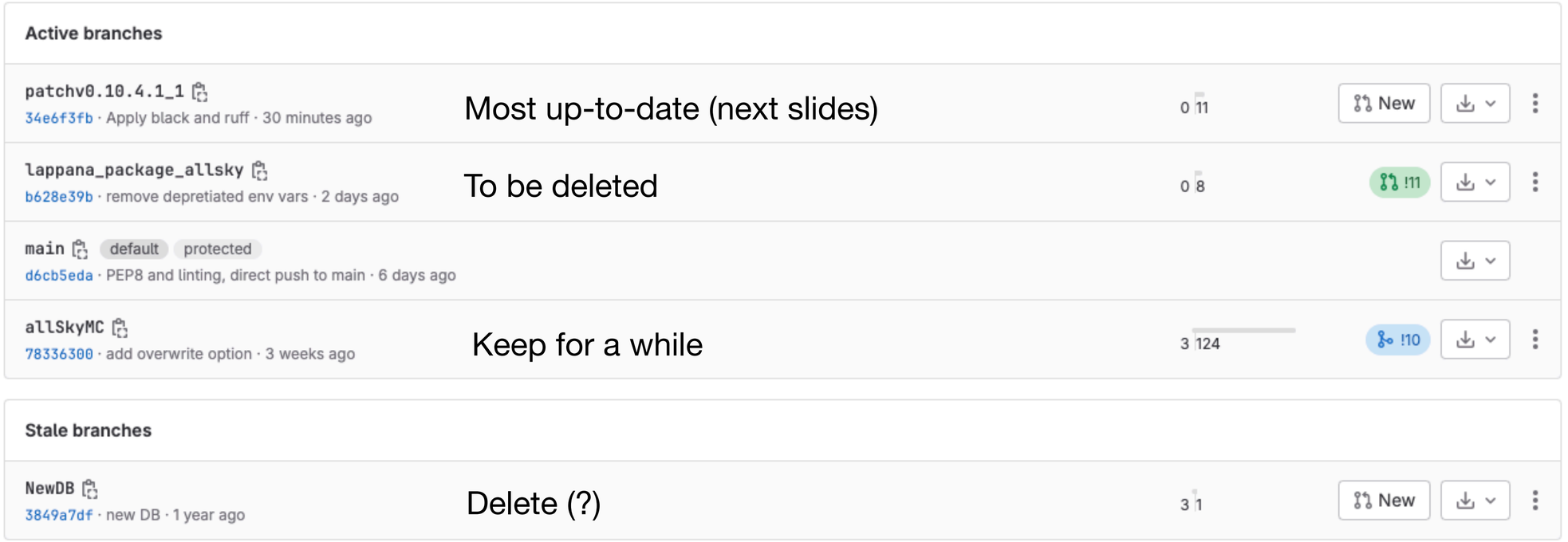
Towards Next Day Analysis

ASTRAN (LAPP-ANA triggered by email)

LAPP-ana updates

- **Merged allSkyMC branch (Estelle's work) to main branch.**
- **Left allSkyMC branch in the repo for provenance**



LAPP-ana updates

- Fixed some bugs
- **Implemented lapp-ana as a python package**
- (Implies a big change in code structure.)
  - git clone & pip install -e ./
  - Versioning (full track and ensure compatibility with lstchain) follows lstchain versioning (eg. currently implemented 0.10.4).
  - Call scripts for dl2, dl3 production instead of setting $CODE_DIR variable. Expose dl2,dl3 production functions so that they can be called inside python.

```
[metadata]
name = lappana
author= LAPP group
# url =
description = Python3 scripts for LST analysis
license = GNU General Public License v3.0
long_description = file: README.md
long_description_content_type = text/markdown
version = 0.10.4
```

```
[options.entry_points]
console_scripts =
  check_dl2 = lappana.check_dl2:main
  check_dl3 = lappana.check_dl3:main
  create_dl3_LP = lappana.create_dl3_LP:main
  create_dl2_LP = lappana.create_dl2_LP:main
  create_index_LP = lappana.create_index_LP
```

```
>>> import lappana
>>> lappana.__version__
'0.10.4.2.dev3+g34e6f3f.d20240111'
```

