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## 2 Introduction

This "manual" explains in detail

**how to connect a notebook to a Telescope using a GC BT Scope1 Adapter.**

There are two procedures: One for the initial set-up and Bluetooth pairing and another one for the day-to-day business.

Unfortunately my notebook has German as mother tongue (as myself). Therefore I copied all dialog boxes into this manual, hoping the buttons are in the same place in the English environment. In case my translations are not correct, please let me know ([mailto:hendrik.woelper@web.de?subject=Correction for GC BT Scope Manual](mailto:hendrik.woelper@web.de?subject=Correction%20for%20GC%20BT%20Scope%20Manual)).

## 3 System Requirements

The listed requirements define the system, on which this instruction was recorded and tested but is by no means limited to this.

### 3.1 Telescope

Meade LX90 with Autostar 497 Firmware 43gg

### 3.2 Notebook and Operating system

Dell Vostro 1510 running **Windows XP** Version 5.1.2600 Service Pack 3 Build 2600

The default Bluetooth set-up software is "Bluetooth Stack for Windows by Toshiba" version v4.31.02.6(D)

Another setup was installed 2019 on a 15" HP Notebook running **Windows 10**. The original Windows Bluetooth Stack is not able to cooperate with the telescope adapter, most probably because it does not keep the connection open and alive, when not data is sent.

The work-around is, to install the Toshiba Bluetooth Stack. Normally Windows 10 refuses to install the Toshiba Bluetooth Stack, but with some "brutal force" according to [Toshiba Stack Installation - WiinUPro](http://www.wiinupro.com/tutorials/toshiba-stack) = <http://www.wiinupro.com/tutorials/toshiba-stack> I succeeded to install "Bluetooth Stack for Windows by Toshiba" version v9.10.32(T) ☺ Thereafter below instructions worked strait forward.



### 3.3 GC BT Scope1 adapter

For details and source see Gene's page

[http://home.comcast.net/~lynol1000/bt\\_scope/bt\\_scope1.htm](http://home.comcast.net/~lynol1000/bt_scope/bt_scope1.htm)


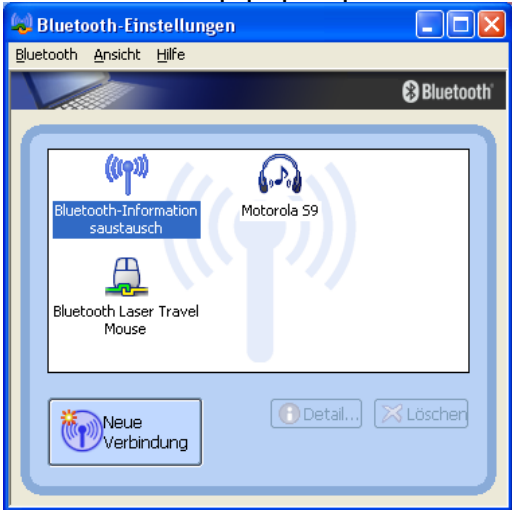

Inside the GC BT Scope1 is a red LED to indicate the status. You will see it, when you remove the cover or look through the hole of the D-Sub port.

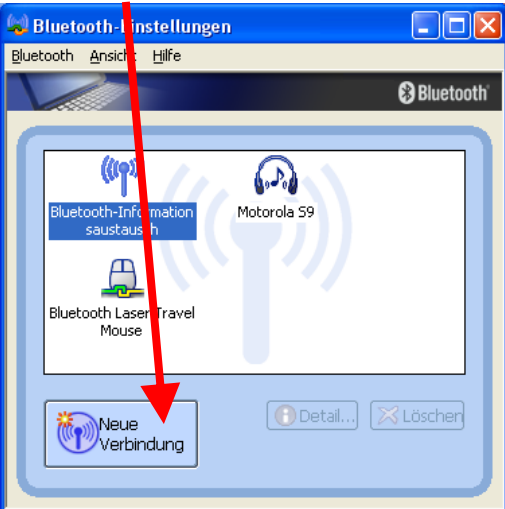

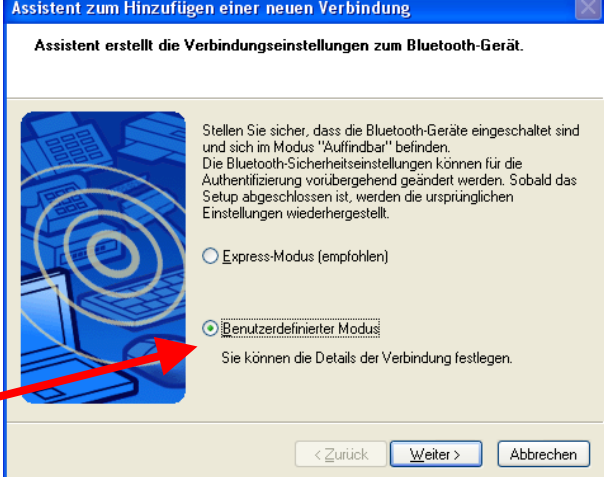

This LED knows 3 flashing modes and 1 steady mode:

