esa_es](#)  [Siguiendo](#)

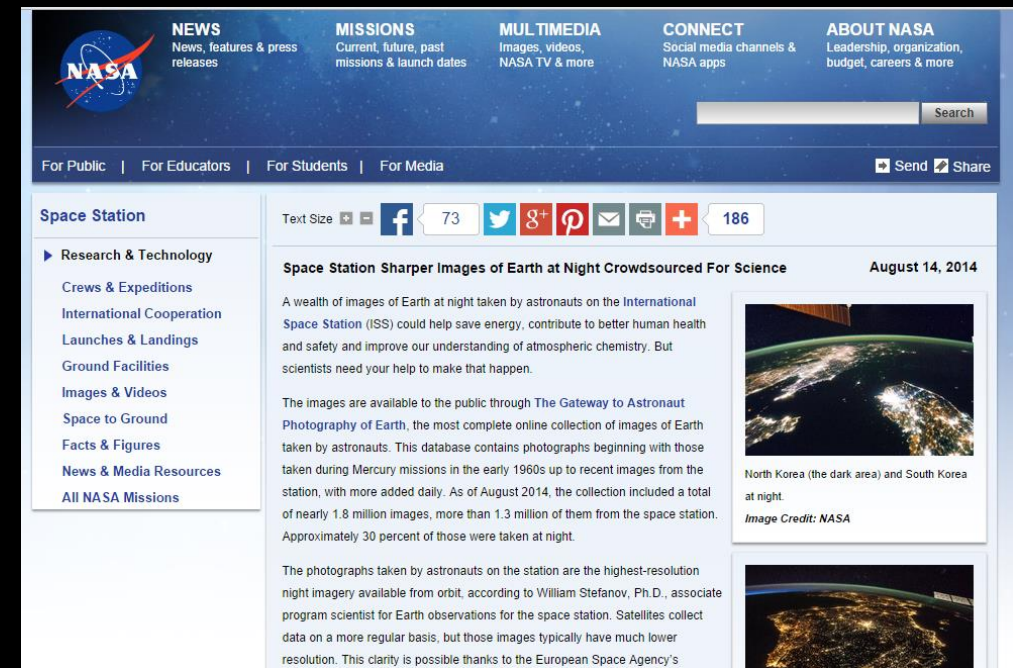
RT [@cities4tnight](#): Hoy presentamos [citiesatnight.org](#) gracias al proyecto [comunidad.medialab-prado.es/es/proyectos/d...](#) de [@medialabprado](#) con la colab [@esa_es](#)

 Responder  Retwitteado  Marcado como favorito  Más

RETWEETS 5 FAVORITOS 4 






13:50 - 9 de jul. de 2014

 Responder a [@esa_es](#) [@medialabprado](#)



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Space Station  73        186

Space Station Sharper Images of Earth at Night Crowdsourced For Science August 14, 2014

A wealth of images of Earth at night taken by astronauts on the International Space Station (ISS) could help save energy, contribute to better human health and safety and improve our understanding of atmospheric chemistry. But scientists need your help to make that happen.

The images are available to the public through The Gateway to Astronaut Photography of Earth, the most complete online collection of images of Earth taken by astronauts. This database contains photographs beginning with those taken during Mercury missions in the early 1960s up to recent images from the station, with more added daily. As of August 2014, the collection included a total of nearly 1.8 million images, more than 1.3 million of them from the space station. Approximately 30 percent of those were taken at night.

The photographs taken by astronauts on the station are the highest-resolution night imagery available from orbit, according to William Stefanov, Ph.D., associate program scientist for Earth observations for the space station. Satellites collect data on a more regular basis, but those images typically have much lower resolution. This clarity is possible thanks to the European Space Agency's

 North Korea (the dark area) and South Korea at night. *Image Credit: NASA*



Other potential applications include evaluating lighting for road and public safety and correlating light pollution with effects on human health and biodiversity.

The atlas is a collaboration of UCM, [Medialab-Prado](#), Spanish Light Pollution Research Network, European Cooperation in Science and Technology's Action Loss of the Night Network, Crowdcrafting, Celfosc and AstroMadrid

NightPod also was used for Crew Earth Observations (CEO), an investigation for which astronauts photographed natural and

And then it become viral....

