

# Astronomy Lab Help Index

The Index lists the Help topics available for Astronomy Lab. Use the scroll bar to see entries not currently visible in the Help window.

To learn how to use Help, choose Using Help from the Help menu.

## Introduction

[Registering this Shareware Program](#)

[Getting Started](#)

[Caveats](#)

## Keyboard

[Astronomy Lab Keys](#)

## Commands

[File Menu Commands](#)

[Edit Menu Commands](#)

[Location Menu Commands](#)

[Reports Menu Commands](#)

[Graphs Menu Commands](#)

[Movies Menu Commands](#)

[Display Menu Commands](#)

[Stop Menu Commands](#)

## **Commands**

[File Menu Commands](#)

[Edit Menu Commands](#)

[Location Menu Commands](#)

[Reports Menu Commands](#)

[Graphs Menu Commands](#)

[Movies Menu Commands](#)

[Display Menu Commands](#)

[Stop Menu Commands](#)

[Help Menu Commands](#)

## Registering this Shareware Program

Astronomy Lab is shareware. To register your copy, please send \$30.00 US plus postage to:

Personal MicroCosms  
8547 E. Arapahoe Road  
Suite J-147  
Greenwood Village, CO 80112 USA

Postage:

US and Canada: \$3.00 Overseas: \$15.00 (for airmail delivery)

What you get for registering:

1. Astronomy Lab User's Guide (87 pages, professionally typeset and printed, spiral bound).
2. Disk containing the latest version of Astronomy Lab. Please specify disk type: 5 1/4" high density or 3 1/2" high density.
3. Personal MicroCosms' customer support telephone number.
4. Notification by mail when future versions of Astronomy Lab are available.

## Getting Started

1. **On-line Help:** To get on-line help, press the F1 key. Pressing the F1 key when a menu item or dialog box is displayed will give help for the menu item or dialog box. For further details, see the entry for F1 in [Astronomy Lab Keys](#).
2. **Setting your Location:** Astronomy Lab's reports, graphs, and movies are customized for a given latitude, longitude, elevation above sea level, and time zone. To enter your location, see [Set Location](#).
3. **Assigning Colors:** To change the color of objects drawn by Astronomy Lab, use the [Assign Colors](#) command. Run this command to ensure that all objects are displayed attractively on your system.
4. **Times:** All times entered into Astronomy Lab and output by Astronomy Lab are in standard time, not daylight savings time.

**See also:** [Caveats](#)

## Caveats

1. **Times:** All times entered into Astronomy Lab and output by Astronomy Lab are in standard time, not daylight savings time.
2. **Planetarium Movie:** Since the sizes of the disks of the sun and moon are exaggerated at view angles greater than  $5^\circ$ , a view angle of  $5^\circ$  must be specified in order to accurately observe eclipses, transits, and occultations.

## Astronomy Lab Keys

Use the following keys in Astronomy Lab:

Key(s)	Function
Ctrl+Insert	Copies current report, movie frame, or graph into the Clipboard
Esc	Stops the current command
F1	Activates the Astronomy Lab Help system.  To get help on a given <b>menu item</b> (for example the Printer Setup item), Select the corresponding menu (Alt, F). Then move to the item by typing the up and down arrow keys. Then press F1 for help on the menu item.  To get help on a given <b>dialog box</b> , simply press F1 when the dialog box is displayed.
F2	Increases the rate at which time passes between successive movie frames
F3	Decreases the rate at which time passes between successive movie frames
F4	Reverses the rate at which time passes between successive movie frames
F5	Decreases the view angle of the movie, causing the center of the screen to be enlarged
F6	Increases the view angle of the movie, causing the center of the screen to be reduced
F7	Causes moving objects in movies to leave trails

## **File Menu Commands (Alt,F)**

Print

Setup Printer

Exit

## **File Print (Alt,F,P)**

Prints the current report, movie frame, or graph on the currently selected printer. NOTE: to print a movie frame, the movie must be stopped.

## **File Printer Setup (Alt,F,r)**

Allows you to select a printer, change its settings, and select a font for printing reports.

### **Dialog Box:**

#### ***OK***

Saves the current printer, printer settings, and font.

#### ***Cancel***

Restores the current printer, printer settings, and font to their previous values.

#### ***Setup...***

Allows you to configure your printer.

#### ***Font...***

Allows you to select a font for printing reports.

## **File Exit (Alt,F,x)**

Quits the Astronomy Lab program.

