THE ISAAC NEWTON GROUP OF TELESCOPES

INSTRUMENT CHANGE CHECKLIST

(SUPPLEMENTAL)

MOUNTING THE WHT MOSAIC CAMERA AT PRIME FOCUS

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Mounting the Mosaic camera at PFIP.

PFIP can be dismantled into two assemblies : Part A, the main assembly containing the corrector and filter wheel and Part B, the camera assembly constituting the shutter plate, CCD cryostat mounting plate and the two 19" controller racks. Part A can be mounted directly to the telescope, however, part B requires some pre-assembly prior to mounting.

Part A

Part B

1) The shutter plate must be detached from the rest of PFIP by removing approximately 6 hex bolts. The shutter has some delicate mechanisms that protrude and are very vulnerable to knocks. It is only reattached to part B once part B is firmly mounted at Prime Focus.

2) The SDSU controller is mounted on the aluminium plate that straddles the two 19" racks. It is oriented with the fibre optic connectors uppermost. Once attached, make sure that there is no electrical continuity between controller and mount.

3) Once the controller is mounted and the shutter plate has been removed, part B can be attached to the rest of PFIP on the telescope. At this stage 2-3 people will be needed for the lift. There are no suitable crane lifting points.

4) The shutter plate can then be mounted onto part B. There is a red shutter test button on the plate. This should be operated a few times to ensure that the shutter opens and closes fully. On the first run, a mechanical interference was found which prevented the shutter from fully closing. Even a tiny pinhole is unacceptable.

5) There is a 19" rack unit that contains a shutter control card and a PSU for the SDSU controller. This has a number of connectors that should be cabled up prior to mounting the rack as when mounted, the cables will be inaccessible. The cabling is illustrated in diagram 1.

6) PSU/Shutter control rack

7) The autoguider CCD controller can then be mounted in the other 19" rack.

8) The Camera cryostat window should then be blown clean of dust and the camera mounted onto part **B.**

Some further cables must now be attached to the SDSU controller. These are : The bifurcated CCD cable to the cryostat, the two fibre optics, the CCD ID connector and the CCD temperature connector. All are labelled and there should be no confusion as to which cable goes where.

When attaching the bifurcated CCD cable to the camera make sure the controller is powered off and make sure you are grounded

either through a wrist-strap or by holding the metal of PFIP. Unlike the Dutch CCD controllers, where a pre-amp remained permanently connected to the cryostat, the new system requires complete disconnection of the cryostat and the consequent temporary exposure of CCD signal pins in the open connector. One must be very careful not to touch these pins and to cap the connector with a shorting plug when not in use. Once all cables are in place, the two power switches on the back of the PSU/Shutter Control rack can be switched on.

The fibre optics, one to receive commands from the Sparc, the other to send data should be connected to fibre ports 1 and 2 on the prime focus rotator connector panel. These are labelled, as are the ports on the back of the controller and in the control room.

The connections to the camera cryostat are shown in the photos below :