- **ASTRAN** (another repository 🤷‍♀️)

Edna Ruiz Velasco / astran / **Repository**

increase log output and fix bugs
Edna Ruiz Velasco authored 11 hours ago

`d8cff40a`

`allskylappana` astran / + Compare History Find file Edit Code

Name	Last commit	Last update
astran	increase log output and fix bugs	11 hours ago
.gitignore	Make it a package	1 month ago
LICENSE	Make it a package	1 month ago
README.md	README.md	1 month ago
setup.cfg	Fix bugs and add imap_tools to the inst...	1 week ago
setup.py	Factor submit functions and add DL3 pr...	1 week ago

README.md

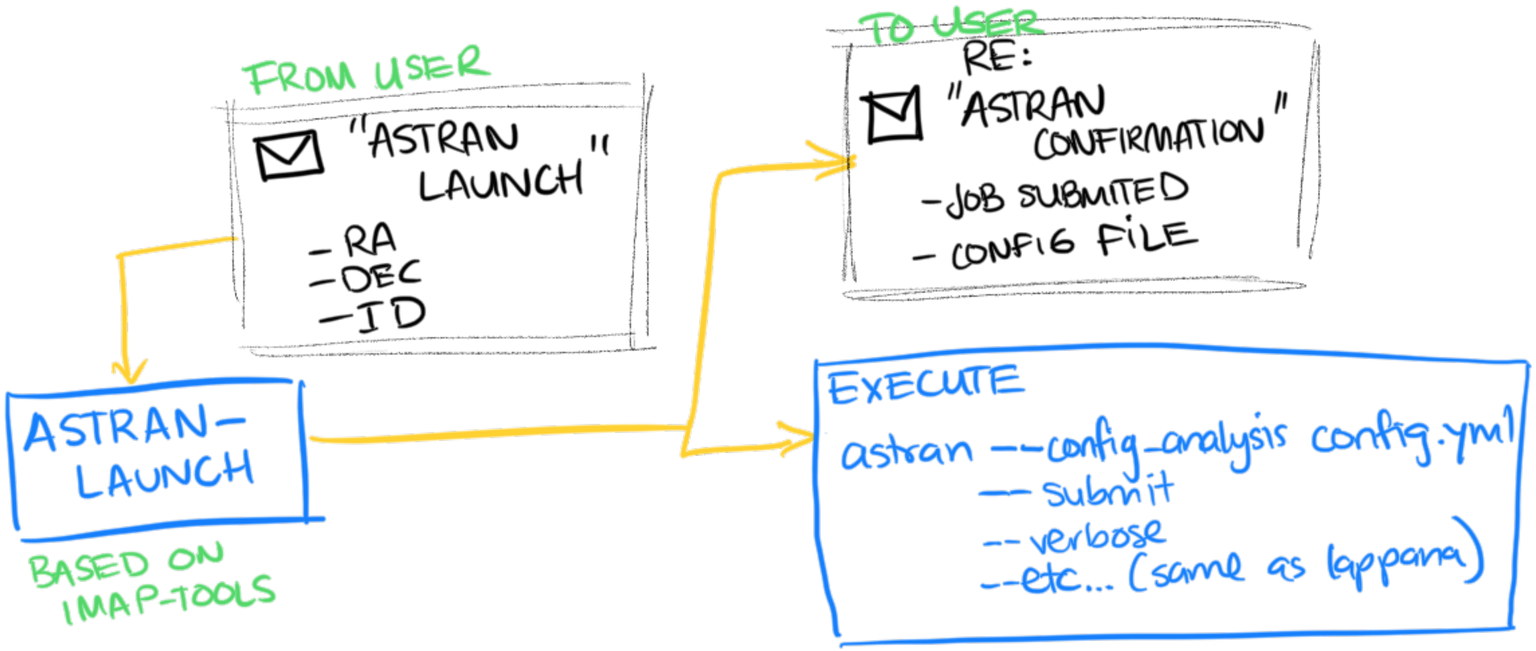
ASTRAN: Advanced System for Telescope Results and Analysis of the Night NOVANA: Night Observation Verification and Analysis System