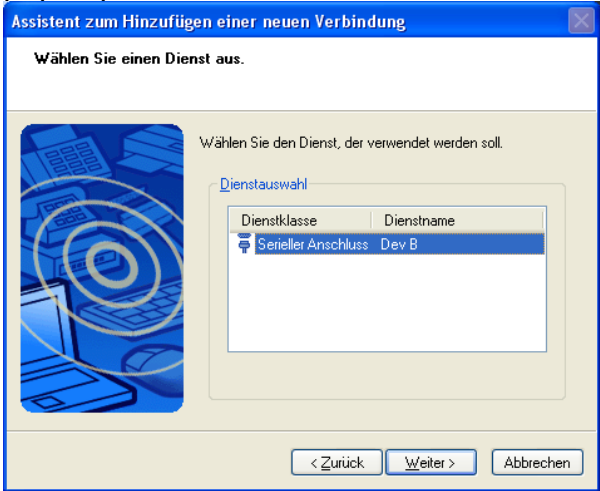
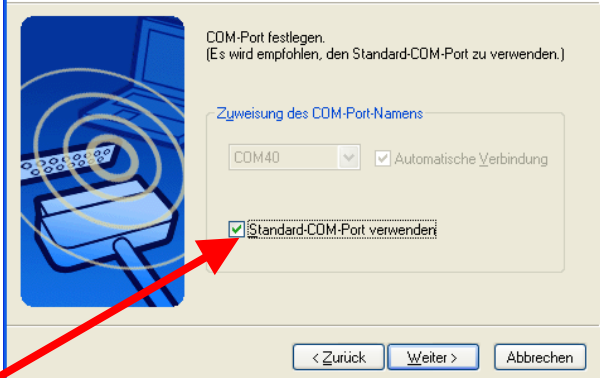

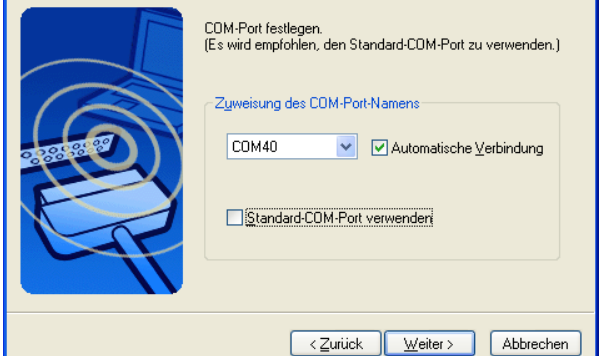
Flash medium	available for pairing to new host
Flash slow	not 'connected', cannot pair to a new host
Flash fast	Toshiba stack 'connected' with no application
Steady	connected to application

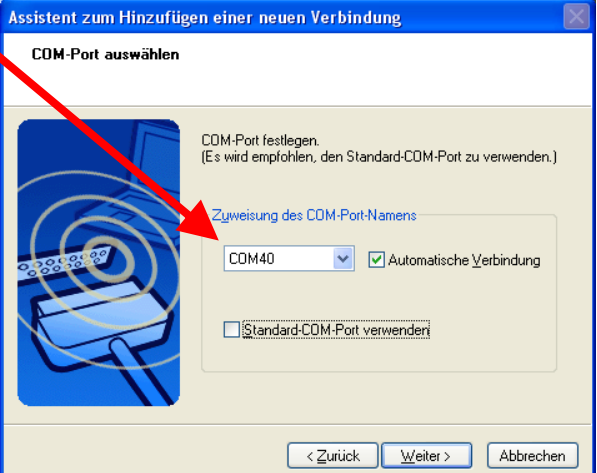
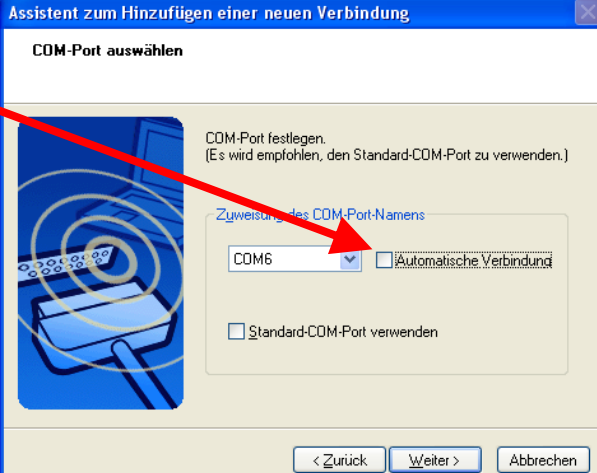
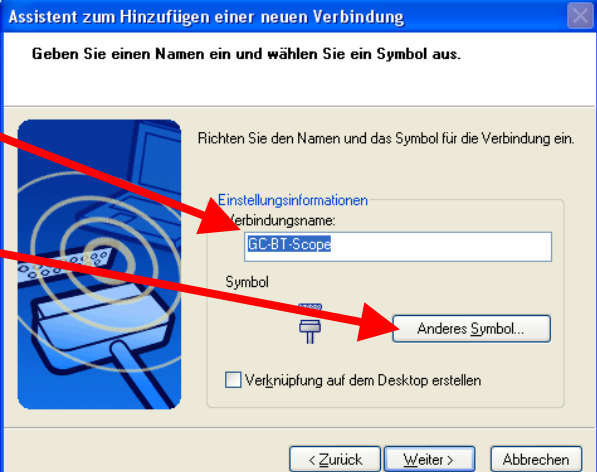
## 4 Initial Set-up Step-by-Step