CCD connector and ID connector

Temperature Connector

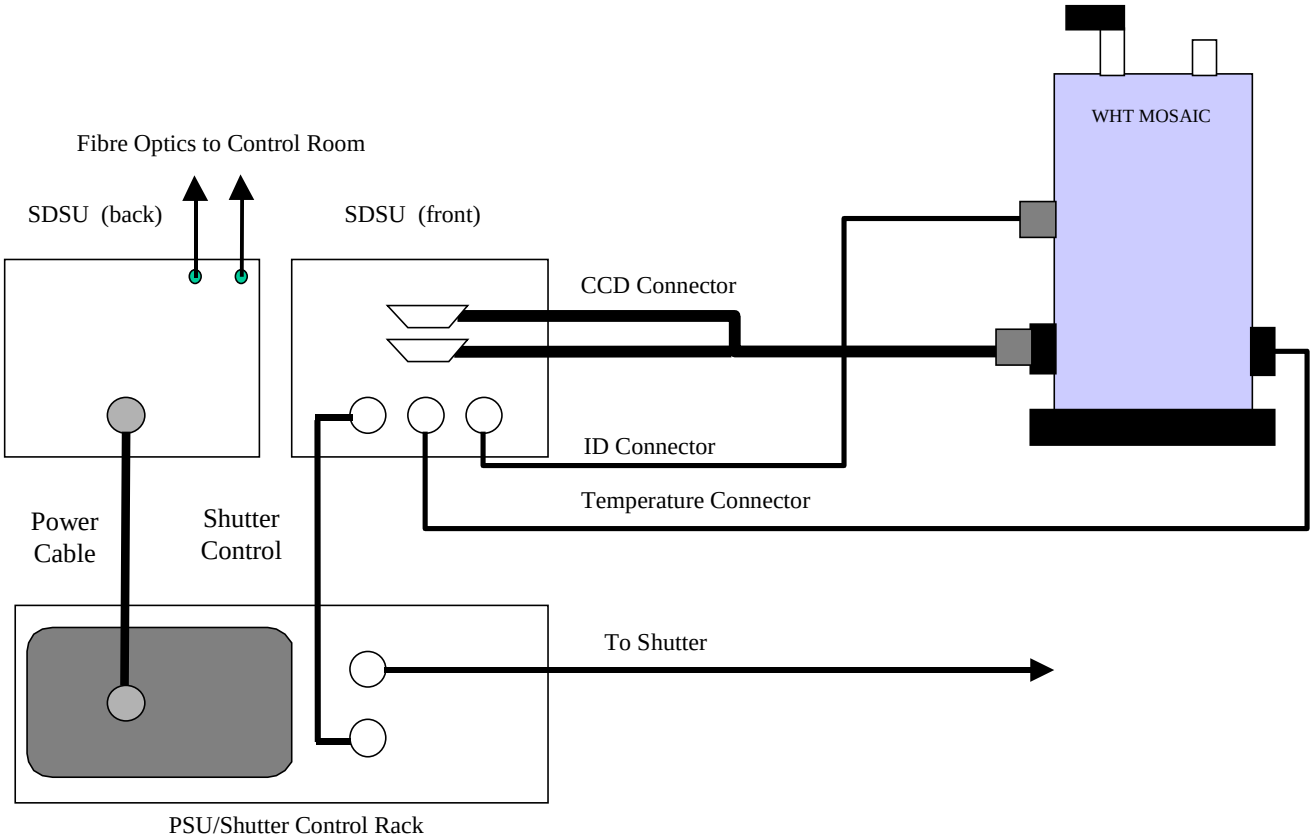

Diagram 1

9) Back in the control room, the two fibres from the SDSU controller go to the fibre optics distribution tray (labelled To/From PFIP SDSU controller) in the end blue cabinet. Make sure that the ***lacerta*** fibres are connected these two ports. The uDAS system is then run up on ***taurus***, the machine to the right of the ICL mimic screen. The username and password can be found on a label on the screen. Several windows should then appear; four orange DAS windows and a pink Central Intelligence window. If they don't, you may need to start again with a different window manager. Choose the option OpenWindows Desktop. When ready, type:

```
obssys
```

In the DAS 5 (orange) and C.I. (pink) windows and select the PFIP option from the list then type :

```
startobssys
```

in the DAS 5 window and wait for the prompt to return.

nb. The windows not in use: DAS, DAS 3 and DAS 4 can be minimised.

Once the DAS prompt has returned, enter:

```
startobssys
```

in the C.I. window. During this time more windows will start up, such as the Talker, CCD monitor, *etc.*

A bias frame can then be taken by typing:

`bias` at the SYS> prompt.

A GUI (CCD Monitor) window on Taurus will contain information on where the images are being stored. Each image pair is contained in a single FITS file. To display the image from chip one you should enter at the IRAF prompt :

```
display image[1] 1 fill+
```

To display the image from chip two :

```
display image[2] 2 fill+
```

Both images can be displayed side by side by selecting the *'tile frame'* option available from the `ximtool` control panel.

Information on the expected bias levels of the two chips can be found at :

http://vela.ing.iac.es/Engineering/detectors/ultra_2eev.htm