

ALMA Pipeline products and restoring calibrated data



Twentieth Synthesis Imaging Workshop
15 May – 22 May 2024

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/SIS2024/ALMA_Pipeline_Tutorial/

Download all the files to a directory named **ALMA_Pipeline_Tutorial**.

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 2019.2.00028.S_uid__A00I_XI4c3_X5e3_00I_of_00I.tar
```



CASA version – 6.5.4

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

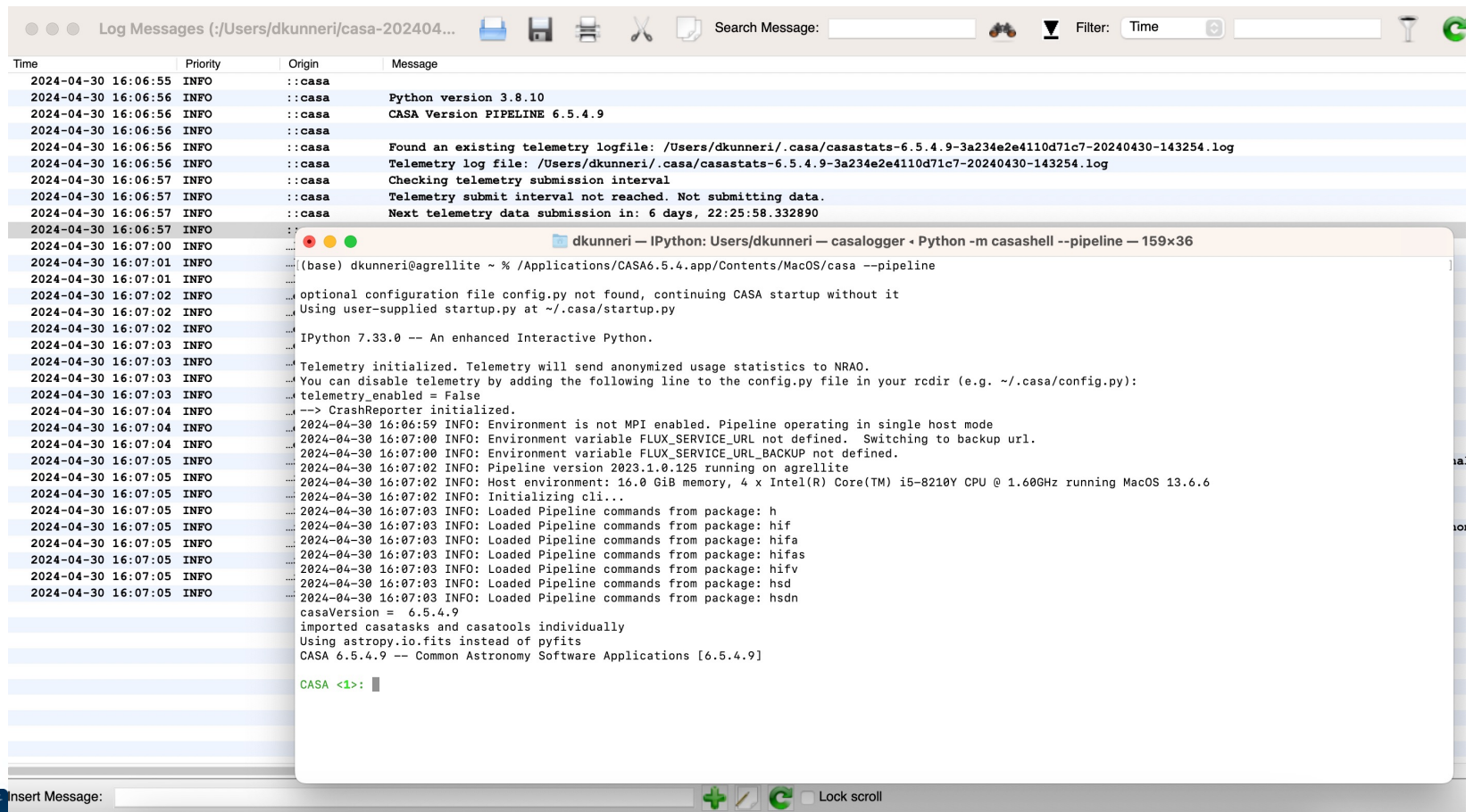
https://casa.nrao.edu/casa_obtaining.shtml

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

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

CASA Startup

⌘ casa --pipeline (or casa -r version --pipeline, e.g. casa -r 6.5.4 --pipeline if you have multiple casa versions installed)



