

ALMA Pipeline products and restoring calibrated data



Nineteenth Synthesis Imaging Workshop
13 June – July 21 2023

Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array
Robert C. Byrd Green Bank Telescope
Very Long Baseline Array



Tutorial download link

The data for this tutorial can be downloaded from this link:

https://bulk.cv.nrao.edu/almadata/public/SIS2023/ALMA_Pipeline_Tutorial/

Download all the files to a directory named Pipeline

Untar the files using the following command (change file name as needed), if you would like to explore the dataset before the tutorial:

```
tar xvf 2019.1.00475.S_uid__A00I_XI465_X2ed7_00I_of_00I.tar
```



CASA version – 6.4.1.12

The **CASA** version used for this tutorial can be downloaded from this link:

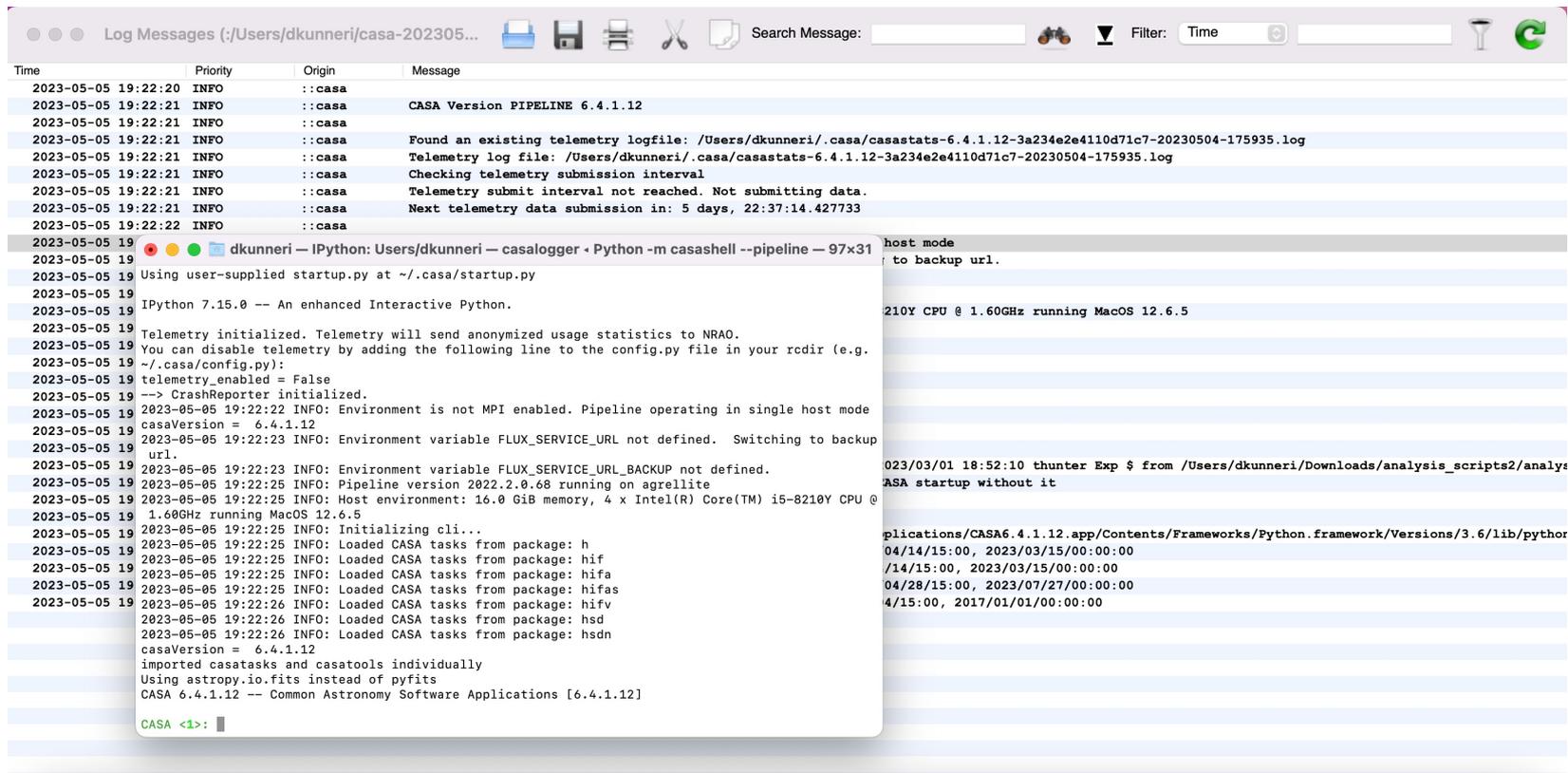
https://casa.nrao.edu/casa_obtaining.shtml