If you have changed the color assignments without saving them, you will have a chance to save them. If you have changed the location database without saving it, you will have a chance to save it.

## **Edit Menu Commands (Alt,E)**

Copy

## **Edit Copy (Control+Insert or Alt,E,C)**

Copies the current report, movie frame, or graph into the Clipboard. After an item has been copied into the Clipboard, it can be pasted into another program (for example, a word processor or paint program).

Once a report, graph, or movie frame has been generated, it can be copied into another program as follows:

1. If copying a movie frame, stop the movie.
2. Press Ctrl+Insert or choose Copy from the Edit menu.
3. Go to the program to which you want to copy the item
4. Select Paste from the Edit menu

The item will now be copied into the program, provided that program can copy items from the Clipboard.

## **Location Menu Commands (Alt,L)**

Set Location

## **Location Set Location (Alt,L,S)**

Allows you to enter a location name, latitude, longitude, elevation above sea level, and a time zone. Once the location data has been entered, reports, graphs, and movies will be customized for that location.

### **Dialog Box:**

#### **Location**

Name of location. You can choose a location already in Astronomy Lab's location database, or enter a new one.

There are three different ways to choose an existing location:

1. Type the up and down arrow keys to sequence through the location names.
2. Press the arrow at the right of the box to open the drop-down list box. Then select a city from the list.
3. Type in the city's name exactly as it exists in the database.

To enter the name of a city not already in the location database, simply type the city's name.

#### **Latitude**

The location's latitude in degrees, minutes, and seconds.

#### **North**

Select if the location is north of the equator.

#### **South**

Select if the location is south of the equator.

#### **Longitude**

The location's longitude in degrees, minutes, and seconds.

#### **West**

Select if the location is west of Greenwich, England.

#### **East**

Select if the location is east of Greenwich, England.

#### **Elevation about Sea Level**

The location's elevation above sea level in meters. Enter a negative number if the location is below sea level. Enter 0 if you don't know the elevation.

#### **Time Zone**

Time zone in hours. For locations in the U.S.A., use the following:

Region	Time Zone
--------	-----------

Eastern		-5
Central		-6
Mountain	-7	
Pacific	-8	

For locations outside the U.S.A., see the "Universal Time and Time Zones" section in Appendix A of the User's Guide.

**OK**

Saves the location information temporarily and quits the dialog box.

**Save**

Saves the location information in a disk file which will be reloaded every time Astronomy Lab is run.

**Cancel**

Quits the dialog box without changing the location information.

**See also:** [Caveats](#)

## **Reports Menu Commands (Alt,R)**

### General Information About Reports

Introduction

Calendar

Seasons

Dates of Easter

Lunar Eclipses

Solar Eclipses

Planet View Info

Planet Apsides

Planet Conj/Opp

Planet Data

Moon Apsides

Meteor Showers

Twilight

Almanac

## **Reports, General Information**

### **Customizing a Report For a Location**

Most reports are customized for a specific location. See [Set Location](#) for further information.

### **Scrolling Report Text**

After a report has been generated, the report text can be scrolled vertically or horizontally with the scroll bars. Pressing the Home key will go to the beginning of the report, and pressing the End key will go to the end. Pressing the Page Up or Page Down will scroll the text up or down one page. Pressing the up or down arrow keys will move the text up or down one row. Pressing the left or right arrow keys will move the text one column to the left or right.

### **Printing a Report**

A report can be printed after it has been generated. See [Print](#) for further information.

### **Copying a Report into Another Program**

A report can be copied into other Windows programs after it has been generated. See [Copy](#) for further information.

### **Stopping a Report**

Any report can be stopped by pressing the Esc key. See [Stop Command](#) for further information.

**See also:** [Caveats](#)

## **Reports Introduction (Alt,R,I)**

The Introduction report summarizes the most important information needed to interpret all reports generated by Astronomy Lab. If you generate reports for people who do not own Astronomy Lab, you may want to include an Introduction report.

## **Reports Calendar (Alt,R,C)**

The Calendar report gives the times and dates of the following astronomical events, formatted as a monthly calendar:

- \* Sun Rise and Set
- \* Moon Rise and Set
- \* Solar Eclipses
- \* Lunar Eclipses
- \* Moon Phases
- \* Equinoxes and Solstices

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

***OK***

Quits the dialog box and generates the report.

***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Seasons (Alt,R,n)**

The Seasons report gives the times and dates of equinoxes and solstices, and the lengths of the seasons for a range of years.