Introducing ASTRAN: Tailored for the LST at CTA, this system streamlines the analysis of night-sky observations. Launch ASTRAN conveniently from your email by providing analysis parameters, and benefit from its efficiency in handling telescope results. Enjoy the added convenience of next-day analysis, receiving a concise summary of results promptly after the completion of cosmic exploration. It's advanced high-level analysis made accessible. 🌌✨

Setup

ASTRAN executables:

Astran-launcher: (will be running as a cronjob every minute), listens to email inbox via IMAP and looks for email subject “ASTRAN-LAUNCH”.



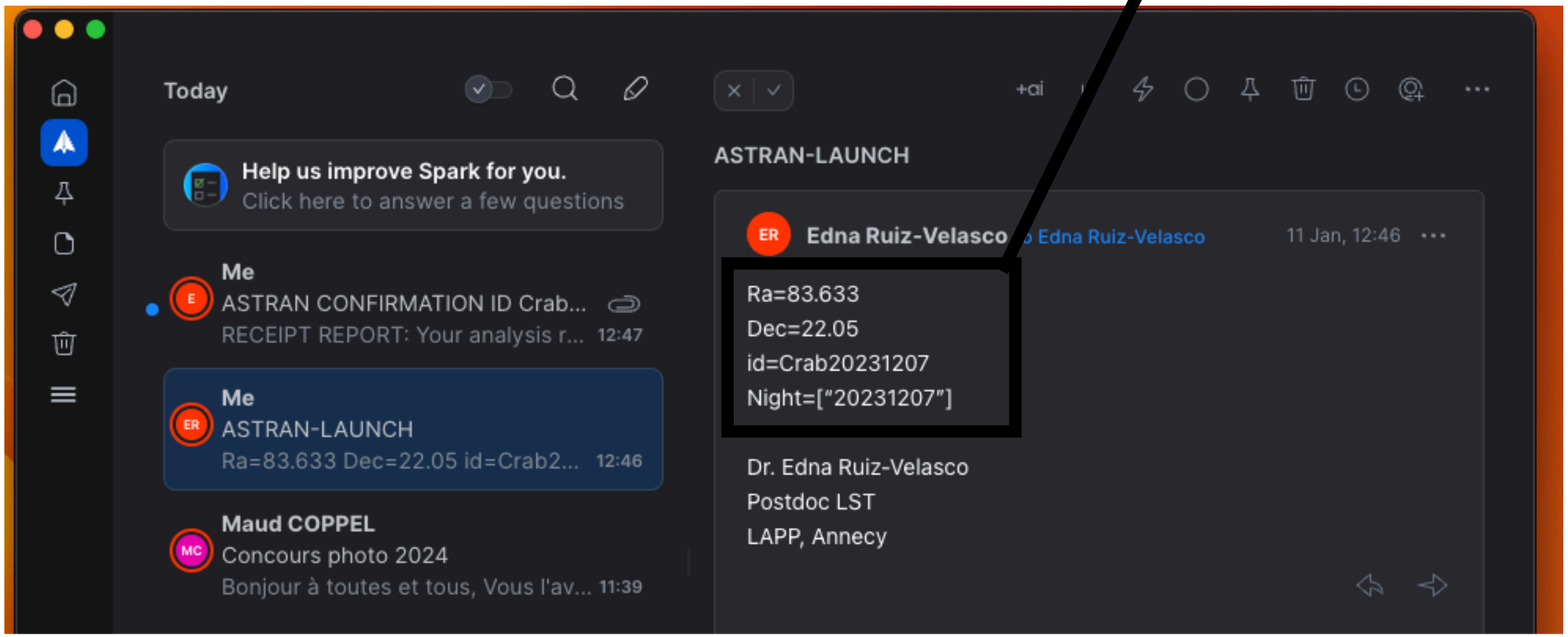
Steps

Send launcher email

Not configured,

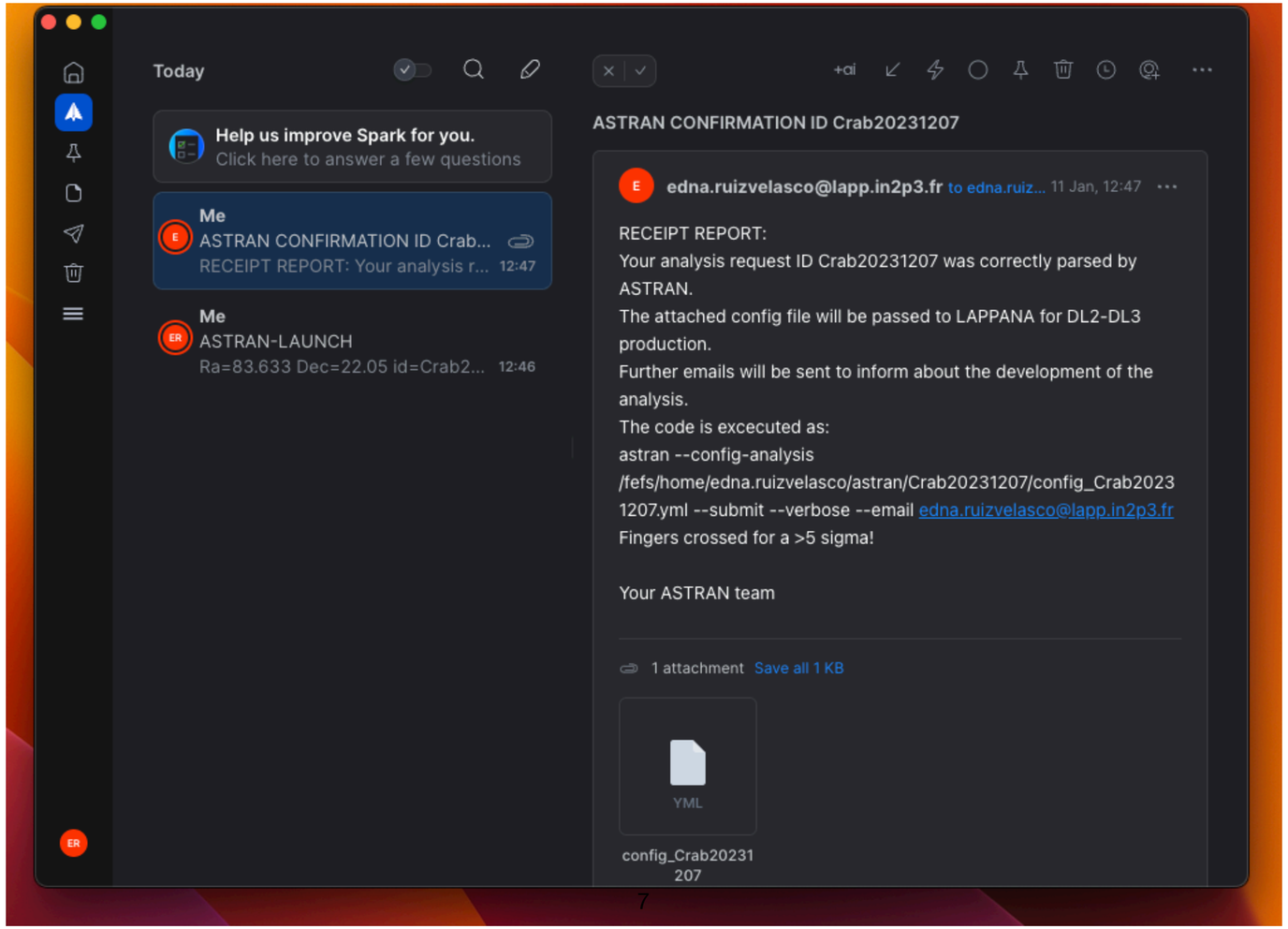
But in principle any parameter of lappana could be passed here.