Also download the **Analysis Utilities** package and edit **CASA** initialization file following instructions here:

https://casaguides.nrao.edu/index.php/Analysis_Utilities

CASA Startup

\$ `casa --pipeline` (or `casa -r version --pipeline`, e.g. `casa -r 6.4.1.12 --pipeline` if you have multiple casa versions installed)



```
Time          Priority      Origin      Message
2023-05-05 19:22:20 INFO        ::casa
2023-05-05 19:22:21 INFO        ::casa      CASA Version PIPELINE 6.4.1.12
2023-05-05 19:22:21 INFO        ::casa
2023-05-05 19:22:21 INFO        ::casa      Found an existing telemetry logfile: /Users/dkunneri/.casa/casastats-6.4.1.12-3a234e2e4110d71c7-20230504-175935.log
2023-05-05 19:22:21 INFO        ::casa      Telemetry log file: /Users/dkunneri/.casa/casastats-6.4.1.12-3a234e2e4110d71c7-20230504-175935.log
2023-05-05 19:22:21 INFO        ::casa      Checking telemetry submission interval
2023-05-05 19:22:21 INFO        ::casa      Telemetry submit interval not reached. Not submitting data.
2023-05-05 19:22:21 INFO        ::casa      Next telemetry data submission in: 5 days, 22:37:14.427733
2023-05-05 19:22:22 INFO        ::casa
2023-05-05 19:22:22 INFO        dkunneri — IPython: Users/dkunneri — casalogger < Python -m casashell --pipeline -- 97x31 host mode
2023-05-05 19:22:22 INFO        Using user-supplied startup.py at ~/.casa/startup.py to backup url.
2023-05-05 19:22:22 INFO        IPython 7.15.0 -- An enhanced Interactive Python.
2023-05-05 19:22:22 INFO        Telemetry initialized. Telemetry will send anonymized usage statistics to NRAO.
2023-05-05 19:22:22 INFO        You can disable telemetry by adding the following line to the config.py file in your rcdir (e.g.
2023-05-05 19:22:22 INFO        ~/.casa/config.py):
2023-05-05 19:22:22 INFO        telemetry_enabled = False
2023-05-05 19:22:22 INFO        --> CrashReporter initialized.
2023-05-05 19:22:22 INFO        2023-05-05 19:22:22 INFO: Environment is not MPI enabled. Pipeline operating in single host mode
2023-05-05 19:22:22 INFO        casaVersion = 6.4.1.12
2023-05-05 19:22:23 INFO        2023-05-05 19:22:23 INFO: Environment variable FLUX_SERVICE_URL not defined. Switching to backup
2023-05-05 19:22:23 INFO        url.
2023-05-05 19:22:23 INFO        2023-05-05 19:22:23 INFO: Environment variable FLUX_SERVICE_URL_BACKUP not defined.
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Pipeline version 2022.2.0.68 running on agrellite
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Host environment: 16.0 GiB memory, 4 x Intel(R) Core(TM) i5-8219Y CPU @
2023-05-05 19:22:25 INFO        1.60GHz running MacOS 12.6.5
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Initializing cli...
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Loaded CASA tasks from package: h
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Loaded CASA tasks from package: hif
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Loaded CASA tasks from package: hifa
2023-05-05 19:22:25 INFO        2023-05-05 19:22:25 INFO: Loaded CASA tasks from package: hifas
2023-05-05 19:22:26 INFO        2023-05-05 19:22:26 INFO: Loaded CASA tasks from package: hifv
2023-05-05 19:22:26 INFO        2023-05-05 19:22:26 INFO: Loaded CASA tasks from package: hsd
2023-05-05 19:22:26 INFO        2023-05-05 19:22:26 INFO: Loaded CASA tasks from package: hsdn
2023-05-05 19:22:26 INFO        casaVersion = 6.4.1.12
2023-05-05 19:22:26 INFO        imported casatasks and casatools individually
2023-05-05 19:22:26 INFO        Using astropy.io.fits instead of pyfits
2023-05-05 19:22:26 INFO        CASA 6.4.1.12 -- Common Astronomy Software Applications [6.4.1.12]
CASA <1>:
```