the Atlantic

CNN

FOX
NEWS
channel

NBC NEWS

CBS
NEWS

GIZMODO

From *The Atlantic*
CITYLAB

EL CORREO



Digital
Photography
Review

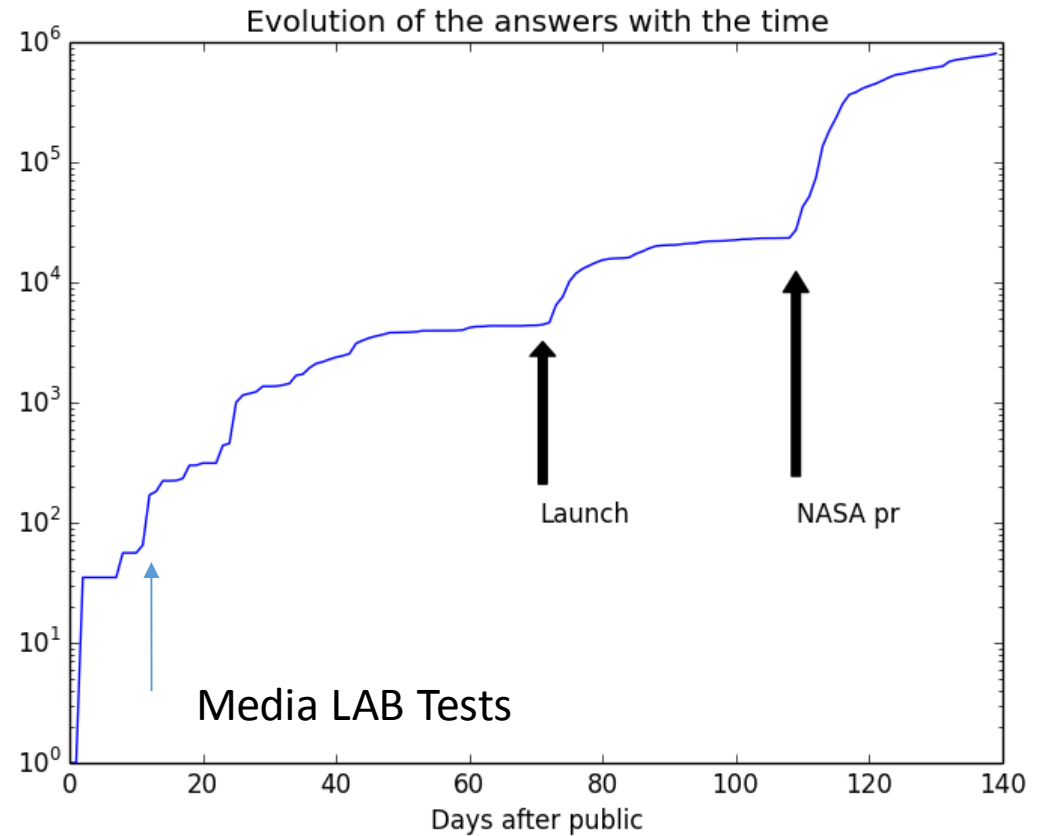
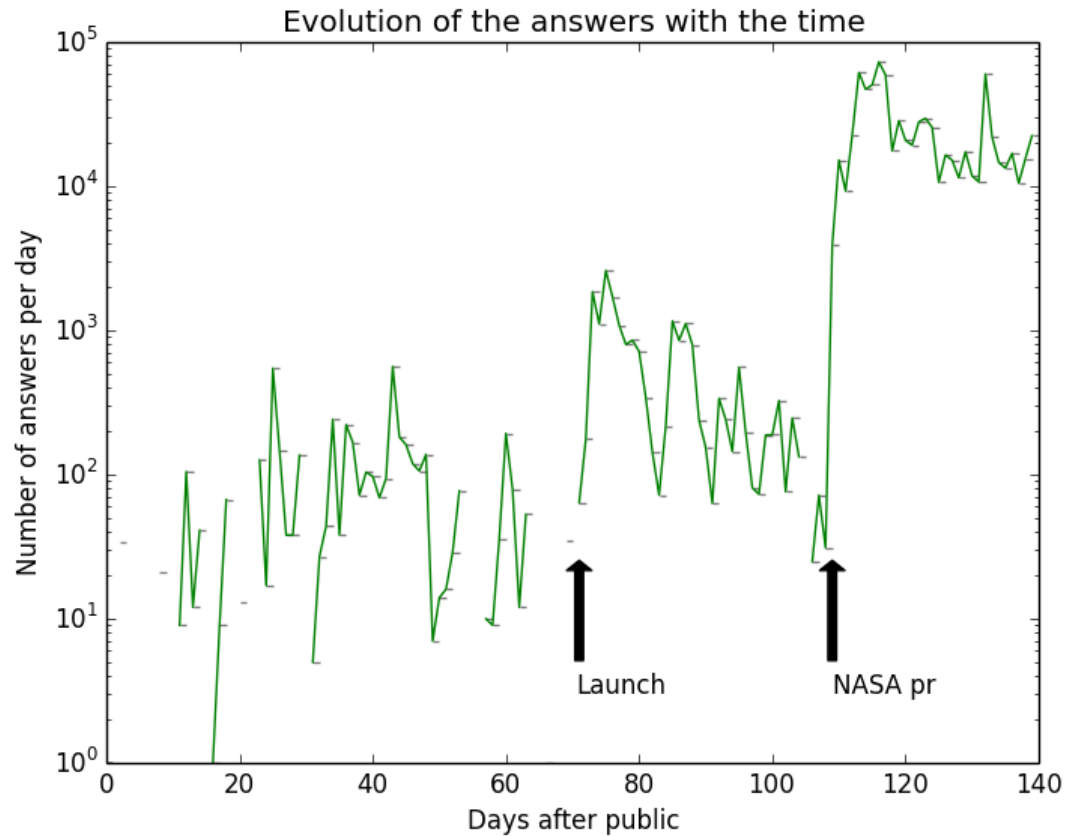
dpreview.com

rtve.es

la Repubblica.it
Il mondo in diretta 24 ore su 24

EL MUNDO

The Evolution of the answers.



And then we got a prize.



What are the results?

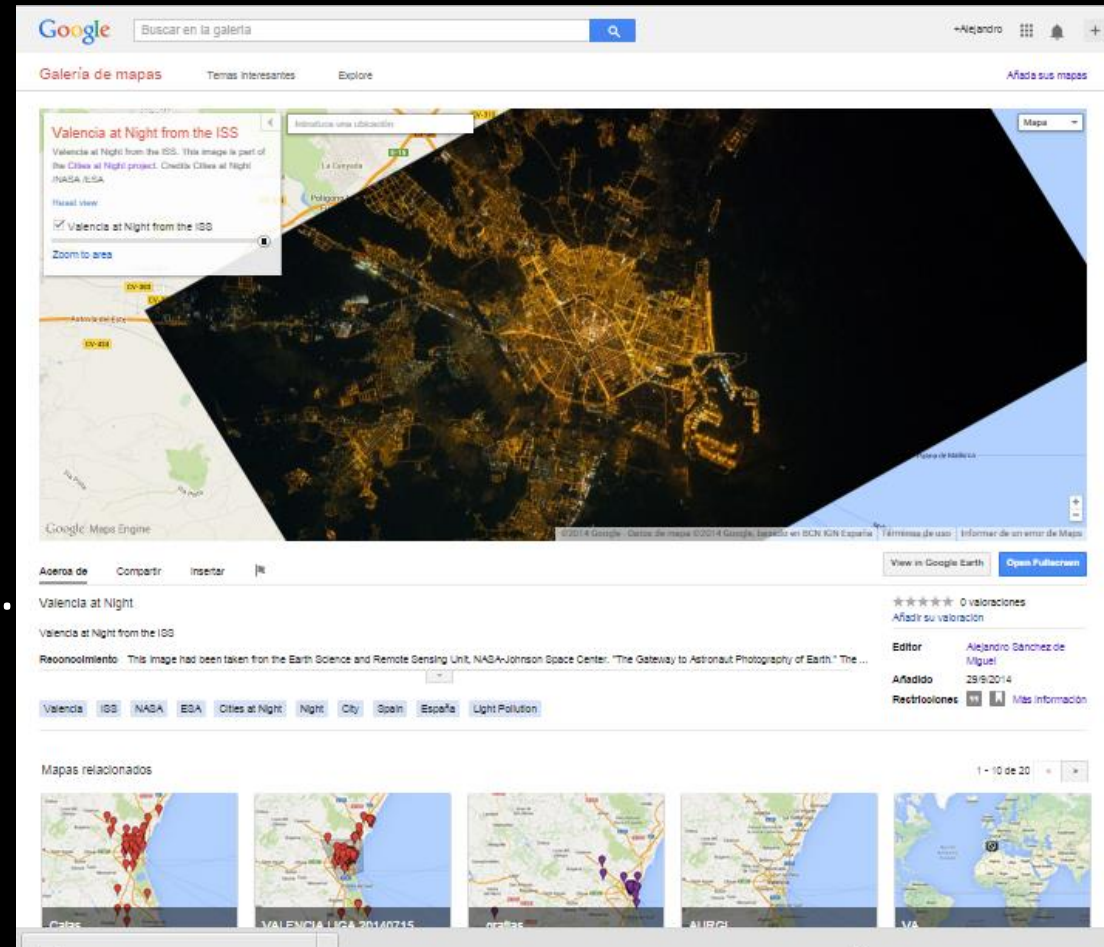
- We are actually making the analysis of the data.
- The first result is that the cities at Night volunteers had classify all the High resolution archive of the ISS:
 - 130.000 images taken with lens from 40 mm to 999 mm.
 - 30.000 of those images are images of cities with few clouds (5 times at least each).
 - We near a 1.000.000 of classifications and involved to 15.638 people.
- The Lost at Night users had try to located 5720 images (at least 5 times each).
- The Night Cities ISS users had try to georeference 1714 images (at least 30 times each).

