How to Create Your Own Guided Tour

When a Guided Tour is selected, Autostar slews your telescope to a predetermined list of objects and displays information about each object, such as type of object, constellation location, R.A. and Dec coordinates, and so forth. Autostar contains a few Guided Tours which are programmed at the factory. But it is also possible for an observer to create a custom Guided Tour.

A tour is basically an ASCII text file that contains a list of directions and descriptions. Each line of a tour is either a comment line, a command line, or a description.

What you will need:

*   A PC with text editor or word processing software installed (the tour must be saved as a "text only" or as a "MS-DOS text" file).

*   The Meade #505 Cable Connector Kit to download tour information to the Autostar handbox.

Tour Modes

The objects chosen for a tour list are selected from Autostar's database or by entering the object's RA and Dec coordinates. The tour is presented in one of two modes:

Automatic Mode: The title of an object appears on first line and descriptive text scrolls on line 2.

Interactive Mode: Tour name appears on the first line of the Autostar display and the name of the object displays on line 2. To display descriptive text in this mode, the user must press ENTER.

Comment Line

Information in the Tour program that is not displayed, such as authorship, revision history, copyrights, etc. All comments begin with a "/" character in column 1 of the line. For example:

> / Extreme Objects
> / (c) 2000 Meade Instruments Corporation

Command Line

This line contains programming commands, including: RA and DEC coordinates, a title string, a description string, and a keyword.

RA: Enter the Right Ascension of an object in the following format: HH:MM:SS. *Eg.,* 18:51:05

Dec: Enter the Declination of an object in the following format: DDdMMmSSs. *Eg.,* – 06d16m00s

Title String: Text within a title string is displayed as the title of the object. A title string can contain up to 16 characters and must be surrounded by quotation marks. For example. "M64" or "My Favorite Star."

In Interactive Mode, the title string appears on line 2 until it is selected with the ENTER key.
In Automatic Mode, or after Interactive Mode selection, the title string appears on line 1 while the description scrolls across line 2.

Keywords: Action to be performed during a tour. Autostar recognizes the following keywords:

TITLE	TEXT	USER	NGC
IC	SAO	MESSIER	CALDWELL
PLANET	MOON	SATELLITE	ASTEROID
COMET	LUNAR ECLIPSE	METEOR SHOWER	DEEP SKY
CONSTELLATION	STAR	LANDMARK	DEFINE
PICK ONE/PICK END	AUTO SLEW ON/OFF	#END	

Description String: Description of an object. Must be surrounded by quotation marks. If the description is longer than one line, each line must end with a quotation mark and a hard return. Begin the next description line with a quotation mark.

If quotation marks are to be displayed in the on-screen description, use two quote marks at the beginning and end of the desired phrase. For example: "The Orion Nebula is considered ""awesome"" by many who view it."

Writing a Tour
Using the list of commands listed above, a custom tour can be created. Placing the word AUTO SELECT before any of the command lines activates Automatic Mode and, when selected, Autostar automatically searches and finds the designated object.

The following is a list of command lines, complete with keywords and necessary strings:

TITLE
Title must be the first keyword in your tour after any comment lines and must be 15 characters or less. Autostar displays this title when "Guided Tour" is selected from the menus.

For example: TITLE "A Star's Life"

TEXT "title string" "description string"
This command allows you to display a text title and description.

USER ra dec "title string" "description string"
This command line allows you to access a specific object with your own description. Enter USER, then the RA and DEC of a desired object, and its title and description. Use the format described in the Command Line section.

The following commands specify objects that are already in the Autostar database. If these commands follow the command AUTO SELECT, the object's title displays on line 1 and its description scrolls across line 2.

Do not add a description string after the following command lines; these commands access objects with existing description in the Autostar database.

NGC xxxx
Enter NGC followed by the desired New General Catalog number and Autostar provides the user with a description of the object from its database. For example: NGC 4256

IC xxxx
Enter IC followed by the desired Index Catalog number and Autostar provides the user with a description of the object from its database. For example: IC 1217

SAO xxxxxx
Enter SAO followed by the desired SAO number and Autostar provides the user with a description of the object from its database. For example: SAO 30200

Messier xxx
Enter MESSIER followed by the desired Messier number and Autostar provides the user with a description of the object from its database. For example: M 101

CALDWELL xxx
Enter CALDWELL followed by the Caldwell number and Autostar provides the user with a description of the object from its database. For example: CALDWELL 17

PLANET "name"
Enter PLANET and then the name of the desired planet in quotes. Autostar provides the user with a description of the selected planet from its database. For example: PLANET "Pluto"

MOON
This command accesses information about the Moon from the Autostar database.