(In favor to keeping it simple to reduce user-induced errors)



Steps

astran-launcher (cronjob) finds a new email with the keyword.
Execution stats and confirmation email is received



Steps

astran --config-analysis /fefs/home/edna.ruizvelasco/astran/Crab20231207/config_Crab20231207.yml --submit --verbose --email edna.ruizvelasco@lapp.in2p3.fr

- Execution begins. DL2 production submission to slurm and once finished DL3 production in interactive mode

```
create_dl2_LP - create_dl2_LP - INFO - Sent convertion command
create_dl2_LP - create_dl2_LP - INFO -
create_dl2_LP - create_dl2_LP - INFO - Elapsed time (h:m:s): 0:00:02
astran - sbatch_control - INFO - Function DL2 Creation jobarray
astran - sbatch_control - INFO - [[15864, '/fefs/home/edna.ruizvelasco/astran/jobmanager/v0.10.5/Script_dl2_15864.sh'], [1
5865, '/fefs/home/edna.ruizvelasco/astran/jobmanager/v0.10.5/Script_dl2_15865.sh'], [15866, '/fefs/home/edna.ruizvelasco/a
stran/jobmanager/v0.10.5/Script_dl2_15866.sh']]
astran - sbatch_control - DEBUG - ['31606587', '2024-01-11T11:47:16', 'Unknown', 'Unknown', 'PENDING']
astran - sbatch_control - DEBUG - ['31606588', '2024-01-11T11:47:16', 'Unknown', 'Unknown', 'PENDING']
astran - sbatch_control - DEBUG - ['31606589', '2024-01-11T11:47:16', 'Unknown', 'Unknown', 'PENDING']
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astran - sbatch_control - DEBUG - ['31606589', '2024-01-11T11:47:16', 'Unknown', 'Unknown', 'PENDING']
```
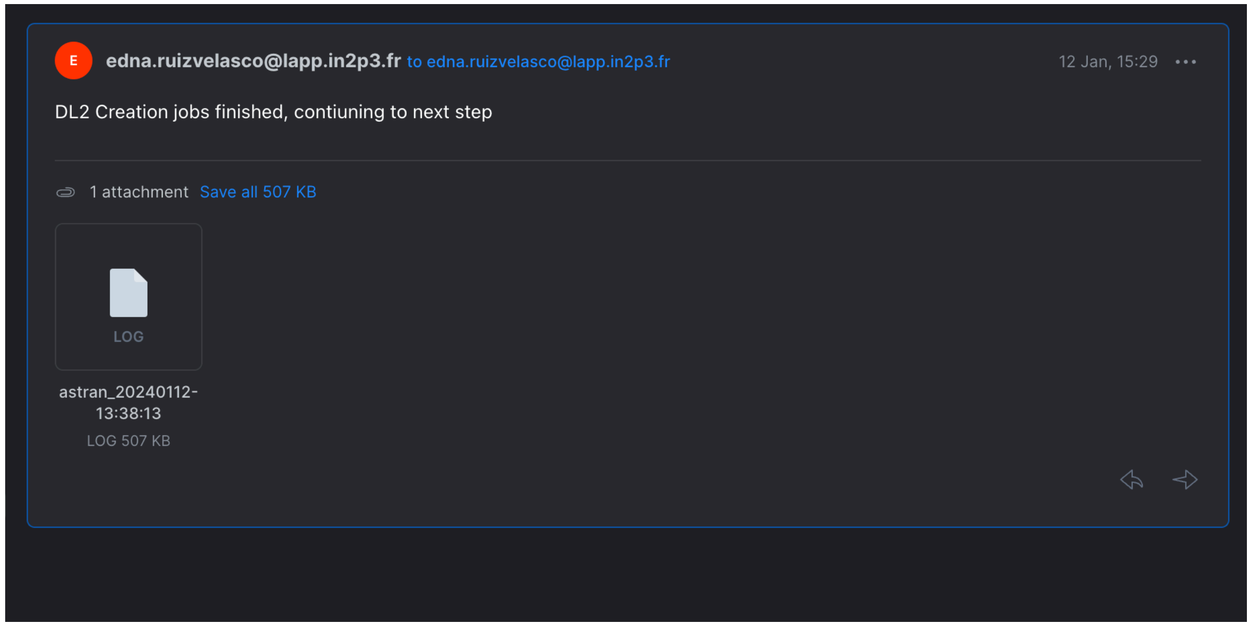
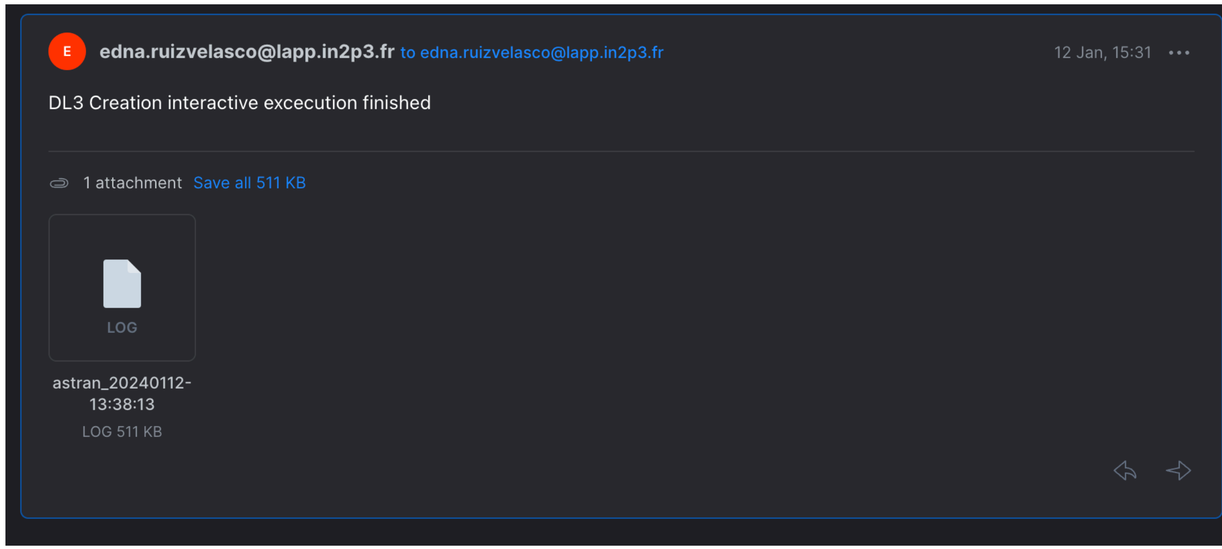