What happen now?

- Present the first results
- Guarantee the future of the project
- Improve the apps and the design
- Cities at night logo?

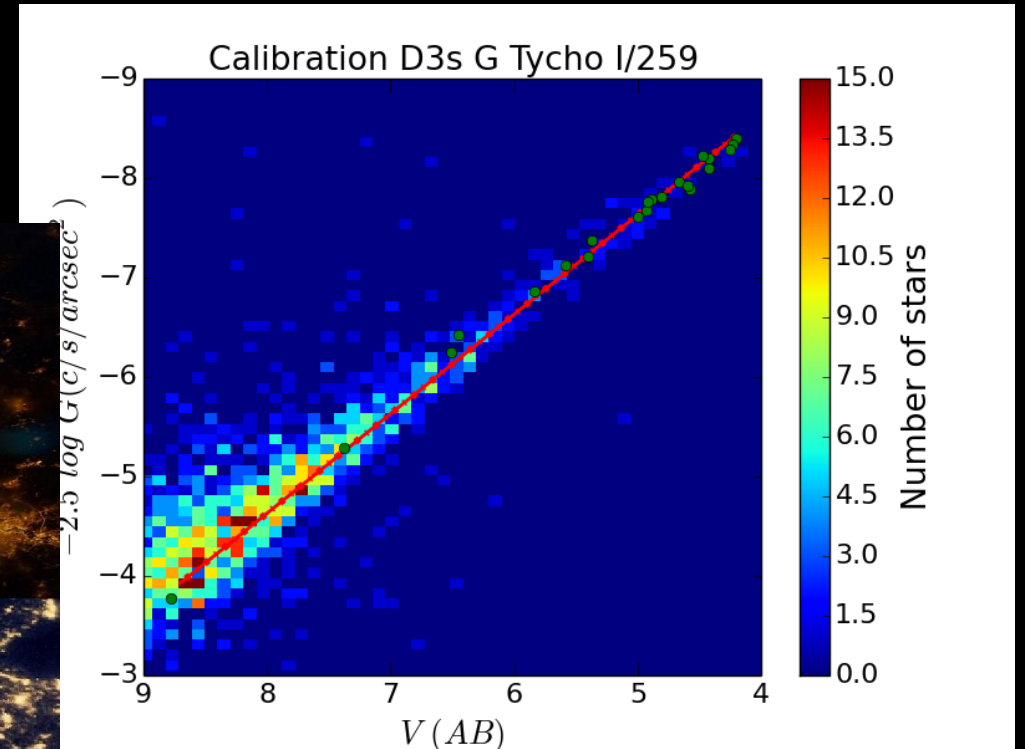
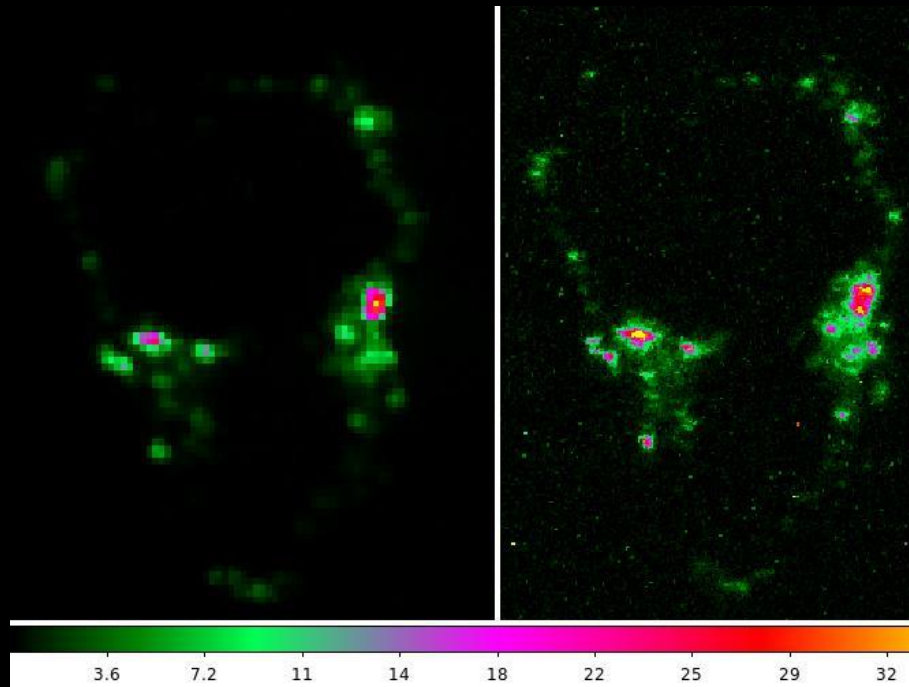
What we want to present?