This procedure must be conducted only once or whenever you "pair" the GC BT Scope1 with a new notebook/PC.



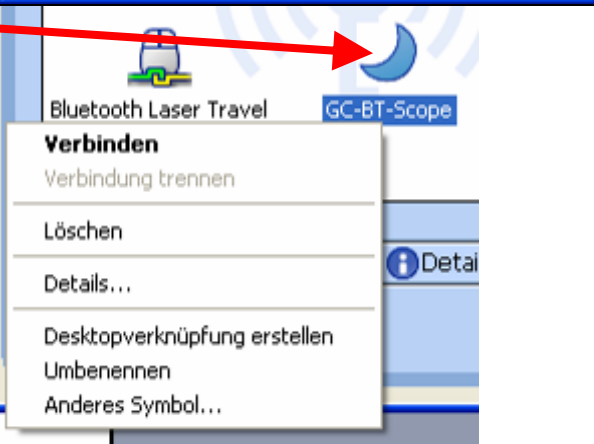
Step	to-do	result
1.	Turn notebook on	Windows XP is started
2.	Double click on the Bluetooth icon in the taskbar 	Bluetooth set-up pops up 
3.	Power on your telescope	Red LED at the telescope glows
4.	If you want to use your telescope right after this procedure, enter date, time, ... into Autostar either now or before step 22	
5.	Power on your GC BT Scope1  505 cable NOT connected!	Red LED inside GC BT Scope1 flashes

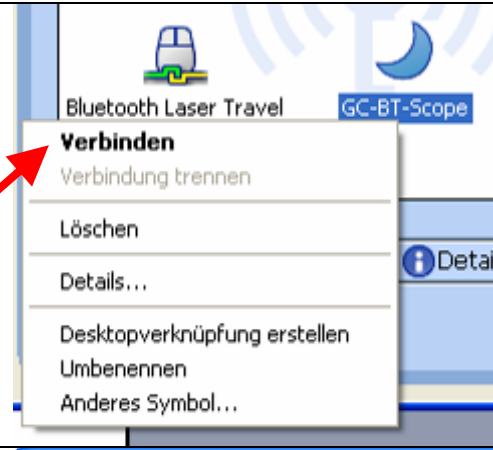
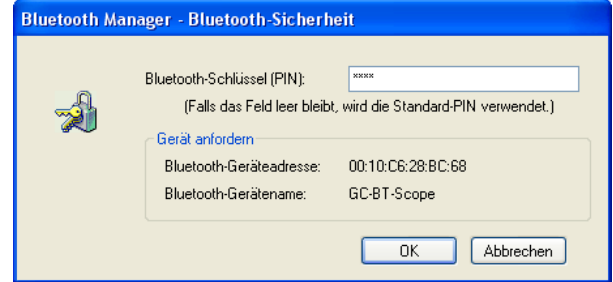

6.	<p>Click in Bluetooth set-up on "new connection"</p> 	<p>New box pops up</p> 
		
7.	<p>Select "user defined mode" and click continue It is not recommended but we know what we are doing 😊</p>	<p>"please wait ..."</p> 
8.	<p>In case you see more than one device, click GC-BT-Scope</p>	<p>GC-BT-Scope is highlighted</p>