Steps

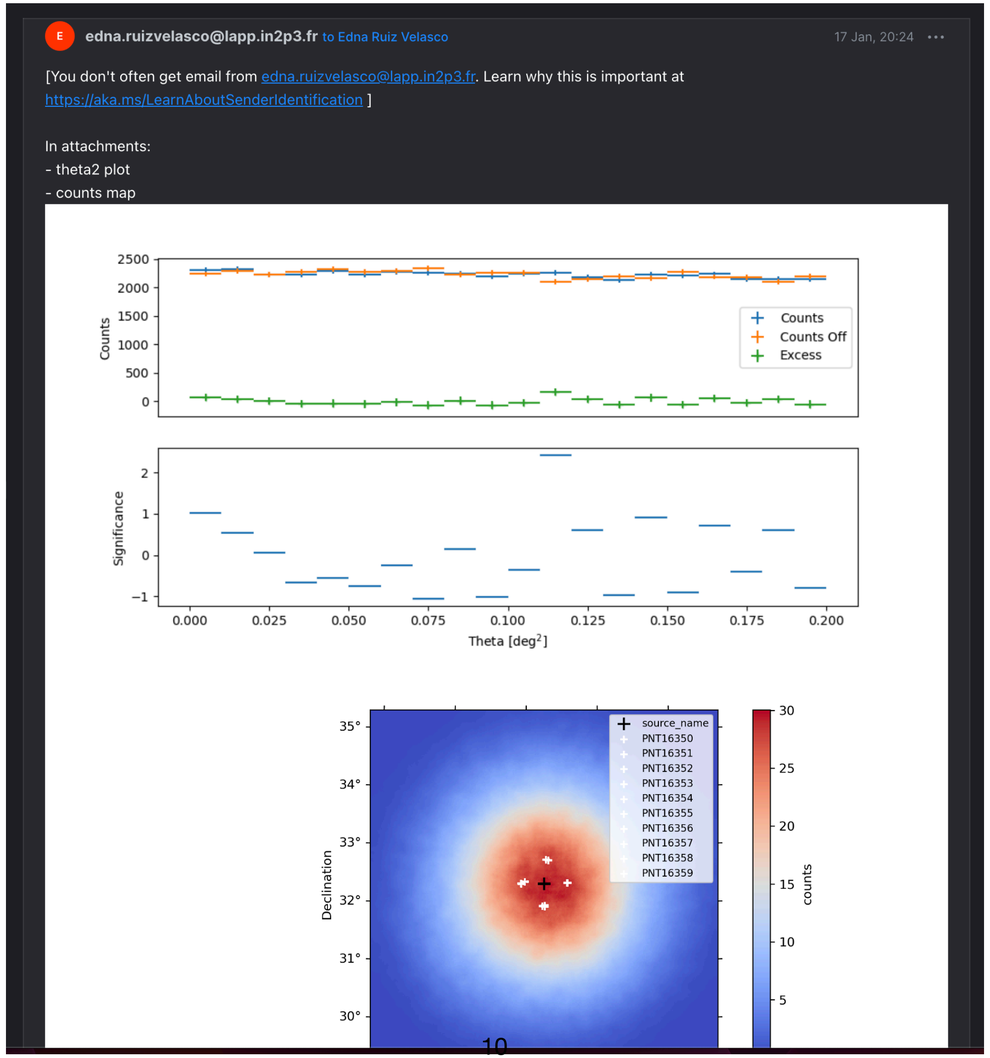
Email reports:
-include log files to look into details about processing





