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## Merlin mount

### Where can I find the "Main and Useful topics" in the forum?

The "Main and useful topics" in the forum can be found [here](#) !

## Other Merlin brand and model names ?

The Merlin astronomical mount is sold under different names and brands:

- Sky-Watcher Multifunction
- Merlin Multifunction
- Orion TeleTrak
- Acuter Multifunction

Some other mounts use similiar mechanical components and the same or similiar communication protocols:

- Sky-Watcher AutoTrack
- Merlin Supa Track
- Orion Supa Track

However these mounts are not suited to panoramic photography or very high resolution because of the inability to properly position the camera and its target for a shooting in perfect coincidence. ("entry pupil" and "nodal point")

But the electronic interface and steering logic reviewed below are perfectly usable with these models.

## Two models of Merlin mount exist, which is the best for use with Papywizard ?

VERY IMPORTANT INFORMATION ! (NEWS OF APRIL 2010 !)

There are two versions of the Merlin mount - which we call the 'Non-GoTo' and the 'GoTo' versions.

The Non-GoTo version was the first to be produced and is the version we recommend for use with Papywizard.

The GoTo model was introduced later. It is more expensive, and when first introduced it lacked the camera control port found on the Non-GoTo model. To use this original variant of the GoTo mount with Papywizard you have to use of a special version of the Bluetooth module from Teleskop-Austria which provides an independent camera control port.

Now it seems that Skywatcher, who makes all these mounts, has had a change of plan and from now on the GoTo version of the mount will also have the built-in camera control port.

The only differences now between the Non-GoTo and GoTo versions of the mount are that the GoTo version has the more advanced GoTo hand controller, and lacks the 2.5mm-2.5mm camera control cable (which is supplied with the Non-GoTo version). So with the latest variant of the GoTo mount you no longer need to have the special Bluetooth module from Teleskop-Austria for use with Papywizard.

To summarise:

The less expensive Non-GoTo version is all you need for use with Papywizard as a robotic panoramic head.

## PapyMerlin\_FAQ

IF YOU WANT ORDER A MOUNT WITH THE GOTO FUNCTIONALITIES, PLEASE CONTACT THE SUPPLIER TO ASK WHETHER THE GOTO MOUNTS IN STOCK ARE THE LATEST VARIANT WITH THE "BUILD-IN" CAMERA CONTROL PORT!

THE NEXT INFORMATION IS "OUTDATED" !!!

The most recommended model for PapyMerlin is the "Non-Goto" version (Known as Orion® TeleTrack™ Altazimuth Tracking Mount #9441 or as Skywatcher Reference : S21300):



- This one has a "Camera remote control port"
- Is the less expensive of the 2 models

The other model, the "GoTo" version (Known as Orion® TeleTrack AZ-G? Altazimuth GoTo Mount #9481):



- Is much more expensive.
- Is more dedicated to the Astronomers.
- And ,most important, has no "Camera remote control port" !

Except for the above differences, the 2 models are "strictly identical", mechanically, electrically and for the "inbuild" software in the 2 processors.

If you are also "Astronomy amateur" AND "Panorama/Gigapixel photographer", you can find the "Go-To" model interesting but you should know that this one is far more expensive for buying and for interfacing with your PC/Mac/Nokia platform ...

## Where to buy a Merlin mount ?

The official distributors of Skywatcher:

Two models of Merlin mount exist, which is the best for use with Papywizard ?

- Sky-Watcher Distributors

Some dealers (for information only):

