

AstraLab Quick Start

Installation

macOS

Build the installer on macOS:

```
scripts/packaging/package-macos.sh
```

Open target/installer/AstraLab-1.0.0.dmg, then drag AstraLab.app to /Applications.

Windows

Build the MSI from PowerShell on Windows:

```
scripts\packaging\package-windows.ps1
```

Run target\installer\AstraLab-1.0.0.msi. The installer adds AstraLab to the Start Menu, creates a shortcut, registers .arvt and .aproj, and appears in Add/Remove Programs.

Linux

Build the app image on Linux:

```
scripts/packaging/package-linux.sh
```

The app image is written to target/installer/AstraLab/. If appimagetool is installed, an AppImage is also produced.

Creating a Project

Use File > New Project.

Enter a project name and choose a location. AstraLab creates:

```
ProjectName/  
project.aproj  
main.arvt  
exports/  
graphs/  
reports/
```

The project opens automatically after creation.

Creating an ARVT File

Use File > New ARVT File.

AstraLab opens a new unsaved tab named NewFile.arvt* with starter contents:

```
rocket NewRocket
```

```
simulate  
report
```

Use File > Save or File > Save As to choose a filename and location. Standalone ARVT files are saved as .arvt.

Running Simulations

Click Run, or include the command:

```
simulate
```

The console reports parsing, stability, thrust-to-weight ratio, warnings, and the simulation summary.

Exporting Results

After a simulation, use the toolbar or File menu:

- ? CSV writes exports/flight_data.csv.
- ? Graph writes the selected graph PNG.
- ? All Graphs writes all standard graph PNGs.
- ? report in ARVT or the Report button writes reports/report.txt.

Simulation output is also updated automatically after each simulation run.

Project Structure

Projects use a fixed layout:

```
ProjectName/  
project.aproj  
main.arvt  
exports/  
    flight_data.csv  
graphs/  
    altitude.png  
    velocity.png  
    acceleration.png  
    dynamic_pressure.png  
    trajectory.png  
reports/  
    report.txt
```

Keep project assets inside this folder so Open Recent and operating-system file associations continue to work cleanly.

Troubleshooting

If a file does not open, verify it ends in .arvt or .aproj.

If graphs or CSV files are missing, run the simulation again and check that the project folder is writable.

If the app will not launch from a packaged installer, rebuild on the target platform with a full JDK 21 or newer.

If file associations are not active after installation, reinstall the platform package and see docs/PACKAGING.md for manual registration notes.