### **Dialog Box:**

#### ***Start Year, Stop Year***

Range of years for which the report will be generated. The Stop Year cannot be less than the Start Year.

#### ***OK***

Quits the dialog box and generates the report.

#### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Dates of Easter (Alt,R,E)**

The Dates of Easter report gives the dates of Easter for a range of years.

### **Dialog Box:**

#### ***Start Year, Stop Year***

Range of years for which the report will be generated. The Stop Year cannot be less than the Start Year.

#### ***OK***

Quits the dialog box and generates the report.

#### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Lunar Eclipses (Alt,R,u)**

The Lunar Eclipses report gives predictions of all umbral lunar eclipses that occur in a given range of years.

### **Dialog Box:**

#### ***Start Year,***

#### ***Stop Year***

Range of years for which the report will be generated. The Stop Year cannot be less than the Start Year.

#### ***OK***

Quits the dialog box and generates the report.

#### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Solar Eclipses (Alt,R,S)**

The Solar Eclipses report gives predictions of all solar eclipses that occur in a given range of years.

### **Dialog Box:**

#### ***Start Year, Stop Year***

Range of years for which the report will be generated. The Stop Year cannot be less than the Start Year.

#### ***OK***

Quits the dialog box and generates the report.

#### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Planet View Info (Alt,R,V)**

The Planet View Info report gives information useful for observing the planets.

### **Dialog Box:**

***Year,  
Start Month,  
Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

***Planets***

Allows you to select the planets that will appear in the report. Select at least one planet.

***OK***

Quits the dialog box and generates the report.

***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Planet Apsides (Alt,R,A)**

The Planet Apsides report gives the dates of apsides (i.e. perihelion and aphelion) for a set of planets over a given range of years.

### **Dialog Box:**

#### ***Start Year, Stop Year***

Range of years for which the report will be generated. The Stop Year cannot be less than the Start Year.

#### ***Planets***

Allows you to select the planets that will appear in the report. Select at least one planet.

#### ***OK***

Quits the dialog box and generates the report.

#### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Planet Conj/Opp (Alt,R,P)**

The Planet Conj/Opp report gives the dates and times of conjunctions and oppositions for a set of planets over a given range of years.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

### ***Planets***

Allows you to select the planets that will appear in the report. Select at least one planet.

### ***OK***

Quits the dialog box and generates the report.

### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Planet Data (Alt,R,D)**

The Planet Data report gives the most important information about the planets.

**See also:** [General Information About Reports](#)

## **Reports Moon Apsides (Alt,R,M)**

The Moon Apsides report gives the dates and times of apsides (i.e. perigee and apogee) of the moon over a range of months.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

### ***OK***

Quits the dialog box and generates the report.

### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Meteor Showers (Alt,R,h)**

The Meteor Showers report gives information about the meteor showers that occur over a range of months.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

### **OK**

Quits the dialog box and generates the report.

### **Cancel**

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Twilight (Alt,R,T)**

The Twilight report gives the times of nautical, astronomical, and civil twilight over a range of months.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

### ***OK***

Quits the dialog box and generates the report.

### ***Cancel***

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Reports Almanac (Alt,R,I)**

The Almanac report generates all of Astronomy Lab's reports for the specified range of months.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report will be generated. The Stop Month cannot be less than the Start Month.

### **OK**

Quits the dialog box and generates the report.

### **Cancel**

Quits the dialog box. The report is not generated.

**See also:** [General Information About Reports](#)

## **Graphs Menu Commands (Alt,G)**

### General Information About Graphs

Jupiter Moons Orbit

Planet Orbit

Planet Magnitude

Planet Illum. Frac.

Planet Diameter

Planet Distance

Planet Angle

Equation of Time

Day Length

Sun Angle

Sun Shadow

Sunrise

Moon Angular Speed

Moon Illum. Frac.

## **Graphs, General Information**

### **Customizing a Graph For a Location**

Most graphs are customized for a specific location. See [Set Location](#) for further information.

### **Colors**

The colors of items graphed by Astronomy Lab can be customized. See [Assign Colors](#) for further information.

### **Grid Lines and Tick Marks**

Graphs can be drawn with tick marks or grid lines. See [Tick Marks](#) and [Grid Lines](#) for further information.

### **Printing a Graph**

A graph can be printed after it has been generated. See [Print](#) for further information.