- First results and the first maps:
 - You can navigate in side the maps on Google Earth gallery.
(Thanks to Google for give us unlimited free space for the project but until feb 2016)
- Cartodb will host us instead of Google.
- (meeting last Wednesday).



What we want to present?

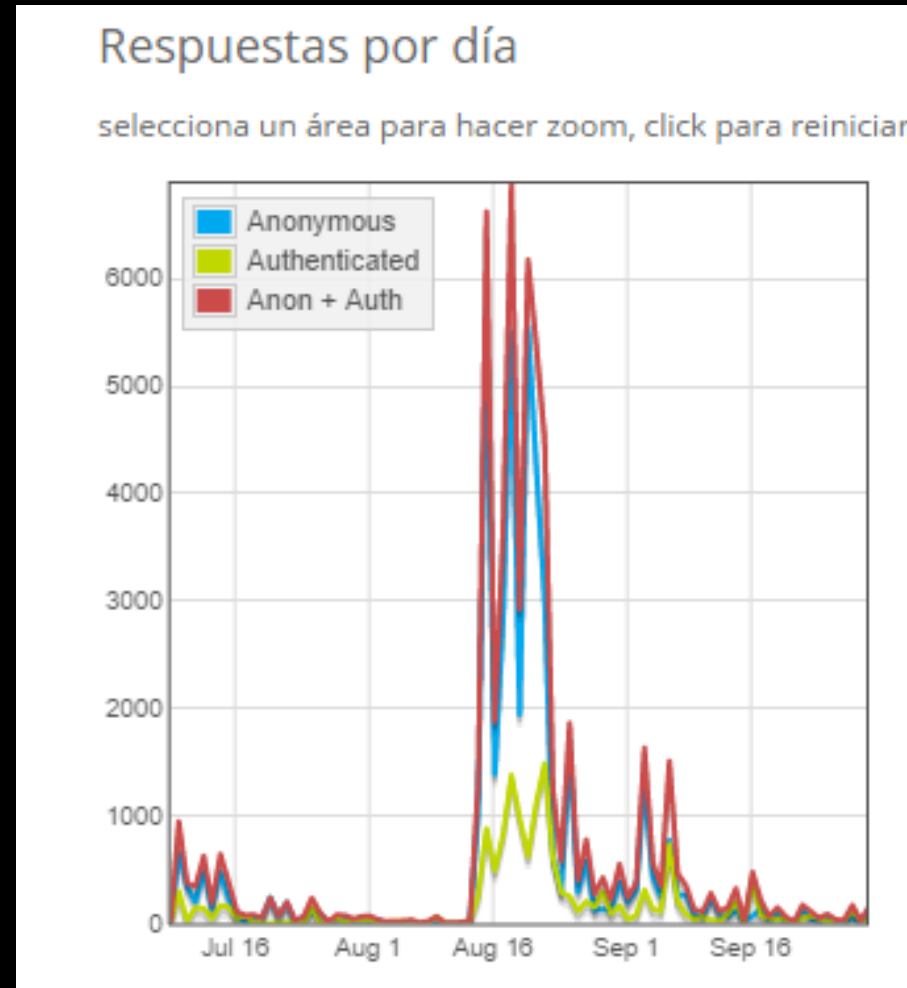
- Scientific calibration:



Alejandro Sánchez de Miguel Phd. Thesis.

What we want to present?

- Push Lost at Night and Night Cities.



What we want to present?

- New multilingual interface:

Also we have already the translation for Italian and Japanese.



Spanish

French

English

What we want to present?

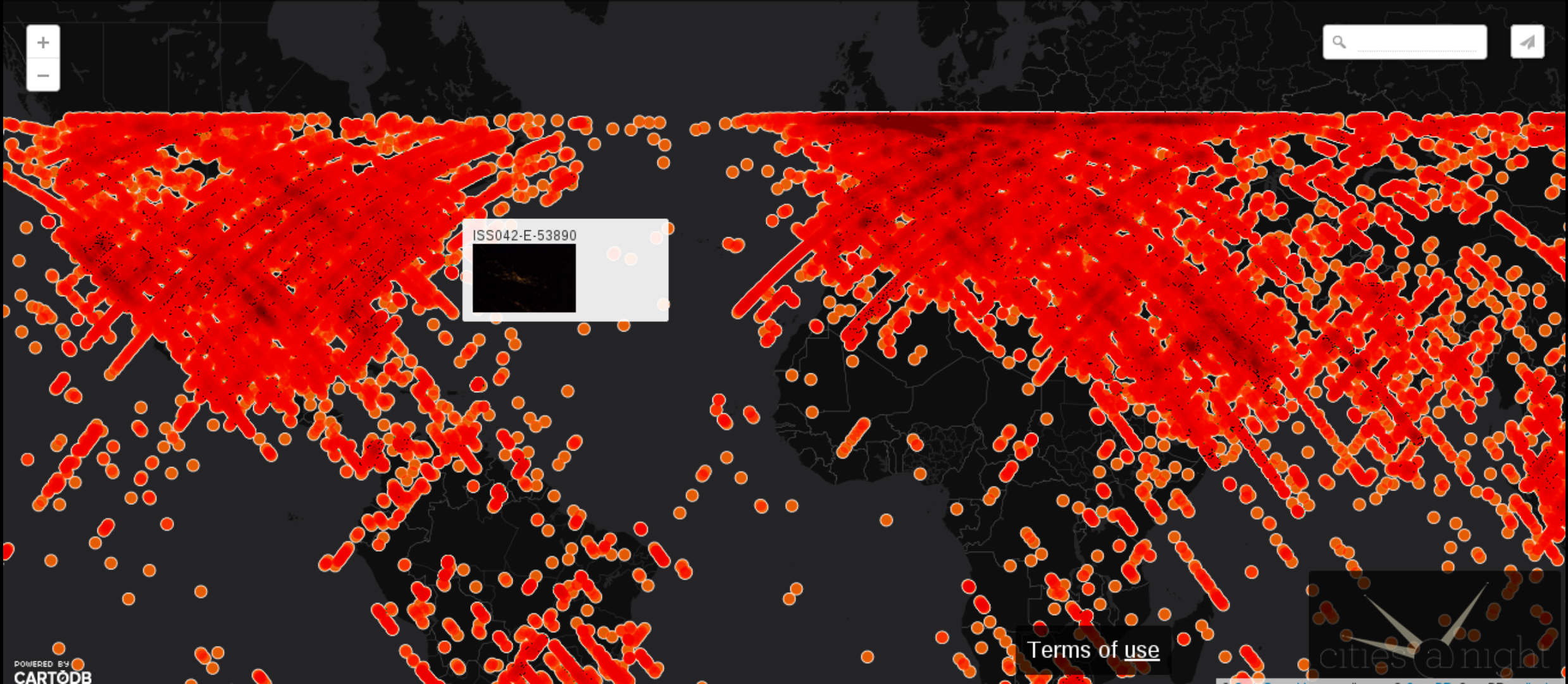
- Crowdfunding campaign:
 - We don't have any financial support
 - Also, most of the work had been mad by volunteers/amateurs.
 - All the services that we have now are not guaranteed for ever.

