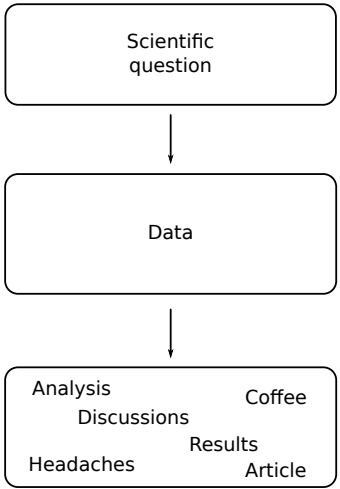
Online tools for planetary sciences

rocks

B. Carry[1] & **M. Mahlke**[2]
[1]Lagrange, Observatoire de la Côte d'Azur
[1]Institut d'Astrophysique Spatiale

A typical research project



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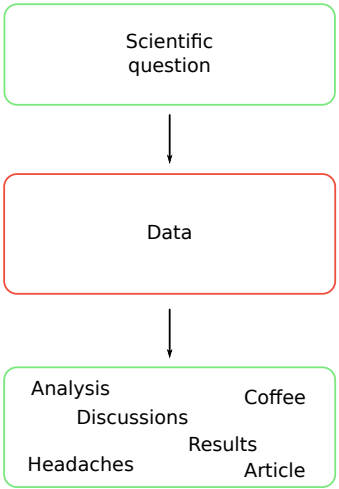

Repetitive (and tedious) tasks!

- **Planning and conduction of observations**
  - Observations already exist?
  - Target/sample available? visible?
- **Gathering ancillary data for the analysis**
  - Complementary information diameter, fall/find, ...
  - Context for research another population
- **Repetitive low-level analysis**
  - Spectral classification
  - Cross-matches & merges

Shared resources save community time

- **Tedious tasks? Share the load!**
  - Many agencies have the mission to support the community
    ESO/ESA/NASA, JPL/MPC/IMCCE, ...
  - The expertize is in the community → individual initiatives
    SSHADE, Meteoretical Bulletin, SMASS
  - ▶ More time for your research
- **Tedious tasks? Automatize them!**
  - Click, click, click... copy-paste, click...
  - Or code some processes to work for you
  - ▶ Virtual Observatory & Community librairies
- **Community services are less prone to errors!**
  - One user → one α-, β-tester, user...
  - Many users → bug reports! and community solutions & patches!
  - ▶ Robustness of analysis → results

Pointing a telescope

Example

Where do I point the telescope from the name of a target?

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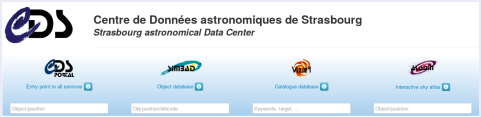
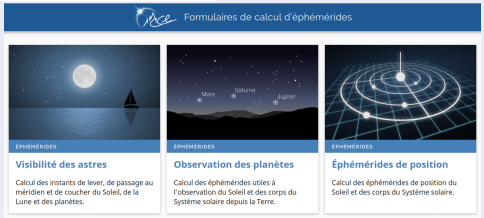
Answer: CDS, IMCCE Miriade, JPL SSD, MPC, Lowell AstEph





Visibility of targets

Example

Can I observe asteroids Ceres, Pallas, 4321 tonight? And M31?

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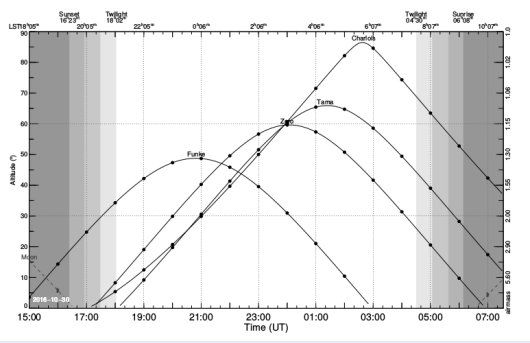
Answer: IMCCE ViSiON, Lowell AstObs



Accessing data

Example

What is the taxonomy of Vernazza? the diameter of Groussin?

Accessing data

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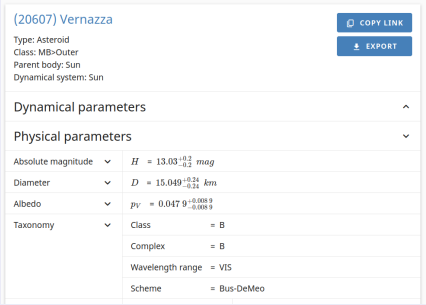
What is the taxonomy of Vernazza? the diameter of Groussin?

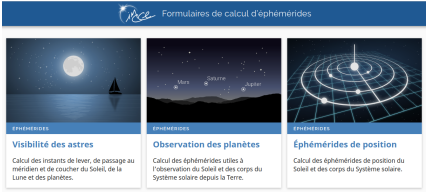
Answer: IMCCE SsODNet, JPL sbdb, OCA MP3C, Lowell AstInfo, SiMDA




```
$ rocks diameters groussin
                                    (16280) Groussin
+---+----------+-----------------+-------------------+--------+-------------+
|   | diameter | err_diameter_up | err_diameter_down | method | shortbib    |
+---+----------+-----------------+-------------------+--------+-------------+
| 1 | 3.081    | 0.105           | -0.105            | NEATM  | Masiero+2011 |
| 2 | 3.19     | 0.84            | -0.84             | NEATM  | Masiero+2012 |
+---+----------+-----------------+-------------------+--------+-------------+
```

Pimp my processing

- **Web forms** Access at human-scale
  - Reprocess archival observations
  - Need to contextualize and complement
  - Perform operations beyond our confort zone
- **Shared libraries** Automatize and rationalize
  - Local installation & calls
  - Part of codes, scripts → repeatability
- **Web services and APIs** Use remote resources
  - Send `query` & get `answer`
  - Maintenance on the provider side



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Typical tasks and some solutions

TBD