### **Copying a Graph into Another Program**

A graph can be copied into other Windows programs after it has been generated. See [Copy](#) for further information.

### **Stopping a Graph**

Any graph can be stopped by pressing the Esc key. See [Stop Command](#) for further information.

**See also:** [Caveats](#)

## **Graphs Jupiter Moons Orbit (Alt,G,J)**

The Jupiter Moons Orbit graph shows the configurations of Jupiter's four bright moons. The horizontal strip in the middle of the graph represents the width of Jupiter's disk. Following traditional practice, east and west are reversed in the graph - therefore if a moon appears west of Jupiter on the graph, it will appear east of Jupiter when viewed with a non-inverting telescope or binoculars.

### **Dialog Box:**

**Year,**

**Month,**

Month for which the graph will be drawn.

**Moons**

Allows you to select the moons that will appear in the graph. Select at least one moon.

**Label Moons**

Place an X in this check box if you want the numbers of moons to appear next to them in the graph.

**OK**

Quits the dialog box and draws the graph.

**Cancel**

Quits the dialog box without drawing the graph.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Orbit (Alt,G,O)**

The Planet Orbit graph shows the right ascensions of a set of planets over one year. Since constellation abbreviations are drawn on the right side of the graph, you can determine the constellation in which a planet will be on a given date.

The thick diagonal line extending from the bottom left to the top right represents the sun's right ascension. When a planet's curve crosses this line, that planet is in conjunction with the sun. The other two thick diagonal lines represents the sun's right ascension + 12 hours, thus a planet's curve will cross one of these lines when it is in opposition.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***Planets***

Allows you to select the planets that will appear in the graph. Select at least one planet.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Magnitude (Alt,G,M)**

The Planet Magnitude graph shows the visual magnitudes of a set of planets over one year. The brighter an object is, the smaller its magnitude. The brightest star has a magnitude of about 1 and a star that is barely visible to the naked eye has a magnitude of about 6.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***Planets***

Allows you to select the planets that will appear in the graph. Select at least one planet.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Illum. Frac. (Alt,G,F)**

The Planet Illum. Frac. graph shows the illuminated fractions of a set of planets over one year. A celestial body's illuminated fraction is the fraction of the body's disk illuminated by the sun.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***Planets***

Allows you to select the planets that will appear in the graph. Select at least one planet.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Diameter (Alt,G,D)**

The Planet Diameter graph shows the angular diameters of a set of planets over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***Planets***

Allows you to select the planets that will appear in the graph. Select at least one planet.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Distance (Alt,G,s)**

The Planet Distance graph shows the distances of a set of planets from the earth or sun over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***Planets***

Allows you to select the planets that will appear in the graph. Select at least one planet.

#### ***From Earth***

Select if you want to graph the distance from the planets to the sun.

#### ***From Sun***

Select if you want to graph the distance from the planets to the earth.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Planet Angle (Alt,G,A)**

The Planet Angle graph shows the angles between one planet (the Main Planet) and a set of other planets over one month.

### **Dialog Box:**

#### ***Year, Month***

Year and month for which the graph will be generated.

#### ***Main Planet***

Allows you to select the main planet.

#### ***Other Planets***

Allows you to select the other planets that will appear in the graph.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Equation of Time (Alt,G,q)**

The Equation of Time graph shows the difference between mean time and apparent time over one year. The equation of time is the amount of time that a sundial is in error.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Day Length (Alt,G,L)**

The Day Length graph shows the length of days over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Sun Angle (Alt,G,n)**

The Sun Angle graph shows the angle of the sun at local apparent noon over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Sun Shadow (Alt,G,w)**

The Sun Shadow graph shows an analemma. An analemma is the figure-8 path followed by a shadow on the ground observed every day at 12:00 mean time for one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Sunrise (Alt,G,r)**

The Sunrise graph shows the azimuth of the sun at sunrise over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Moon Angular Speed (Alt,G,g)**

The Moon Angular Speed graph shows the angular speed at which the moon moves through the ecliptic over one year.

### **Dialog Box:**

#### ***Year***

Year for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Graphs Moon Illum. Frac. (Alt,G,u)**

The Moon Illum. Frac. graph shows the illuminated fraction of the moon over one month. A full moon has an illuminated fraction of 1.0. A new moon has an illuminated fraction of 0.0.

### **Dialog Box:**

#### ***Year, Month***

Year and month for which the graph will be generated.

#### ***OK***

Quits the dialog box and generates the graph.