- Sky-Watcher dealers in Europe
- Sky-Watcher pack on pre-order on KOLOR shop, FR
- Pack Sky-Watcher en précommande sur SkiVR.com , FR
- L' Orion chez Optique Unterlinden, FR
- La Sky-Watcher Multifonction Non Goto à la Maison-Astronomie.com
- La Sky-Watcher Multifonction Non Goto sur Galileo.fr
  - ◆ NON GOTO and GOTO versions both with "build-in" camera remote release !!!
- La Sky-Watcher Multifonction Non Goto sur Galileo.be
  - ◆ NON GOTO and GOTO versions both with "build-in" camera remote release !!!
- La Sky-Watcher Multifonction Non Goto sur Galileo Suisse/Schweiz
  - ◆ NON GOTO and GOTO versions both with "build-in" camera remote release !!!
- Merlin Non Goto on apm-telescopes.de
- Merlin Goto on apm-telescopes.de
  - ◆ NON GOTO and GOTO versions both with "build-in" camera remote release !!!
- Skywatcher/Merlin AZ Synscan GoTo on Astroshop.de,DE
- Sky-Watcher Multifunction on Teleskop-Austria.at, Austria
- Merlin - Opticalvision, UK
- Acuter Merlin at Camera Center, UK
- Acuter Merlin on Sherwoods-photo.com, UK
- Acuter Merlin on Telescopeplanet.co.uk, UK
- Acuter Merlin on Rother Valley Optics, UK
- Acuter Merlin on OpticStar, UK and in all European countries
  - ◆ NON GOTO and GOTO versions both with "build-in" camera remote release !!!
- Acuter Merlin on Firstlightoptics.com, UK
- Acuter "all-in-one" on Astronom.bg, Bulgaria
- MFF monta? a za teleskop Skywatcher Non Goto at www.lyra-optics.si, Slovenia

(\*Sky-Watcher Multifunction on Skywatcherusa.com, USA)

- Sky-Watcher Multifunction on OptCorp.com, USA
- Sky-Watcher Multifunction on OpticsPlanets.com, USA
- Sky-Watcher Multifunction on GreatRedSpot.com, USA

(\*Sky-Watcher Multifunction on Astromechanics, Canada)

- Sky-Watcher Multifunction on Staroptics.com , Australia
- Merlin Multifunction on Kirkscameras.com, Australia

(\*Sky-Watcher Multifunction on NZ Telescopes, New-Zealand)

## Software

## Where can I download the Papywizard software ?

You can download the Papywizard software from the Papywizard web site - [www.papywizard.org](http://www.papywizard.org)

Where you will also find :

- [Documentation](#)
- [Download](#)

and other interesting stuff !

The Papywizard software can be run in "simulation mode" when not connected to a Merlin/Orion mount.

This allows the potential user to discover all the features of the software before buying a Merlin mount!

## What is the price of Papywizard ?

Papywizard is not a commercial project.

All Papywizard files and documents are released under [CeCILL](#), a French free license, based on and compatible with GPL.

You can read the complete text of the license [here](#).

Papywizard is free!

The only thing we ask is that users consider becoming active members of the [Autopano Forum community](#) and to share with other users some information about where they live, and their use of Papywizard - how, for what sort of panos, on which platform, with which cameras and lenses, and any customisations they have made to their Merlin mount.

Have a look on our database of "known users"

- [PapyMerlin users feedback](#)

## What are the platforms supported by Papywizard ?

Papywizard is entirely written in Python and, although developed under Linux it runs successfully on :

- PC/Linux
- Nokia/Maemo (N800 & N810, on N770 due the lack of PyQT only Papywizard version 1.6.1 and older)
- PC/Windows (Windows 2000, Windows XP, Windows Vista and Windows 7)
- Mac OSX 10.5 or later.

## How do I install Papywizard Version 1.6 on the Nokia 770 Internet Tablet?

[Installing Papywizard on Nokia 770](#)

## How do I install Papywizard Version 2.xx on the Nokia N800 and N810 Internet Tablets?

[This page describes all the steps needed to install Papywizard v2 on a Nokia N800 or N810 Internet Tablet.](#)

## How do I install Papywizard all versions on the Windows 2000, XP, Vista and 7 platforms ?

No major problem, here. Just click on the installer, and follow the instructions.

Hint: IF your windows username contains special characters like ö,ä,ü then try to use not these standard directories during installation. Papywizard has problems to handle these special characters (not all versions are affected. This is/was solved in some versions, but coming back in newer versions).

## How do I install Papywizard all versions on Linux/Unix platforms ?

As most distributions come with Python and all needed modules (just install them through your application manager), there is no really interest in building a binary package including the Python interpreter.

