

# WAT-910BD-TACOS System

Presented to TTSO8

Monday, 21st April 2014

By Dave Gault on behalf of T.A.C.O.S.

- Slide 1) Title Screen**
  - . No description
- Slide 2) The Australian Contributors for Occultation Science = T.A.C.O.S.**
  - . Current members are Tony Barry, Dave Gault, Dave Herald and Hristo Pavlov
- Slide 3) Introduction to the new Watec Cameras - A new level of sensitivity**
  - . Top left image of WAT-910HX
  - . Bottom left image of the Board Camera WAT-910BD
  - . Tests by Hristo
    - . showed that the HX was 1mag more sensitive than the WAT-120N
    - . showed that the BD was 1.5mag. more sensitive than the WAT-120N
- Slide 4) SPI for Remote Control: Over USB via Arduino-Nano**
  - . WAT-910-BD has a Serial Peripheral Interface Bus port (SPI) , shown in red ellipse on the left image.
  - . Arduino technology would provide the USB-SPI connectivity, and the Nano was chosen to be the microprocessor board.
- Slide 5) Designing a Case in AutoCAD – by DaveG**
  - . All components drawn to scale in AutoCAD and a General Assembly drawing was produced to ensure parts would fit.
  - . A case was designed to be manufactured in 1.2mm Stainless Steel using CNC laser profile cutting and CNC Pressbrake folding.
  - . The top deck was chosen for cable connections so that the camera would suit the limited swing-through of the Meade LX90 telescope.
- Slide 6) First Assembly**
  - . A production run of 5 Cased was produced.
  - . The fit up was good.
- Slide 7) Firmware and Control Circuit – by Tony**
  - . Firmware written in the Arduino Environment
    - . Uploaded to the Nano via USB.
  - . Circuit with the minimum of components was designed to cope with the level switching required.
  - . Photo shows the Nano and components mounted on the Motherboard.
- Slide 8) Watec 910BD Ctrl app. – by DaveH**
  - . A stand alone app to control the camera by:
    - . clicking on the Integration
    - . dragging the gain or gamma control
    - . clicking on the 'F+' button activates more controls, as well as the OSD
- Slide 9) OccuRec WAT-910 driver – by Hristo**
  - . OccuRec can control the Camera over ASCOM using the WAT-910BD Nano driver.
- Slide 10) OccuRec Camera (ect ect) Control**
  - . More info in Hristo's OccuRec presentation.
- Slide 11) And finally...**
  - . Some photos of the Camera mounted on DaveG's LX90
  - . Website address for download of components and details on Licenses