#### ***Cancel***

Quits the dialog box. The graph is not generated.

**See also:** [General Information About Graphs](#)

## **Movies Menu Commands (Alt,M)**

### General Information About Movies

Planetarium

Jupiter Moons Side

Jupiter Moons Top

Ecliptic Side

Ecliptic Top

Day/Night

Binary Star

Speed Up

Slow Down

Reverse Time Speed

Zoom In

Zoom Out

Jet Trails

## **Movies, General Information**

### **Customizing a Movie For a Location**

Most movies are customized for a specific location. See [Set Location](#) for further information.

### **Time Speed**

The time speed of a movie determines how much time passes on the computer's clock between successive movie frames. The time speed does not change the rate at which movie frames are displayed on the screen. The time speed can be changed as a movie is running. For further information, see [Speed Up](#), [Slow Down](#), and [Reverse Time Speed](#).

### **View Angle**

The view angle of a movie determines the field of view. A large view angle works like a wide angle lens, allowing you to see many objects crowded together. A small view angle works like a telephoto lens, zooming in on the objects in the center of the screen. The view angle can be changed as a movie is running. For further information, see [Zoom In](#) and [Zoom Out](#).

### **Jet Trails**

Enabling Jet Trails will cause moving objects to leave trails. For further information, see [Jet Trails](#).

### **Colors**

The colors of items appearing in movies can be customized. See [Assign Colors](#) for further information.

### **Printing a Movie Frame**

A movie frame can be printed after it has been generated. See [Print](#) for further information.

### **Copying a Movie Frame into Another Program**

A movie frame can be copied into other Windows programs after it has been generated. See [Copy](#) for further information.

### **Stopping a Movie**

Any movie can be stopped by pressing the Esc key. See [Stop Command](#) for further information.

**See also:** [Caveats](#)

## **Movies Planetarium (Alt,M,P)**

The Planetarium movie shows the celestial sphere, complete with the sun, moon, stars, and planets. Almost every important astronomical event can be observed with the Planetarium movie, including:

- \* Solar Eclipses
- \* Lunar Eclipses
- \* Transits of Mercury and Venus
- \* Lunar Occultations of Stars and Planets
- \* Planetary Occultations

### **Dialog Box:**

**Year,**  
**Month,**  
**Day**

Date for which the movie will be run.

**Time**

Time for which the movie will be run in hours and minutes (24 hour format).

**Now**

Automatically inserts the current date and time in the Year, Month, Day, and Time fields.

**Time Speed**

Specifies the amount of time that will elapse between successive movie frames. The Time Speed must be between -64 and 64.

**Turbo**

Select to increase the amount of time that will elapse between successive movie frames by a factor of 1000. Requires that you track on a star or planet.

**View Angle**

Specifies the view angle of the movie. A large view angle results in a wide view, and a small view angle gives a narrow view. The View Angle must be between 0 and 90.

**Body**

Allows you to specify the body that will appear in the center of the screen when the movie begins.

**Track Body**

Select to track the movement of the body.

**Sun/Moon**

Select to include the sun and moon in the movie.

**Planets**

Select to include all planets in the movie.

**Stars**

Select to include stars in the movie.

**Label Planets**

Place an X in this check box if you want the names of planets to appear next to them in the movie.

**Star**

Allows you to select a star to appear in the center of the screen. This list box will only appear if you selected the Star radio button in the Body group box, described above.

**OK**

Quits the dialog box and runs the movie.

**Cancel**

Quits the dialog box without running the movie.

**See also:** [General Information About Movies](#)

## **Movies Jupiter Moons Side (Alt,M,J)**

The Jupiter Moons Side movie shows the orbits of Jupiter's four bright moons as they would appear to an observer on the earth. The larger disk in the middle of the screen is Jupiter and the smaller disks are Jupiter's four bright moons. When a moon moves behind one side of the planet, the moon will disappear and then reappear later on the other side.

The orbits of the moons in the Jupiter Moons Side movie are approximately horizontal. In reality, the orbits of the moons appear tilted with respect to the horizon to observers on earth.

## **Movies Jupiter Moons Top (Alt,M,M)**

The Jupiter Moons Top movie shows the orbits of Jupiter's four bright moons as they would appear to an observer directly above Jupiter's north pole.

### **Dialog Box:**

**Year,**  
**Month,**  
**Day**

Date for which the movie will be run.

**Time**

Time for which the movie will be run in hours and minutes (24 hour format).