Nevertheless, from Papywizard version 2.1.17, packages exists for Debian/Ubuntu package (python2.5) and Debian/Ubuntu package (python2.6)

You can also just install Papywizard with distutils tools:

```
$ python setup.py install --prefix=/usr/local
```

## How do I install Papywizard all versions on the Mac OSX platform ?

We are looking for a volunteer to write the manual ! Is that you ?

## Does a "Papywizard" General Manual exist ?

Yes of course, here:

[User Guide Papywizard Version 2.x](#)

[User Guide Papywizard Development Version](#)

## Existe-t'il un manuel de Papywizard en français ?

Bien entendu, vous le trouverz ci-après :

[Guide Utilisateur Version en cours de développement](#)

## Communication interfaces

### Wireless interfaces

#### Bluetooth interfaces

##### Do "plug & play" Bluetooth interfaces exist for the Merlin mount ?

Yes, there are two "plug & play" Bluetooth-TTL interfaces available for the Merlin mount for use with Papywizard. These Bluetooth-TLL interface modules replace the standard hand controller and draw the power they need from the Merlin head via the TTL interface connector.

- Teleskop-Austria, an Austrian supplier, offers a fully assembled "plug & play" Bluetooth-TTL interface kit for the Merlin/Orion head, this has been designed by "Ursa Minor" a small Hungarian company :

- [The Teleskop-Austria TTL-Bluetooth interface device](#)
- [Ursa Minor, astronomical software and accessories](#)

- The Deltawave "PapyMerlin" Bluetooth module is another interface.

The Deltawave "PapyMerlin" Bluetooth-TTL module has been designed specially for the Merlin + Papywizard project.

Based on the original design by Frédéric Mantegazza (developer of Papywizard, AKA "FMA38" on the Autopano forum), built by the small German company "Deltawave Solutions" to specifications developed by Claude Vanhemmens (AKA "claudev" on the Autopano forum) and distributed by Claude after configuration. Supplied in a box and equipped with a cable/connector it is a fully assembled, compact, cost effective "plug & play" Bluetooth-TTL interface for the Merlin mount for use with Papywizard.

- [Dedicated PapyMerlin French website](#)

### **How do I configure a Bluetooth interface under Windows ?**

An active member of the Forum "Merlin, Orion and Papywizard", "emess", has produced a "guide to connect bluetooth-adapter to a Windows XP platform and configure PW". The guide is both German and English languages and describe the "serial" connection way:

- ["Virtual serial connection" way under Windows XP \(PDF document\)](#)
- ["Virtual serial connection" way under Windows XP 'Online document\)](#)

### **How do I configure a Bluetooth interface under Mac OSX ?**

An active member of the Forum "Merlin, Orion and Papywizard", "MATZE", has produced a "guide to connect bluetooth-adapter to MacBook and configure PW" :

- ["Virtual serial connection" way under Mac OS \(Post in forum\)](#)

## **Wired interfaces (To be completed)**

# **Mounting the camera on the Merlin**

## **How should I mount my camera on the Merlin mount ?**

You can mount your camera on the Merlin mount in two ways:

- In portrait orientation for spherical (180x360) or cylindrical panoramas.
- In landscape orientation for shooting gigapixel panos with long focal length lenses, or for Timelapse.

## **How do I mount my camera in portrait orientation on the Merlin mount ?**

There are several ways to mount your camera in portrait orientation on the Merlin mount:

- You can dismantle the "original Merlin" L-mount and use the dismantled parts with the "original Merlin" crown, as described here:

- [Modification de l'équerre de fixation](#)

- You can buy a compatible astro-dovetail rail with the "Merlin original" crown (the compatible dovetail is a "Vixen type dovetail", this one is the most popular type in astronomy!).

Several lengths are available, but to permit full 360 vertical rotation the rail has to be 15-17cm maximum !  
Longer rails can be used where you don't need full 360 vertical rotation.

- You can modify the original crown or replace it with a new one. The "optimal" dimensions of a new crown are here:

- "Optimal" dimensions for a new crown

You will need to modify or replace the crown if you wish to mount your camera/lens at the NPP (No Parallax Point) and the "A dimension" of your camera is greater than 40 mm.

