

# SPAM: Source Peeling and Atmospheric Modeling

SPAM is a Python-based extension to [AIPS](#) ([Greisen 2003](#)), aimed at reducing high-resolution, low-frequency radio interferometric observations in a very efficient, systematic and reproducible way. Special features in SPAM, like direction-dependent ionospheric calibration and image-plane ripple suppression, will help to make high-quality sub-GHz images. SPAM is a Python module, including some C-code optimizations, that uses the Python-to-AIPS interface [ParselTongue](#) ([Kettenis et al. 2006](#)), which itself is based on [ObitTalk](#) ([Cotton 2008](#)). ParselTongue provides access to AIPS tasks, data files (images & visibilities) and tables. SPAM also uses several standard Python libraries like `scipy`, `pylab`, `matplotlib`, and `numpy`. Data reductions are captured in well-tested Python scripts that executes AIPS tasks directly (mostly during initial data reduction steps), calls high-level functions that make multiple AIPS or ParselTongue calls, and require few manual operations. SPAM now also includes a fully automated pipeline for reducing legacy GMRT observations at 150, 235, 325 and 610 MHz. Some users have also successfully applied it to legacy GMRT 1.4 GHz observations.

[Download and install SPAM on your Linux 64-bit system](#)

[How to run the SPAM pipeline \(UNDER CONSTRUCTION\)](#)

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## News

- 21-May-2017: Moved homepage including SPAM webpage to new domain.
- 06-Jan-2016: Update of webpage. Release of SPAM pipeline for GMRT. Full AIPS 31DEC13 binary install (LNX64 only), additional catalogs and more now available as single tarball.
- 15-Jan-2016: Obit now available as binary install (LNX64 only). Added simple description how to run the pipeline.

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## Download and install

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### Starting up SPAM

Setting up SPAM in Linux bash is done through:

```
. <spam installation path>/setup.sh
```

Setting up SPAM in Linux (t)csH is done through:

```
source <spam installation path>/setup.csh
```

SPAM uses AIPS in such a way that it allows creation of an isolated, self-consistent work environment per project. To run SPAM, first create a project directory:

```
mkdir -p <new project directory>
```

```
cd <new project directory>
```

Then start ParselTongue:

```
start_parseltongue.sh . <AIPS userid>
```

The AIPS userid can be any number from 11 to 9999. I usually stick with 11

In the project directory, the start\_parseltongue.sh script has set up a local AIPS work environment with 35 AIPS disks (work01-35) and a few other directories (fits, datfil, prtfil, runfil, da00, etc.). Most of this is quite specific to AIPS.

If all went well, the final output will have been

```
Welcome to ParselTongue 2.3
>>>
```

Next, we import SPAM as a python module

```
from spam import *
```

If this returns without errors it is likely that the installation has gone well.

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## Running the SPAM pipeline

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### Older materials

[SPAM tutorial](#) for the 3gc3 workshop “The Elephants In The Room”, Port Alfred, South Africa, on Feb. 19, 2013.

[SPAM example script](#) for reducing GMRT 330 MHz data.

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