SATELLITE "name"
Enter SATELLITE and then the name of the desired satellite in quotes. Autostar displays information about the satellite from its database. For example: SATELLITE: "Intl Space Stn"

ASTEROID "name"
Enter ASTEROID and then the name of the desired asteroid in quotes. Autostar displays information about the asteroid from its database. For example: ASTEROID: "Ceres"

COMET "name"
Enter COMET and then the name of the desired comet in quotes. Autostar displays information about the comet from its database. For example: COMET: "Halley"

LUNAR ECLIPSE
If LUNAR ECLIPSE is part of the tour, Autostar checks its database every time the tour is activated to see if a lunar eclipse is visible that evening. If no eclipse is visible, this option is skipped and the tour proceeds on the the next object.

METEOR SHOWER
If METEOR SHOWER is part of the tour, Autostar checks its database every time the tour is activated to see if a meteor shower is visible that evening. If no meteor shower is visible, this option is skipped and the tour proceeds on to the the next object.

DEEP SKY "name"
Enter DEEP SKY followed by the name of the desired object in quotes. For example:
DEEP SKY "Small Magellanic Cloud"

CONSTELLATION "name"
Enter CONSTELLATION followed by the name of the desired constellation in quotes. For example: CONSTELLATION "Leo Major"

STAR "name"
Enter STAR followed by the name of the desired star in quotes. For example: STAR "Vega"

LANDMARK az alt "title" "description"
Enter the azimuth (az) for the desired object in the following format: xxxdxxmxxs. For example: 123d27m00s. Then enter the altitude of the desired object in the following format: xxdxxmxxs. Then enter the title string and description string in quotes. For example:
LANDMARK 123d27m00s 57d20m20s "Landmark 1" "North corner of apartment building"

PICK ONE / PICK END
These two statements are used to surround a list of items that Autostar can choose from during a tour. Autostar begins at the top of the PICK ONE list and displays the first object from the list that is above the horizon and ignores the rest.

This statement is useful for developing tours that can be presented year round. For each object type you wish to use to illustrate in your tour, pick 10 to 12 examples spaced across the range of right ascension. Bracket them by the PICK ONE / PICK END statements. One current example displays for the user. For example:

AUTO SELECT TEXT "Globular Cluster" "Globular clusters are huge balls of stars."
"They contain 50,000 to 100,000 stars and are located on the fringes of our"
"galaxy."
PICK ONE
AUTO SELECT MESSIER 13
AUTO SELECT MESSIER 15
AUTO SELECT MESSIER 92
AUTO SELECT MESSIER 4
AUTO SELECT MESSIER 68
AUTO SELECT NGC 1234
AUTO SELECT TEXT "None Available" "I'm sorry. There are no bright globular"
"clusters visible at this time."
PICK END

AUTO SLEW ON / AUTO SLEW OFF
With AUTO SLEW ON enabled in the tour, Autostar automatically slews the telescope to objects first before displaying the text description. This feature is useful when designing tours in which observing certain objects is required. For example, an astronomy professor may require his students to observe six objects, four of which Autostar automatically slews to in a tour. The students would have to manually slew to the last two objects. He would then place AUTO SLEW ON before his first required object and AUTO SLEW OFF after the fourth object.

#END
To end a tour, type the command #END on a separate line at the very end of the tour.

Downloading Tours
Once a tour is written and stored as an ASCII file (saved either as a "text only" or "MS DOS text" file), load it into Autostar using the Autostar Update Utility on your PC. As tours are downloaded into the handbox, Autostar examines the programming. If it doesn't understand the terminology used within a tour, it flags questionable areas and displays them in a pop-up window on your computer screen. Make the necessary corrections and try to download again. See the instruction sheet with your #505 Cable Connector Kit for more information about downloading data to and interfacing with Autostar.