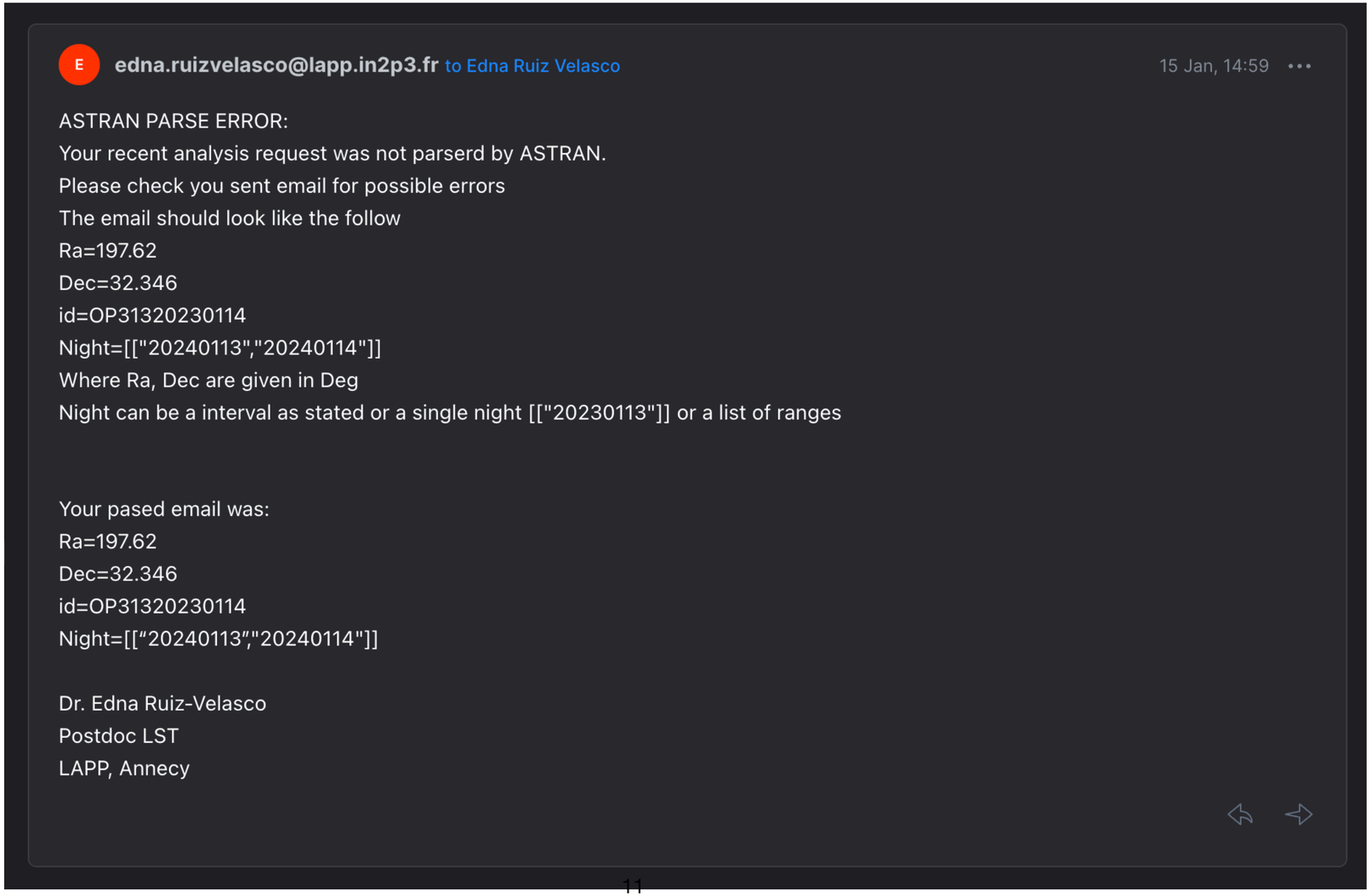
Next steps (ongoing)

Once DL3 finishes, obtain high-level plots (skymap, theta2, diagnostics —>recycle RTA scripts for this)



What if…

Your email has a typo, or you forgot the syntax



E **edna.ruizvelasco@lapp.in2p3.fr** to Edna Ruiz Velasco — 15 Jan, 14:59 •••

ASTRAN PARSE ERROR:
Your recent analysis request was not parserd by ASTRAN.
Please check you sent email for possible errors
The email should look like the follow
Ra=197.62
Dec=32.346
id=OP31320230114
Night=[["20240113","20240114"]]
Where Ra, Dec are given in Deg
Night can be a interval as stated or a single night [["20230113"]] or a list of ranges

Your pased email was:
Ra=197.62
Dec=32.346
id=OP31320230114
Night=[[“20240113”,"20240114"]]

Dr. Edna Ruiz-Velasco
Postdoc LST
LAPP, Annecy

Current incognitos

Resources distributions:

- Two approaches:

  a) user-dependant: each interested person installs and configures astral (git clone, conda envs and IMAP configuration) and submits to their slurm share.

  b) somehow get a “shared” account (email and cluster user) where people can submit their ASTRAN requests through the email trigger.

Unification (?)

- In principle ASTRAN can be put as a sub-package of lappana since it depends on lappana but their usage/philosophy is quite different
- RTA high-level routines (skymap productions, run diagnostics etc) which will become also versioned hand to hand with ASTRAN & lappana & lstchain.
- -> to lstchain <- but really not needed+political stuff (just saying).

Caveats -> To do’s

- No idea what will happen if DL1 does not exist. (Future improvement is to check if DL1 are there and if not wait)
- Send ASTRAN-LAUNCH from gmail will activate the launching but you will not receive any confirmation email (authentication issues).
- There are some instance errors that won’t be reported to the user via email.
- As lappana, it requires constant maintenance to keep up with lstchain version changes.