```
Log Messages (/Users/dkunneri/casa-202404... Search Message: Filter: Time
```

Time	Priority	Origin	Message
2024-04-30 16:06:55	INFO	::casa	
2024-04-30 16:06:56	INFO	::casa	Python version 3.8.10
2024-04-30 16:06:56	INFO	::casa	CASA Version PIPELINE 6.5.4.9
2024-04-30 16:06:56	INFO	::casa	
2024-04-30 16:06:56	INFO	::casa	Found an existing telemetry logfile: /Users/dkunneri/.casa/casastats-6.5.4.9-3a234e2e4110d71c7-20240430-143254.log
2024-04-30 16:06:56	INFO	::casa	Telemetry log file: /Users/dkunneri/.casa/casastats-6.5.4.9-3a234e2e4110d71c7-20240430-143254.log
2024-04-30 16:06:57	INFO	::casa	Checking telemetry submission interval
2024-04-30 16:06:57	INFO	::casa	Telemetry submit interval not reached. Not submitting data.
2024-04-30 16:06:57	INFO	::casa	Next telemetry data submission in: 6 days, 22:25:58.332890
2024-04-30 16:06:57	INFO		
2024-04-30 16:07:00	INFO		
2024-04-30 16:07:01	INFO		
2024-04-30 16:07:01	INFO		
2024-04-30 16:07:02	INFO		optional configuration file config.py not found, continuing CASA startup without it
2024-04-30 16:07:02	INFO		Using user-supplied startup.py at ~/.casa/startup.py
2024-04-30 16:07:02	INFO		
2024-04-30 16:07:03	INFO		IPython 7.33.0 -- An enhanced Interactive Python.
2024-04-30 16:07:03	INFO		
2024-04-30 16:07:03	INFO		Telemetry initialized. Telemetry will send anonymized usage statistics to NRAO.
2024-04-30 16:07:03	INFO		You can disable telemetry by adding the following line to the config.py file in your rcdir (e.g. ~/.casa/config.py):
2024-04-30 16:07:03	INFO		telemetry_enabled = False
2024-04-30 16:07:04	INFO		--> CrashReporter initialized.
2024-04-30 16:07:04	INFO		2024-04-30 16:06:59 INFO: Environment is not MPI enabled. Pipeline operating in single host mode
2024-04-30 16:07:04	INFO		2024-04-30 16:07:00 INFO: Environment variable FLUX_SERVICE_URL not defined. Switching to backup url.
2024-04-30 16:07:05	INFO		2024-04-30 16:07:00 INFO: Environment variable FLUX_SERVICE_URL_BACKUP not defined.
2024-04-30 16:07:05	INFO		2024-04-30 16:07:02 INFO: Pipeline version 2023.1.0.125 running on agrellite
2024-04-30 16:07:05	INFO		2024-04-30 16:07:02 INFO: Host environment: 16.0 GiB memory, 4 x Intel(R) Core(TM) i5-8210Y CPU @ 1.60GHz running MacOS 13.6.6
2024-04-30 16:07:05	INFO		2024-04-30 16:07:02 INFO: Initializing cli...
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: h
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hif
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hifa
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hifas
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hifv
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hsd
2024-04-30 16:07:05	INFO		2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hsdn
2024-04-30 16:07:05	INFO		casaVersion = 6.5.4.9
2024-04-30 16:07:05	INFO		imported casatasks and casatools individually
2024-04-30 16:07:05	INFO		Using astropy.io.fits instead of pyfits
2024-04-30 16:07:05	INFO		CASA 6.5.4.9 -- Common Astronomy Software Applications [6.5.4.9]
2024-04-30 16:07:05	INFO		
2024-04-30 16:07:05	INFO		CASA <1>:

```
dkunneri — IPython: Users/dkunneri — casalogger · Python -m casashell --pipeline — 159x36  
(base) dkunneri@agrellite ~ % /Applications/CASA6.5.4.app/Contents/MacOS/casa --pipeline  
optional configuration file config.py not found, continuing CASA startup without it  
Using user-supplied startup.py at ~/.casa/startup.py  
IPython 7.33.0 -- An enhanced Interactive Python.  
Telemetry initialized. Telemetry will send anonymized usage statistics to NRAO.  
You can disable telemetry by adding the following line to the config.py file in your rcdir (e.g. ~/.casa/config.py):  
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2024-04-30 16:07:02 INFO: Pipeline version 2023.1.0.125 running on agrellite  
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2024-04-30 16:07:03 INFO: Loaded Pipeline commands from package: hsd  
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casaVersion = 6.5.4.9  
imported casatasks and casatools individually  
Using astropy.io.fits instead of pyfits  
CASA 6.5.4.9 -- Common Astronomy Software Applications [6.5.4.9]  
CASA <1>:
```