**Now**

Automatically inserts the current date and time in the Year, Month, Day, and Time fields.

**Time Speed**

Specifies the amount of time that will elapse between successive movie frames. The Time Speed must be between -64 and 64.

**Moons**

Allows you to select the moons that will appear in the movie. Select at least one moon.

**Label Moons**

Place an X in this check box if you want the numbers of moons to appear next to them in the movie.

**OK**

Quits the dialog box and runs the movie.

**Cancel**

Quits the dialog box without running the movie.

**See also:** [General Information About Movies](#)



## **Movies Ecliptic Side (Alt,M,E)**

The Ecliptic Side movie shows the orbits of a set of planets in the ecliptic (side-view).

## **Movies Ecliptic Top (Alt,M,I)**

The Ecliptic Top movie shows the orbits of a set of planets in the ecliptic, viewed from above the ecliptic.

### **Dialog Box:**

**Year,  
Month,  
Day**

Date for which the movie will be run.

**Time**

Time for which the movie will be run in hours and minutes (24 hour format).

**Now**

Automatically inserts the current date and time in the Year, Month, Day, and Time fields.

**Time Speed**

Specifies the amount of time that will elapse between successive movie frames. The Time Speed must be between -64 and 64.

**View Angle**

Specifies the view angle of the movie. A large view angle results in a wide view, and a small view angle gives a narrow view. The View Angle must be between 0 and 90.

Note: the View Angle field is not displayed for the Ecliptic Side movie.

**Planets**

Allows you to select the planets that will appear in the movie. Select at least one planet.

**Label Planets**

Place an X in this check box if you want the names of planets to appear next to them in the movie.

**OK**

Quits the dialog box and runs the movie.

**Cancel**

Quits the dialog box without running the movie.

**See also:** [General Information About Movies](#)

## **Movies Day/Night (Alt,M,y)**

The Day/Night movie shows where on the earth it is day and where it is night.

### **Dialog Box:**

**Year,  
Month,  
Day**

Date for which the movie will be run.

**Time**

Time for which the movie will be run in hours and minutes (24 hour format).

**Now**

Automatically inserts the current date and time in the Year, Month, Day, and Time fields.

**Real Time**

Causes the time between successive movie frames to change at the same rate as a clock.

**1 Hour,  
1 Day,  
1 Week,  
1 Month**

Causes one hour, one day, one week, or one month to elapses between successive movie frames.

**OK**

Quits the dialog box and runs the movie.

**Cancel**

Quits the dialog box without running the movie.

**See also:** [General Information About Movies](#)

## **Movies Binary Star (Alt,M,B)**

The Binary Star movie shows the orbits of a binary star.

### **Dialog Box:**

#### ***Year***

Year for which the movie will be run.

#### ***Time Speed***

Specifies the amount of time that will elapse between successive movie frames. The Time Speed must be between -64 and 64.

#### ***View Angle***

Specifies the view angle of the movie. A large view angle results in a wide view, and a small view angle gives a narrow view. The View Angle must be between 0 and 90.

#### ***Binary Stars***

List of all stars for which Binary Star movies can be run. Select the star that you're interested in.

#### ***OK***

Quits the dialog box and runs a Binary Star movie for the selected star.

#### ***Cancel***

Quits the dialog box without running the Binary Star movie.

**See also:** [General Information About Movies](#)

## **Movies Speed Up (F2 or Alt,M,U)**

Increases the rate at which time passes between successive movie frames.

**See also:** [General Information About Movies](#)

## **Movies Slow Down (F3 or Alt,M,D)**

Decreases the rate at which time passes between successive movie frames.

**See also:** [General Information About Movies](#)

## **Movies Reverse Time Speed (F4 or Alt,M,R)**

Reverses the rate at which time passes between successive movie frames.

**See also:** [General Information About Movies](#)

## **Movies Zoom In (F5 or Alt,M,I)**

Decreases the view angle of the movie, causing the center of the screen to be enlarged.

**See also:** [General Information About Movies](#)

## **Movies Zoom Out (F6 or Alt,M,O)**

Increases the view angle of the movie, causing the center of the screen to be reduced.

**See also:** [General Information About Movies](#)

## **Movies Jet Trails (F7 or Alt,M,T)**

Causes moving objects in movies to leave trails.

