



## startsas

January 27, 2025

### Abstract

Python task to start a SAS working session, either from the command line or from a Python notebook.

## 1 Use

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pipeline processing	no
interactive analysis	yes

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## 2 Description

After Heasoft and SAS initialisations, the quickest way to start a working session with SAS is to run

```
startsas odfid=0122700101
```

where the value given to the `odfid` parameter is the ODF ID of an existing XMM-Newton Observation you want to work with.

The `startsas` program will understand you want to get such Observation from the XMM-Newton Science Archive. The file download will be done by means of a special version of the Python module `astroquery` prepared to work with XMM-Newton data.

By default data are obtained at level `ODF` which provides only the raw observation data. The parameter named `level` can be used to select an alternate level `PPS`, which will download the raw data and the output products resulting from processing such data with the XMM-Newton Pipeline.

For level `ODF`, the file `<odfid>.tar.gz` is downloaded to a directory of your choice. You may set such directory by means of the parameter `workdir`. If such directory does not exist, it is created new. If you do not set a specific working directory, it is assumed your working directory is where you started with `startsas`. Once the tar file `<odfid>.tar.gz` file is downloaded, it is unpacked into a subdirectory named `<odfid>`, within your working directory.

For level `PPS`, all Pipeline products are placed in `<odfid>/pps`. A link to the html including the Observation Summary (`P<odfid>OBX000SUMMAR0000.HTM`) is printed out.



Instead of `odfid`, we can use the parameters `sas_ccf` and `sas_odf` to take already existing `ccf.cif` and SAS summary files, as

```
startsas sas_ccf=<path>/ccf.cif sas_odf=<path>/*SUM.SAS
```

The program understands you want to use these `ccf.cif` and SAS summary file, in directory `<path>`, to define `SAS_CCF` and `SAS_ODF` for subsequent SAS commands.

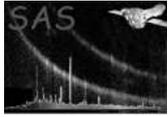
Before using effectively these files the program will check them to see whether

- The `PATH` keyword is written inside the SAS summary file
- The mandatory file `MANIFEST.NNNNNN` (where `NNNNNN` is the AMS extraction number) is present to ensure they belong to a real ODF.

### 3 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
<code>odfid</code>	no	string		
ODF ID				
<code>level</code>	no	string		
Download level. Can be either <code>ODF</code> (default) or <code>PPS</code>				
<code>workdir</code>	no	string	<code>pwd</code>	
Working directory. Allows to set the working directory different to start directory.				
<code>sasfiles</code>	no	bool	no	
Allow to set <code>sas_ccf</code> and <code>sas_odf</code> parameters. Parent parameter for them.				
<code>sas_ccf</code>	yes	string		
CIF file. Requires <code>workdir</code> be present and equal to <code>other</code>				
<code>sas_odf</code>	yes	string		
SAS summary file. Requires <code>workdir</code> be present and equal to <code>other</code>				
<code>cifbuild_opts</code>	no	string		
Options to run <code>cifbuild</code>				
<code>odfingest_opts</code>	no	string		
Options to run <code>odfingest</code>				



## 4 Input Files

1. ODF ID files

## 5 Output Files

1. Calibration Index File
2. Summary File

## References