Maybe we can sell posters? (We have permission to do it).

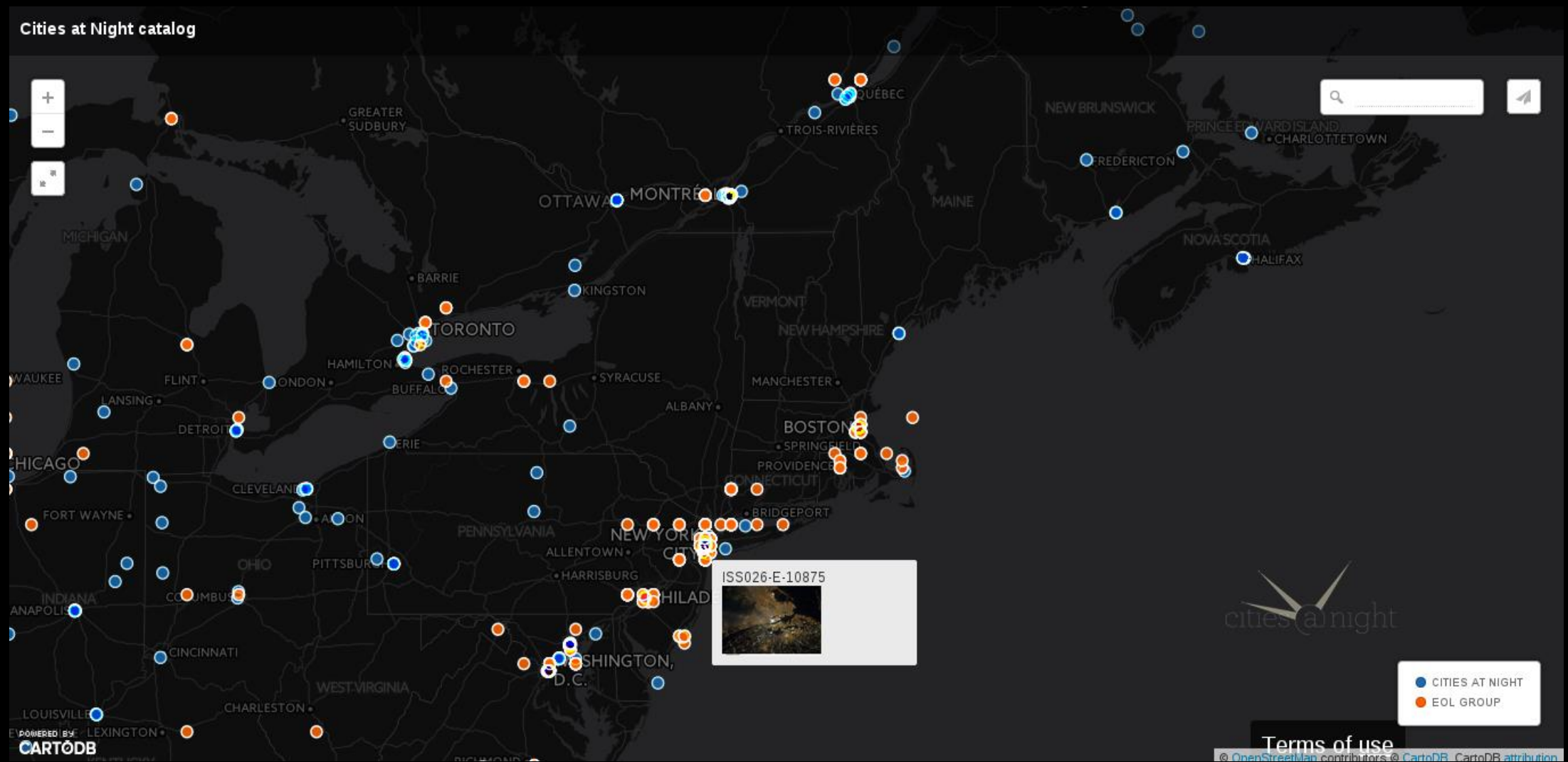


Nadir of the ISS Cities from Dark SkiesCatalog

Dark skies catalog: Cities



Coordinates of ISS images from Lost at Night



ISS maps from Night Cities app

Cities at Night V0.1

This is the Map of the first version of **Cities at Night**. The grey back ground it's an image of the earth at night from the SNPP (Credits: [NGDC Earth Observation Group \(EOG\)](#)). The color images are images taken from the "Gateway to Astronaut Photography of Earth" and georeferenced by the [Universidad Complutense de Madrid Staff](#) or the [Cities at Night volunteers](#).

[Restablecer vista](#)

- VIIRS 2014
- Iberian peninsula at Night from the ISS 1.0
- [Acercar área](#)
- Cities_at_Night_V0.1
- [Acercar área](#)
- New
- [Acercar área](#)
- London, Paris, Madrid, Amsterdam, Warsaw, Berlin at night from the ISS
- [Acercar área](#)

Mapa

Alejandro Sanchez

Google Maps engine

©2015 Google - Datos de mapas ©2015 Google Términos de uso Informar de un error de Map

Do you want to be a beta tester?

Great!!! You will gain access to the data now, but you have to have to help us explaining why this project is so important for you.

Do you want access to the
calibrated data?

Great!!! Fund US!!

Or propose us a project where we could be coauthors

Also you can wait until we find funds from somewhere else and we make the
data release

What is the future?

