Installation Instructions for Polar Camera
(modified September 17, 1995)

Tripod assembly:
- as described in separate instructions;

Tripod installation:

- place the tripod on a fairly level surface with the apex of the triangle oriented approximately geographic North;

- level the tripod and rectangular frame using the supplied 2' carpenter's level, first along the N-S direction (apex - base), and then along the E-W direction (along the base of the tri-angle), by turning the wingnuts to adjust the height of each corner of the tripod;

- tighten the upper nuts at the corners of the tripod;

Control PC Installation:

- locate the PC, monitor, voltage regulator and watchdog timer as convenient;

- First connect control PC as follows:

```
mains <--- voltage ---- power bar <--- PC
           regulator
```

- Replace 9-pin "D" connector ("shorting plug") into socket at lower right of PC backplane

- **Follow attached instructions re: "Installing and Testing the PoCa Host Watchdog Timer"**

- The final configuration of AC connections is as follows:

```
mains <--- voltage ---- power bar <--- watchdog timer <--- PC
           regulator     ^ ^ ^ ^
                         | | | \----- monitor
                         | | |
                         | | \------- Cam 0 "clean" AC }
                         | |                           } white
                         | \--------- Cam 1 "clean" AC } collars
                         |
                         \----------- battery charger

mains <--- power bar <--- Cam 0 "dirty" AC
                   ^
                   \----- Cam 1 "dirty" AC
```

NOTE: For each camera, the "clean" AC and "dirty" AC lines are bundled in a common cable.

- Data cable connections are as follows:

- Cam 0 imager data sub-cable (25 pin "D" plug) to upper 25-pin "D" socket in PC backplane (should be marked "AT220" and "cam 0")

- Cam 0 auxiliary data sub-cable (9-pin "D" socket) to 9-pin "D" plug just to the right of the Cam 0 data connector in PC backplane, below the empty hole

- Cam 1 imager data sub-cable (25 pin "D" plug) to lower 25-pin "D" socket in PC backplane (should be marked "AT230" and "cam 1")

- Cam 1 auxiliary data sub-cable (25-pin "D" socket) to 25-pin "D" plug above Cam 0 auxiliary data connector in PC backplane

NOTE: For each camera, imager data and auxiliary data sub-cables are bundled in a common cable.

NOTE: If the data cables are still attached to the PC, disregard the above.

Camera Installation:

- the two cameras are numbered 0 and 1 on the aluminum flanges holding the domes; camera 0 sits on the west side of the tripod (on your left as you stand at the base of the triangle), and camera 1 on the east side; each camera enclosure has a CNSR sticker on the side that faces north;

- on camera 0 the handles point NW and SE, so the camera can be placed on the tripod over the SW corner; on camera 1 the handles face NE and SW;

- place each camera carefully on the rectangular frame, and slide and/or rotate it so that the baseplate and enclosure flange fit underneath the two stainless steel (SS) retainers ("mushrooms"), and the SS pin on the S side of the rectangular frame fits into the semicircular recess in the baseplate;

- once each camera is in place, engage the latch on the NW (camera 0) or NE (camera 1) corner of the rectangular frame;

- attach the two cables numbered "0" to the underside of camera 0, and do the same for camera 1; the connectors for the cables are different sizes and genders so there can be no confusion, but you may have to rotate each cable to find the right orientation to mate with the connector on the baseplate.

Camera Orientation:

- Once the cameras have been installed and cabled, and are operating routinely, adjust the orientation of the cameras to the desired direction (geographic N) by reference to the Sun and/or Moon at times when their azimuths are known. The best times are when the Sun and/or Moon are at the desired azimuth for the central meridian of the cameras.

- at the appropriate time, loosen the SS screw holding the rectangular frame to the tripod and adjust the frame's orientation

until the short cross-tubes of the frame are aligned with the reference object;

- if the camera cables prevent you from moving the rectangular frame to the desired orientation, rotate the entire tripod until the desired frame orientation is achieved, with a margin for error;

- tighten the SS screw firmly, and tie the tripod down to the deck with ropes at each corner.

- if you moved the tripod, check that it is still level, and make any needed adjustments, before finally tying the tripod down;

- verify the orientation at other times as opportunity allows, to ensure that the cameras have not shifted in the wind;

- **NOTE: there is no moonshade this year!**