**See also:** [General Information About Movies](#)

## **Display Menu Commands (Alt,D)**

Tick Marks

Grid Lines

Assign Colors

## **Display Tick Marks (Alt,D,T)**

When the Tick Marks item is selected, graphs will be drawn with tick marks.

## **Display Grid Lines (Alt,D,G)**

When the Grid Lines item is selected, graphs will be drawn with grid lines.

## **Display Assign Colors (Alt,D,A)**

Allows you to change the color of objects drawn by Astronomy Lab (e.g. sun, moon, planets, stars). To change an object's color, first select the object's name from the list. Then select a new color for the object with the mouse. Make sure that you do not assign the window background color to any object, or it will be invisible.

### **Dialog Box:**

#### ***Objects***

List of all objects which can be assigned colors.

#### ***Colors***

Colors that can be assigned to objects.

#### ***OK***

Quits the dialog box and saves the color assignments until you quit the program.

#### ***Save***

Saves the color assignments in a disk file which will be reloaded every time Astronomy Lab is run.

#### ***Cancel***

Quits the dialog box without changing the color assignments.

## **Stop Menu Commands (Alt,S)**

Stop Command

## **Stop Stop Command (Esc or Alt, S, S)**

Stops the current command (report, graph, or movie), allowing you to run other commands or quit the program.

## **Help Menu Commands (Alt,H)**

[Index](#)

[Keyboard](#)

[Commands](#)

[Using Help](#)

[About Astronomy Lab](#)

## **Help Index (F1 or Alt,H,I)**

Displays the Astronomy Lab Help index.

Press Tab to move to the topic you want, and then press Enter.

With the mouse, click the name of the topic you want.

## **Help Keyboard (Alt,H,K)**

Gives information about using keyboard keys in Astronomy Lab.

## **Help Commands (Alt,H,C)**

Gives help on all of Astronomy Lab's commands.

## **Help Using Help (Alt,H,U)**

Gives information about getting on-line help with Astronomy Lab.

## **Help About (Alt,H,A)**

Displays a dialog box that tells you which version of Astronomy Lab you are using.

## **Select Font**

Allows you to select the font for printing reports.

### **Dialog Box:**

#### ***Font***

List of all fonts which can be used for printing reports. Select a font from this list.

#### ***OK***

Quits the dialog box. The selected font will be used when the next report is printed.

#### ***Cancel***

Quits the dialog box without changing the font.

## **Planets**

### **Dialog Box:**

#### ***Year***

Year for which the report or graph will be generated.

#### ***Start Month, Stop Month***

Range of months for which the report or graph will be generated. The Stop Month cannot be less than the Start Month. The Start Month and Stop Month may or may not appear in the dialog box.

#### ***Planets***

Allows you to select the planets that will appear in the report or graph. Select at least one planet.

#### ***From Earth***

Select if you're interested in the distance from the planets to the sun. May or may not appear in the dialog box.

#### ***From Sun***

Select if you're interested in the distance from the planets to the earth. May or may not appear in the dialog box.

#### ***OK***

Quits the dialog box and generates the report or graph.

#### ***Cancel***

Quits the dialog box. The report or graph is not generated.

**Year**

Allows you to specify the year for which a report or graph will be generated.

**Dialog Box:*****Year***

Year for which the report or graph will be generated.

***OK***

Quits the dialog box and generates the report or graph.

***Cancel***

Quits the dialog box. The report or graph is not generated.

## **Year and Month**

Allows you to specify the year and month for which a report or graph will be generated.

### **Dialog Box:**

#### ***Year, Month***

Year and month for which the report or graph will be generated.

#### ***OK***

Quits the dialog box and generates the report or graph.

#### ***Cancel***

Quits the dialog box. The report or graph is not generated.

## **Year and Range of Months**

Allows you to specify the year and a range of months for which a report or graph will be generated.

### **Dialog Box:**

***Year,***  
***Start Month,***  
***Stop Month***

Year and range of months for which the report or graph will be generated. The Stop Month cannot be less than the Start Month.

### ***OK***

Quits the dialog box and generates the report or graph.

### ***Cancel***

Quits the dialog box. The report or graph is not generated.

## **Year Range**

Allows you to specify a range of years for which a report or graph will be generated.

### **Dialog Box:**

#### ***Start Year, Stop Year***

Range of years for which the report or graph will be generated. The Stop Year cannot be less than the Start Year.

#### ***OK***

Quits the dialog box and generates the report or graph.

#### ***Cancel***

Quits the dialog box. The report or graph is not generated.

