

Congratulations on your purchase of the IOTA Occultation Video Starter Kit! We hope you will enjoy “chasing shadows” and have many successful attempts at recording various types of occultations.

This highly sensitive B+W camera is ideally suited for occultation work. Your camera is assembled and tested prior to shipment, and a strain-relief arrangement is applied to ensure that the small wires do not pull out or get damaged under normal use. The diagram below shows the camera as shipped.

<http://occultations.org/test-night-eagle-ordering-page/>



You can easily test the camera upon receipt by unscrewing the optical “stack”, reinstalling the original wide angle lens, applying power, and sending the output through a standard RCA cable to the AV input on a regular television.

The photo below shows how the parts look before assembly. (Note: the camera pictured may be a different model but the assembly will be the same).



Starting with the camera, from left to right the parts pictured are:

- Night Eagle camera
- 12mm to C-mount adapter
- Two 5mm spacers
- C-mount to 1 ¼" adapter
- 0.5X focal reducer

The OSD initial screen is activated by pressing the dongle button inward one time, which corresponds to "Enter". Then you tilt the knob up and down to navigate through the menus. The camera is shipped with its exposure parameters set to the values recommended for asteroid occultation work. A second, longer document (still under development) will explain each setting in detail. It will be sent to you as soon as it is available.

Note that at the highest gain settings you may begin to see a noisy background on the screen. This is normal and still provides the best S/N ratio. It is easily accounted for in post-processing of the video.

You can record your video in several different ways. To record to a Windows laptop or PC, download the free IOTA VideoCapture program from <http://occultations.org/observing/software/>. It comes with a manual and a separate playback application. Be sure to disable wireless, all internet connections, Windows updates, and all background applications when recording. To record to a laptop or PC you will also need a video "frame grabber" to convert the analog video signal to digital. The one we recommend is the Startech SVID2USB23, available online for about \$35, pictured below.



For many years, observers have recorded to Canon "ZR" series DV camcorders through their AV-input port. However these devices are now many years old and frequently fail at just the wrong time. Contact Ted Blank (tedblank@gmail.com) for further instructions if you wish to try this approach.

An example of a Night Eagle 2 PRO Astro Edition camera in a fully-connected configuration is shown below. Power can come from batteries or 12V "wall wart" transformers. (The camera can accept voltages from 5V to 36V, but the IOTA VTI requires 12-15V to operate.) The IOTA VTI video time inserter is available from www.videotimers.com. This compact unit adds a GPS-derived timestamp (accurate to less than a millisecond) to the bottom of each video frame. Downstream analysis programs (Limovie and Tangra) can read these timestamps directly from the video image, making extremely accurate timing of occultation events possible.