9.	Click continue	<p>Another "please wait ...." with some explanation, ignore and wait until this box pops up</p>  <p>There should be only on line highlighted "seriell device"</p>
10.	Click continue	
11.	Deselect "use standard COM port"	<p>"It is recommended to use standard settings ..."</p> 
12.	Ignore an cklick OK We still know what we are doing 😊	

13.	Select a COM port number. E.g. for Astroplanner it must be 9 or lower. I used COM 6	
14.	<b>Most important:</b> Deselect "auto connect" <sup>1</sup>	
15.	Click continue twice  You may change the name or symbol, if you feel so  (I selected the moon)  and add a desktop icon (I did)	

<sup>1</sup> According to the manual of the Bluetooth Set-up utility this option is for the use of fax or so on a COM port but it turns off the BT connection whenever your program does not talk ☹

16.	Click continue	
17.	Click "complete" or "finish" however it is called in English	
18.	Right click on the GC-BT-Scope	

		
19.	Click connect	
20.	Enter the PIN "1234" and click OK	 <p>The green and yellow "hands" hold tight = connection established</p> <p>Red LED inside GC BT Scope1 flashes fast <sup>2</sup></p>
21.	Plug in the 505 cable between the Autostar and the GC BT Scope1	
22.	Start your telescope software Tell it which COM port to use Tell it to connect, if necessary	<p>Red LED inside GC BT Scope1 shines solid</p> <p>You are done with the initial set-up ☺</p>

## 5 Connect and disconnect

These steps have to be done every time you use your telescope - PC connection.

Step	to-do	result
1.	Turn notebook on	Windows XP is started
2.	Power on your telescope	Red LED at the telescope glows
3.	Enter date, time, ... into Autostar Align if necessary	
4.	Power on your GC BT Scope1	Red LED inside GC BT Scope1 flashes

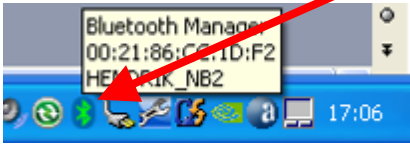

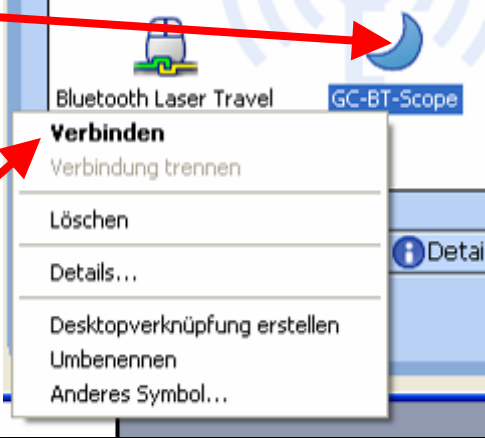
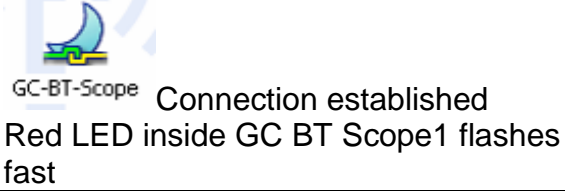
<sup>2</sup> The LED will always flash fast for roughly the first 45 seconds.

After that it will flash slow until 'connected' -except- If this is a new computer trying to talk (not last one connected), if the led starts flashing slowly and the unit has not been paired you will not be able to pair or connect.

When connected it will glow steady.





5.	Plug in the 505 cable between the Autostar and the GC BT Scope1 if not already/always connected	
6.	Double click on the Bluetooth icon in the taskbar 	Bluetooth set-up pops up 
7.	Right click on the GC-BT-Scope	
8.	Click connect	
9.	Start your telescope software, tell it to connect if necessary	Red LED inside GC BT Scope1 shines solid <sup>3</sup>
10.	Play, stargaze, ...	Fun?
11.	Power off telescope and GC T Scope1	The Bluetooth utility will "disconnect" the GC-BT-Scope automatically.

<sup>3</sup> For step 4.14 and 5.9, if you de-select AutoConnect, after you pair/connect does not the led glow steady? Using BlueSoleil, I have a choice of pressing 'connect' which does the actual SPP connection and holds it connected no matter if a PC program is using it or not. With Toshiba, what happens if you use an program and then exit the program, does led start flashing again or glow steady? If so then it takes the first request to peg up the connection, if not then interesting :-)



## 6 Acknowledgements

Many thanks to Gene Nolan for making and selling the useful GC BT Scope and for his prompt and extensive support, when I reported problems during set-up.

## 7 Copyright



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