For the explanation of the "A dimension", have a look here :

- "A dimension"

If you are using Papywizard version 2.1.17 or later the camera can be mounted with the vertical (pitch) arm to the left or to the right of the camera; set the Pitch arm side parameter accordingly in Papywizard.

## **How do I know if my camera needs a "Merlin" modification in order to align the NPP ?**

Here is the answer of your question:

- Choix de la méthode d'adaptation suivant le modèle d'appareil

## **How do I mount my camera in landscape orientation on the Merlin mount ?**

The best way to mount your camera in landscape orientation is to use the "original" L-bracket.

If you are using Papywizard version 2.1.17 or later the camera can be mounted with the vertical (pitch) arm to the left or to the right of the camera; set the Pitch arm side parameter accordingly in Papywizard.

## **Camera remote control**

### **How is my camera controlled by Papywizard ?**

The method by which Papywizard can control the camera shutter depends on the type of merlin head you have.

If you have the basic Non-GoTo version of the Merlin head, or the newest variant of the GoTo Merlin head (from approx. April 2010) with the camera control port, then the camera shutter is directly controlled by Papywizard via the camera control port on the Merlin head!

If you have the original variant of GoTo Merlin head (prior to approx. April 2010), which lacks the camera control port, then the camera shutter will have to be controlled by Papywizard by other means, such as the "Ursa Minor" Bluetooth module Version 2 (only), or by one of the Papywizard plug-ins for "tethered shooting" (although not all cameras are not capable of tethered shooting!)

If your DSLR or compact digital camera does not support a wired remote control but does support an IR remote control then you can probably trigger the shutter from Papywizard via the camera control port on appropriate models of the Merlin head using the appropriate model of gentLED-JUMP IR trigger device for your camera: <http://www.gentles.ltd.uk/gentled/options.htm#IRjump>

## Do I need a "cable/connector" to connect my camera to the Merlin head ?

Yes you need one:

- If you have a Canon ####D (like Canon 300D, 350D ... 550D etc), Canon G10, then the original 2.5mm-2.5mm camera control cable supplied as standard with the Non-GoTo Merlin head can be used ! Most of the Pentax camera's have use also this type of connector ...

- If you have another model of camera, or are using a GoTo Merlin head (which is not supplied with the 2.5mm-2.5mm camera control cable), then the "Hahnel solution" is the easiest and probably the cheapest plug-n-play solution you can find!

Here are more details of the "Hahnel solution" :

- The Hahnel "Universal" wired remote control system !

- If your DSLR or compact digital camera does not support a wired remote control but does support an IR remote control then you can probably trigger the shutter from Papywizard via the camera control port on appropriate models of the Merlin head using the appropriate model of gentLED-JUMP IR trigger device for your camera: <http://www.gentles.ltd.uk/gentled/options.htm#IRjump>

## How to trigger the shutter of the Nikon D40, D40X, D60, D70 and D3000 with Merlin and Papywizard ?

The lower end models of the Nikon DSLR range, the D40, D40X, D60, D70 and D3000 do not support a wired remote control, only an IR remote control.

The simplest, plug & play, solution is to use the gentLED-JUMP connected to the camera control port on the Merlin mount using a 2.5-2.5mm cable: <http://www.gentles.ltd.uk/gentled/options.htm#IRjump>

Alternatively you can modify the gentLED-SHUTTER as described [here](#)

These solutions can also be used for other models of DSLR and compact digital camera which do not support wired remote controls but which do support an IR remote control and for which a compatible version of gentLED-JUMP or gentLED-SHUTTER is available.

## **Various Software questions - *Questions diverses au sujet du software***

### ***Une feuille de style (fichier "CSS" = Cascading Style Sheet), qu'est-ce c'est et à quoi cela sert-il?***

*Une feuille de style est un fichier qui permet de modifier l'apparence (couleurs, polices, disposition...) d'un document web.*

*C'est très pratique, car cela permet de séparer le contenu (fichier xhtml ou html), de la présentation (fichier .css):*

- Feuilles de style en cascade

*Qt, la librairie utilisée pour développer Papywizard permet de faire un peu la même chose avec les widgets de l'interface graphique. Il est donc possible de modifier les couleurs etc... afin, par exemple, d'améliorer la lisibilité.*