- On the Next months A. Sánchez de Miguel will present his Phd. Thesis.
- We will start to upload massively the maps to Google Earth gallery.
- Start trying to get a salary for Postdoc, improve the plataform and a Gis expert to keep project on going.
 - (We have guaranteed the survival of the project at least one year.)
 - Some grants and project had been requested already.

Acknowledgments

- Daniel Lombraña and Alejandro Dominguez for their support and help with everything.
- To Peter Caltner, our mentor.
- To Jaime Zamorano and Jesús Gallego, my Phd. Advisors.
- CCM Kyba for his impulse to go to the **Citizen Cyberscience Summit**.
- To Pablo Ripolles, Beatriz Fernandez, [Juan Rodrigo Solera Sánchez-Seco](#) y Marta Vela Ibañez (our MediaLab natives).
- To José Gómez Castaño, main developer of Lost at Night and Night Cities apps.
- Thanks also to NASA, ESA, and CSA-ASC staff that had help us so much.
- To all our translators.
- To all the Thousands of volunteers.
- To the MediaLab, GUAIX-UCM team, LoNNe Network, REECL,
- And finally....

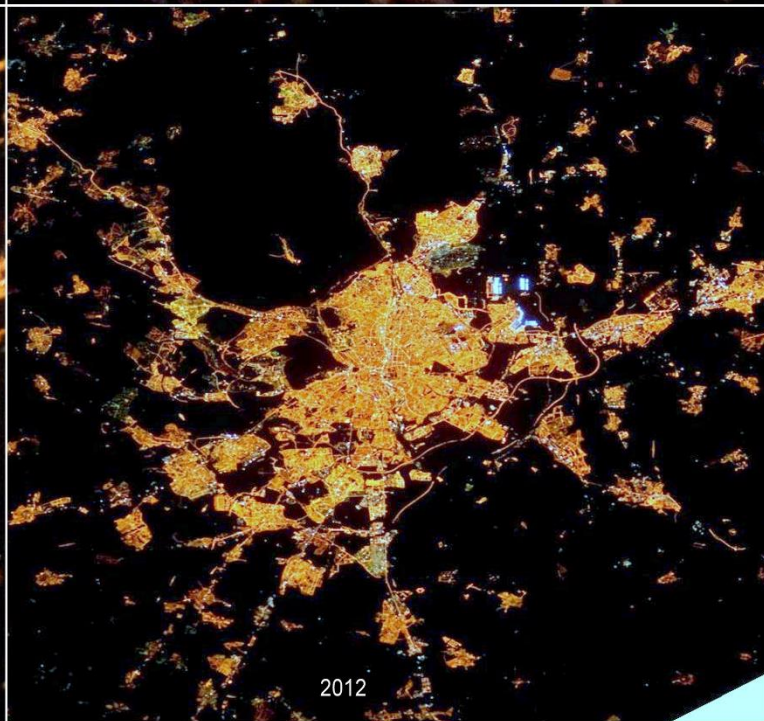
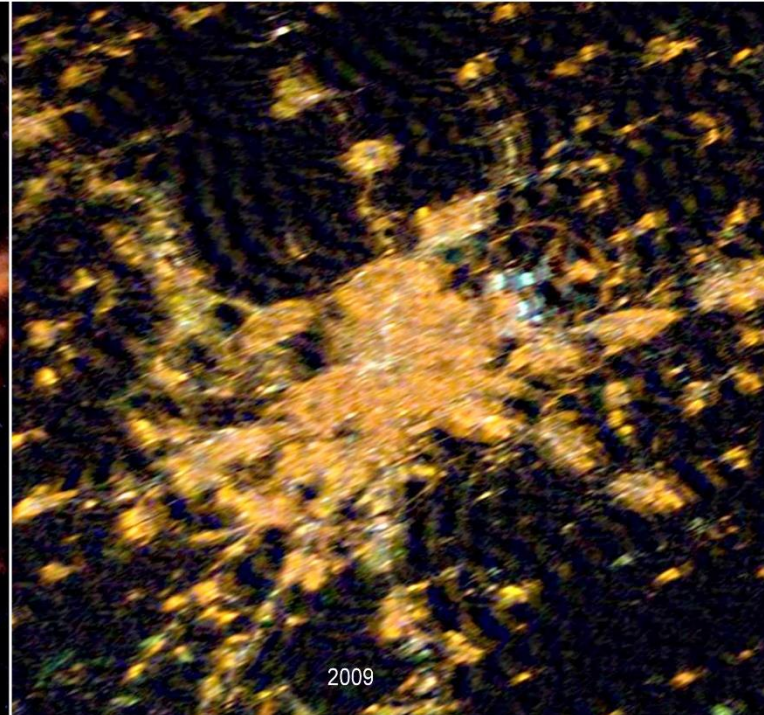
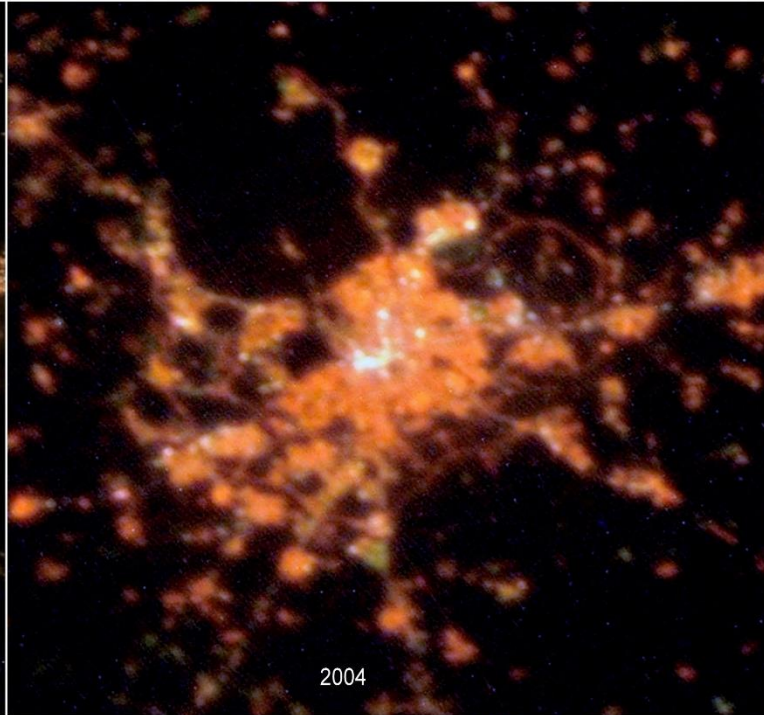
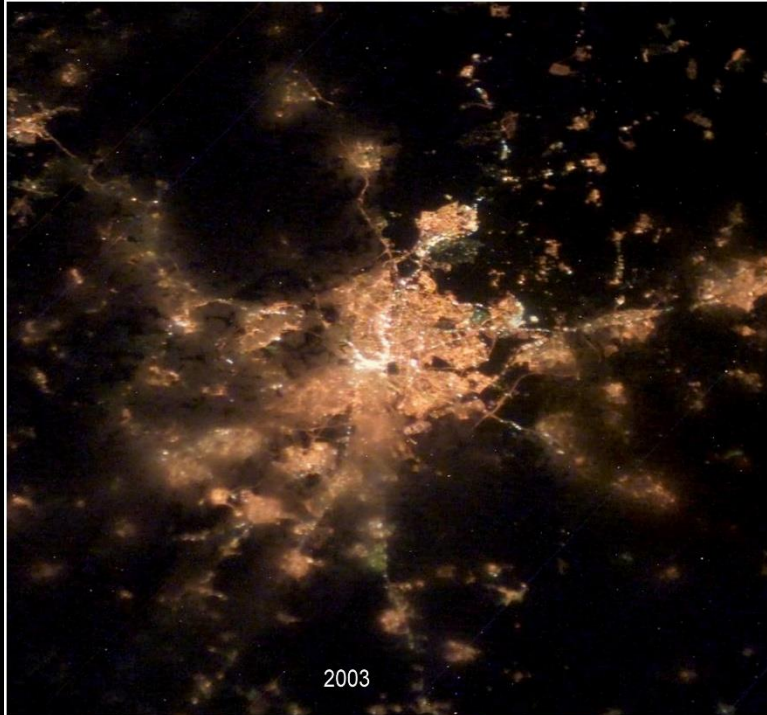
Acknowledgments

