You can connect the STAR BOOK to a PC and register orbital elements for comets. The orbital elements for the comets can be obtained from astronomy magazines and from Internet web sites related to astronomy. After installation of the database, you can slew the telescope to the comets automatically.

It is not designed to track the comets accurately.

Requirements

- STAR BOOK controller
- Power Supply for the STAR BOOK
- PC (Computer) for data transfer (Ethernet Card on PC)
- LAN crossover cable
- Orbital elements of comets

Procedures for Comet Registrations

Connect the STAR BOOK and the PC with the LAN crossover cable.

*As for a connection of the LAN cable to the PC, please refer to the instructions for the PC.



Turn on the STAR BOOK.

Turn on the PC.

Wait for a period of one minute. The STAR BOOK and PC acquire information on networking automatically.

Press Menu to display the System Menu. Move the cursor to About STARBOOK-S and press Select to enter. Confirm and write down the IP address & Subnet mask numbers.



IP Afddress:169.254.ab (a & b are indefinite numbers) SubNet Mask: 255.255.0.0 *The IP address may differ if the STAR BOOK is connected through networks.

Inputting the Orbital Elements

Inputting the orbital elements of the comet McNaught here as an example.

Code		: 2006P1
Name		: McNaught
Local Name		: (for Japanese word)
Time of pericentre passa	age (T)	: 2007.1.12.7969
Argument of pericentre	(Pen.)	: 155.9755 °
Minimum distance from pericentre	(Q)	: 0.170729 AU
Inclination	(Inc.)	: 77.8349 °
Longitude of the	(Node)	: 267.4147 °
Ascending node		
Eccentricity	(e)	: 1.000022
Epoch = 2007.1.20.0		

Open Internet Explorer. Substitute the Internet Explorer's address bar with the IP address of the STAR BOOK. (e.g. http://254.1.1) Now the screen below is displayed.

STAR BOOK-S - Microsoft Internet Explorer		
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Copyright (c) 2003-2007 Vizen Co., Ltd./p>		
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2	-		15	-						
6	-		16	-						
2			17							
8	-		18	-						
2	-		12	-						
10	-		20	-						
Home										2
🙆 Done								۲	Internet	

As you click on the "Table of the registered comets", the screen changes to a registration form for inputting orbital elements.

*If the STARBOOK-S screen is not in <u>SCOPE MODE</u> or <u>CHART MODE</u>, the message below is displayed. Change to the correct screen and re-enter the IP address.



On PC screen

In the registration form for the orbital elements as displayed in (6) of "Procedures to comet registration", click on the number on or over 11 to go into the orbital elements input screen as shown below.

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gdress 💰 Littp:	//169.254.1.1/comet.html?number=11	N		💌 🔁 Go	Links *	Norton AntiMinus	8 -
STAR B	OOK-S version 1.2	build 32					^
No1-10:Down	load Data, No11-20:User Def	ined Data					
No	11	Change Number]				
Designation	2006 P1						
Comet Name	McNaught						
Local Name	McNaughtComet						
т	2007 y 1 y 12.7969						
Peri.	155.975753						
q	0.170729						
Inc.	77.835183						
Node.	267						
e							
Update Dat	0						
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Table of the re	gistered comets.						
0 freeze			1	N N IS		alamat	×

Input all the parameters of the orbital elements.

Click on Update Data by the left click after you input all the parameters of the orbital elements. Now the comet can be displayed on the screen of the STAR BOOK.

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No.	Designation	Comet Name	No.	Designation	Comet Name							
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2	-		17	-								
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	-		20	-								

Using a Downloadable File

With the installation of a file for orbital elements which can be obtained from Vixen's web site, you can easily enter the comet orbital elements into the SAR BOOK.

As you click on the "Table of the registered comets" by the left click, the screen changes to a registration form for inputting orbital elements.

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file.		
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2006 P1 McNaught		
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Click on the Browse button by the left click and designate the file previously downloaded.



In the screen where the file is designated in (8-B) above, clicking on the file will advance to the screen below. Click on Submit Query by the left click to transfer.



When you delete the input data, choose the number of orbital elements you wish to erase and click on the \overline{OK} button.



*If your download is unsuccessful, follow the directions on change settings on your PC.

You can delete all data of the orbital element at a time in the initial setting screen just after you turn on the SAR BOOK. Turning on the STAR BOOK and choose Delete all comet data with the $\square \cdot \square$ keys and press Select to enter. The dialog box on the right will appear on the screen. Choose YES with the $\square \cdot \square$ keys and press Select to delete.

SCOPE MODE	2007/07/09 20:03:22	SCOPE MODE	2007/07/09 20:04:08
Configuration		CoDelete all orbital e	lements of comet
OK Local Time Setting Location Polar Axis Light Brightn 플룹산Language Save Setting Delete all compt data About STAR BOOK		DK data Lod Po Ei Sav De Abo Yes No	
Cont.+ Bright- Bright+ Cont			← → → (Select)

Automatic Slewing to Comets

With the installation of the comet orbital elements, you can display the comet on the screen of the STAR BOOK and slew to the comet automatically. You can set the comets so as to show or to hide them on the star chart.



Appointing the Comet on the Star Chart

Complete the alignment of the telescope so that automatic slewing is ready to start. *Please refer to the instruction manuals for SX/SXD mount to complete the alignment.

Focus the telescope on a fixed star with the low magnification eyepiece.

In CHART MODE, center the comet on the crosshairs with the \uparrow · \downarrow

 $\leftarrow \cdot \rightarrow \text{keys.(*1)(*2)}$

As you press the GOTO key, the telescope moves to the target comet automatically in order to bring it in the field of view of the telescope.(*3)



Appointing the Comet using the Object Menu

In CHART MODE, press Object to display the Object Menu. On scrolling down the list of celestial objects, you will find Comet is newly included in the bottom of the list



Choose <u>Comet</u> and press <u>Select</u> to advance to the Comet Menu screen. Select the comet you wish to observe with the $\uparrow \cdot \downarrow$ $\leftarrow \cdot \rightarrow$ keys. As you press <u>Select</u> to enter, the screen <u>below</u> is displayed for the confirmation. Choose OK and press <u>Select</u> to enter. The target comet is now at

the center of the star chart.



In the Comet Menu screen, choose the comets you wish to display on the star chart. Move the cursor to the comets and turn the mark to black with the $1 \cdot \downarrow$ keys to display. Save the setting in order for the current settings to apply the next time the STAR BOOK is used.

CHART	110DE	2007/01/05 16:34:33	CHART MODE	2007/01/05 16:35:29
CHART		SCOPE RA 19h 1.6m	$ \cdot \rangle = \langle \cdot \rangle$	SCOPE RA 19h 1.6m
· .		Dec -7° 37' Az 73° 23'	Comet Show	🗆:Hide
	Object Menu	Alt 9° 30′	Return 2006 P1 McNaught	
	Return	ab 1.6m		
· · · .	NGC/IC Sup Moon Planet	-7° 37'		2
	Star Constellation	9° 30'		<u> </u>
1.1	Comet	nment oint(s)		
5		HOME	Show	
MT		Select		Gelect

(*1) The comet will not appear on the screen if the "Hide" is marked with black in the dialog box of the on the Comet screen.

(*2) The blue line from the comet shows its ion tail and the white line shows its dust tail. The length and direction of the both tails are based on forecasts. It may differ from the actual view of the comet.

(*3) There are uncertainties in the orbital elements of comets and the comets may reveal unexpected motion. It may fail to bring the target comet at the center of the field of view of your telescope.