

AIDA User Manual

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Getting Started

In order to run AIDA, you must have some form of Python 3 installed.

You must also have the following python libraries: numpy, pillow, astropy, scipy, r-fftw, cython, pip, gcc/libgcc, matplotlib

Recommended to use anaconda environment control and import the provided environment.yml file using:

```
conda env create -f environment.yml
```

followed by:

```
conda activate Python36
```

Running the Program

Once a suitable environment is available, AIDA can be run through either AIDA.py or the new AIDA_app.py.

Running through AIDA.py:

Before launching AIDA.py, open AIDA_Settings.py in a text editor. Change any settings to the value you desire. Only the image filename, and psf filename are required. Other options may be left as the default values. (For new users, it is recommended not to adjust other settings.) Then launch AIDA.py and wait for the deconvolution to end.

Running through AIDA_app.py (Recommended):

Simply launch AIDA_app.py to have the AIDA Graphical User Interface appear. You may use either the text field or the browse buttons to add the image file, psf file, and results directory name. If wishing to run AIDA with the default settings, then press run and wait for completion.

You will know when the deconvolution is finished when the Graphical User Interface automatically closes.

Before Using Advanced Settings:

Ensure you are familiar with the inner workings of how each settings will affect the deconvolution. In depth information about AIDA can be found in this article:

Hom, Erik F. Y., et al. "AIDA: an Adaptive Image Deconvolution Algorithm with Application to Multi-Frame and Three-Dimensional Data." *Journal of the Optical Society of America A*, vol. 24, no. 6, 2007, p. 1580., doi:10.1364/josaa.24.001580.