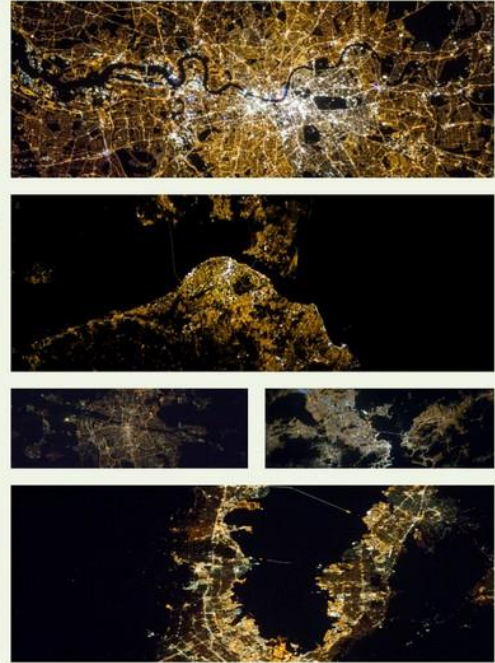
- Thanks to the Astronauts of NASA, ESA, CSA-ASC, ROSCOSMOS and JAXA That takes the pictures.

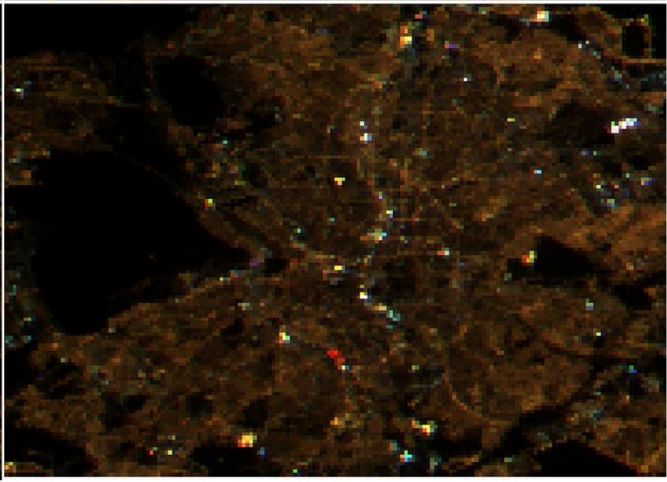
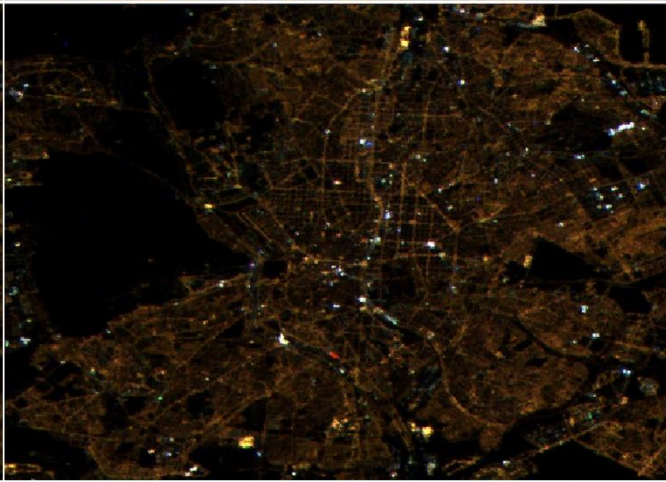
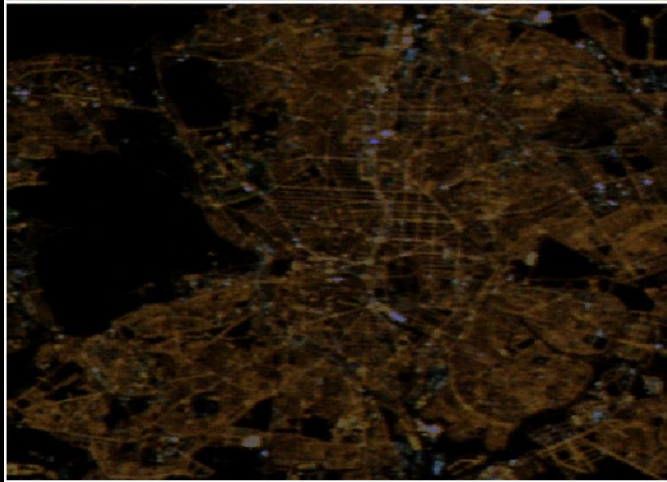
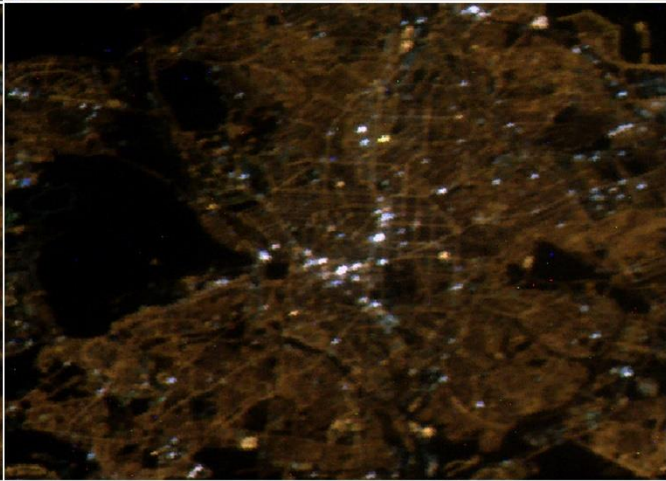
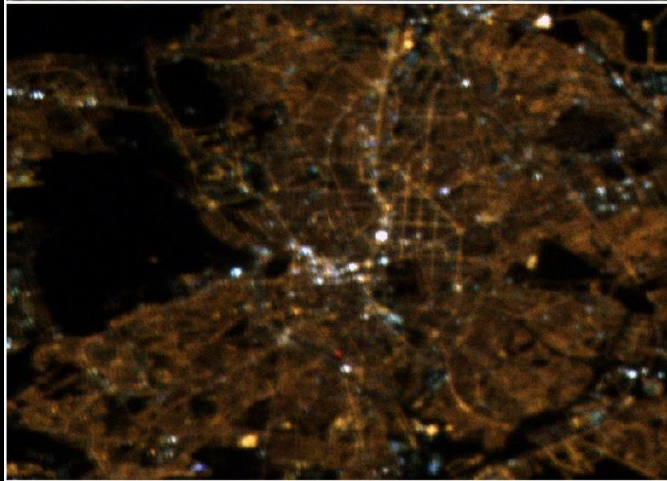
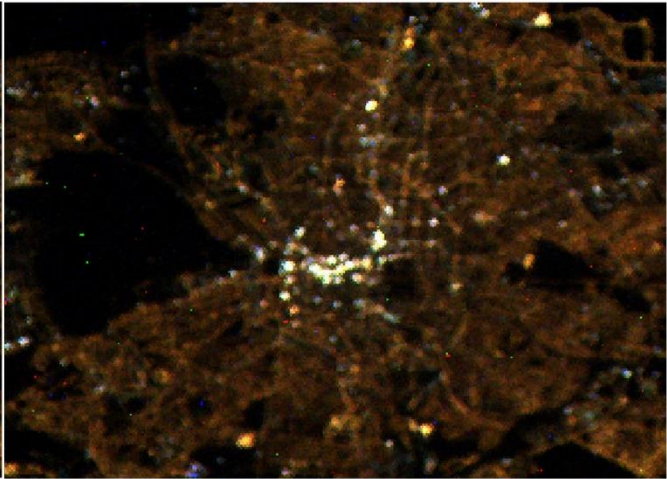
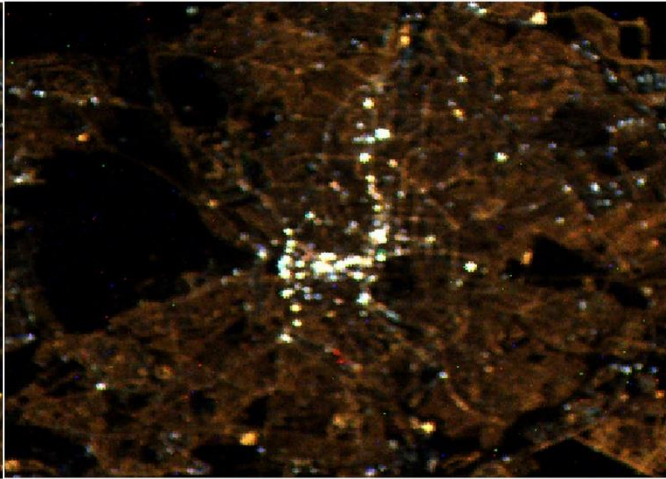
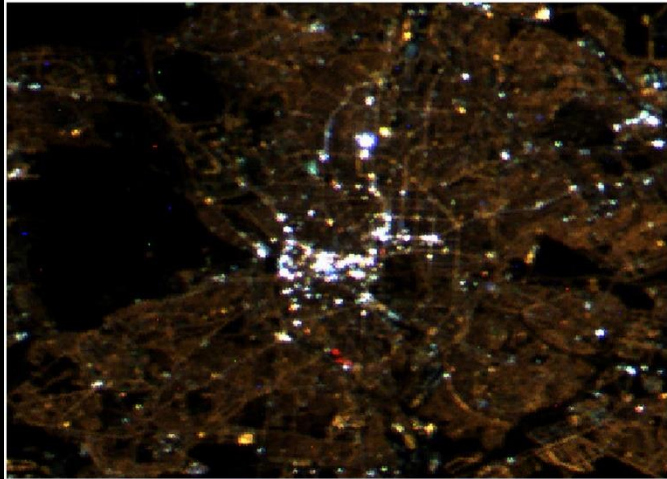


Credits:

- Earth Science and Remote Sensing Unit, NASA-Johnson Space Center.
"The Gateway to Astronaut Photography of Earth."
- NOAA
- The authors and www.citiesatnight.org









New York

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Don't ask what the stars can do for you

but what you can do for the stars.



www.citiesatnight.org

www.citiesatnight.org



San Francisco 2014



Tokio 2014

Sky over
Tokio
San Francisco
Berlin
Valencia
Shanghai
2014



San Francisco 1850



Tokio 1850



**Sky over Easter Island
2014
and All the World 1850**




Berlin 2014



Valencia 2014




Shanghai 2014



Berlin 1850



Valencia 1850



Shanghai 1850

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