

## Archives 102

# Exploring data archives and getting the data you need

## *Practical Session*

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# How to get the data you need



## Objectives

1. Obtain some datasets needed for Julia's class 😊
  - a. Where do I go to search for datasets?
  - b. How do I minimize the time needed to obtain this dataset?
  
2. Search for other datasets given some scientific objectives
  - a. Identify what you need
  - b. Search these datasets at ESA's Planetary Science Archive

## **What will you learn (hopefully)?**

- Better understand an archived product to better search for it
- There are many available tools, I need to find the one that suits my needs!

Archives 102  
**Space Science Archives**

***Obtaining DAWN science data at VESTA***

# Obtaining Dawn science products



## Here are the three images you need

FC21B0007101\_11273005958F3F.IMG

FC21B0007102\_11273010009F4F.IMG

FC21B0007106\_11273010035F8F.IMG

How will you do? What informations do you need?

- Space mission, Space agency?
- Science objectives?
- Where can I get those datasets?

# Obtaining Dawn science products



**1. Dawn** mission, which is a NASA Discovery mission

→ PDS, find the node that is hosting these datasets

Geoscience, Small body, Plasma, Cartography, Atmosphere, Rings, NAIF (Ancillary)

Don't use the image browser!

**2.** FC21B0007101\_11273005958F3F.IMG, The name tells you a lot!

FC → Framing Camera (MPS PIs, European instrument!)

.IMG → This is a PDS format, thus likely used by space agencies archives

"F3F" → "F" for filter?

1127 → Could that be November 11<sup>th</sup>?

# Obtaining Dawn science products



## Solutions 1

[http://sbn.psi.edu/archive/dawn/fc/DWNVFC2\\_1B/DATA/IMG/2011272\\_HAMO/2011272\\_CYCLE1/2011272\\_C1\\_ORBIT01/](http://sbn.psi.edu/archive/dawn/fc/DWNVFC2_1B/DATA/IMG/2011272_HAMO/2011272_CYCLE1/2011272_C1_ORBIT01/)

**PSA vs PDS:** This is a european instrument, but it is not hosted at PSA!

## Looks at the Metadata!

There are no .LBL, no detached label. Just open in a plain text editor.

Are the first number about the day, 1127 is November 27?

**Geometry keywords** are usually important, here there are well described. If you prepare an algorithm to extract those information, they will always be at the same place.

Did you found the approach to find the data useful?

Any other solutions!?

# Obtaining Dawn science products



## Additional information, another option

2. I would like to do a **color composite** of an interesting region
3. I am specifically interested in the **Oppia** crater (-8,26 ; 99,3)



# Obtaining Dawn science products



## Solutions 2

<http://sbib.psi.edu/data/PDS-Vesta/pds-vesta.html>

This is a **GIS interface search**, thus not necessarily to explore an archive. You know where you want to go!



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***Obtaining Rosetta science data at 67P***

# Obtaining Rosetta science products



## Here is the science case

I have ground based observations from **@muse** and **@sinfoni** at the **VLT** looking at the comet **67P**.

I want to get some close-up images to see if something happened during my observations.

How will you do? What informations do you need?

- Space mission, Space agency?
- Science objectives?
- Where can I get those datasets?

# Obtaining Rosetta science products



- 1. Ground based** observation are done from March 01 to March 06 2016
- I am used to ESA's Rosetta archive and I go directly to the image Archive Browser  
→ <http://imagearchives.esac.esa.int>
- I am less familiar with ESA's Rosetta Archives and I go to the main PSA website (which by 2017 will be [psa.esa.int](http://psa.esa.int)).  
→ [http://archives.esac.esa.int/npsa\\_test](http://archives.esac.esa.int/npsa_test)

# Obtaining Rosetta science products



**None of the two approach are appropriate here, are they?**

Image gallery is a pain to search through the images

PSA does not have high resolution images, although it is easier to narrow down the number of images relevant

This is the useful image from the Image Archive Browser. You can guess that there is something but the stretch is not good

<http://imagearchives.esac.esa.int/picture.php?/56720/category/238>

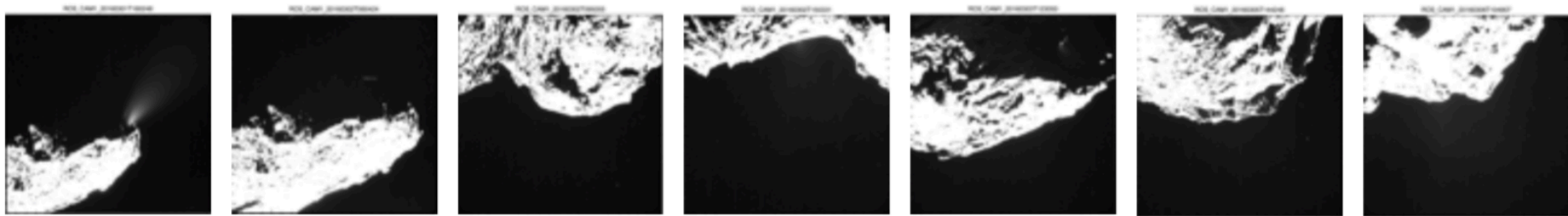
In the PSA, the image from March 01 @18h is the important one, but resolution is too bad.

**→ Archives will not necessary provide to you the thing you want/need.**

# Obtaining Dawn science products

Now open the folder "Sbesse-Archives102" in the machine, here are few of the images processed

Do I have anything in my observations?



« event » caught  
on 2016/03/01  
by the star tracker

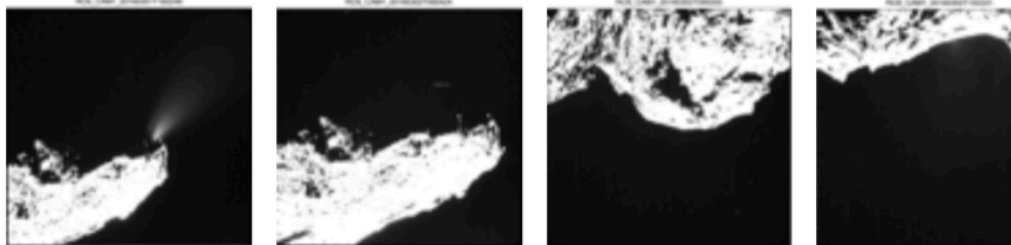
ESA/Rosetta NavCam images during our  
observations from 2016/03/02 to 2013/03/06

# Obtaining Dawn science products



Now open the folder "Sbesse-Archives102" in the machine, here are few of the images processed

Do I have anything in my observations?



« event » caught on 2016/03/01 by the star tracker

ESA/Rosetta Na observations from



« event » caught on 2016/03/01 by the star tracker

cp /home/jmlc/  
WS2016/sbesse...



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**Space Science Archives**

**Extra Bonus**  
***Obtaining ExoMars 2016 science data***



# Obtaining ExoMars science products



**Go to [psa.esa.int](http://psa.esa.int)** (it is the real machine for Exomars 2016)

Search for EM16 datasets, identify which one are the science products and download them.

**→ You can not download them because you have no rights!**

**Get use to it, data are not necessarily all available to you now .**

**Archives 102**  
**Space Science Archives**

**Extra Extra Bonus**  
***Obtaining 67P/C-G data from other than  
Rosetta***

# Obtaining 67P/C-G science products



**Go to** <http://vespa.obspm.fr/planetary/data/ept/query/all/>

Search for additional 67Pdatasets

→ **Yes, there are still not a lot of things available.**

But there are many other tools available, they are just not available all through the main and usual archive interface

E.G.: <http://ices.engin.umich.edu>

