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Observing Accouterements

A Kiosk, an Eyepiece Heater, and a Double Duty Cart

article and photos by Ron Muir

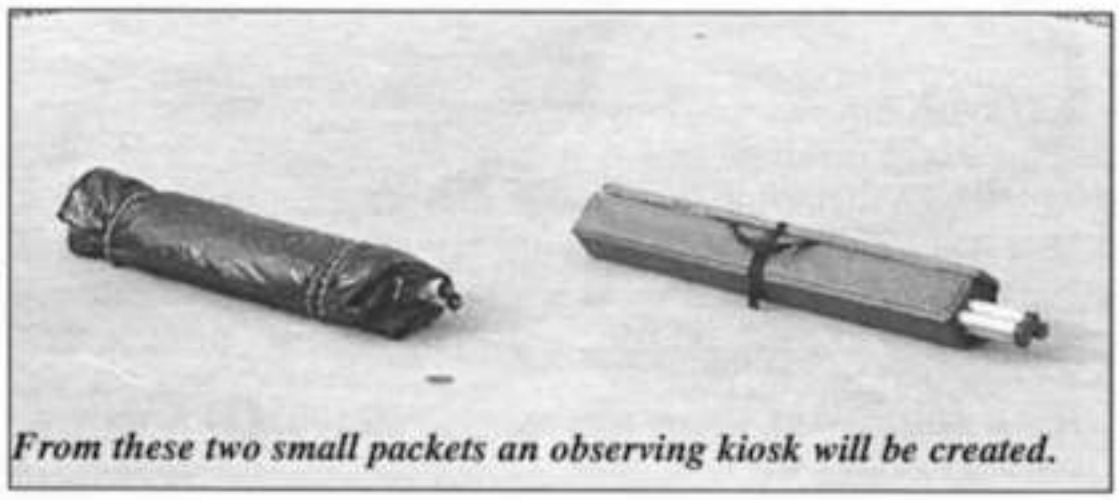
I have often heard it said that to be an amateur astronomer a person must first be handy about building their own equipment. That may have applied to those who pioneered the hobby but it seems increasingly less important as more and more firms are creating new equipment and gadgetry.

Even with the blitz of new items there are a few things I have created just because I couldn't find them in the market place. The first one that comes to mind is my modification of the well-known Camp Time "roll-a table" that is found at almost every assembly of amateur astronomers...you know, the blue one with aluminum legs.

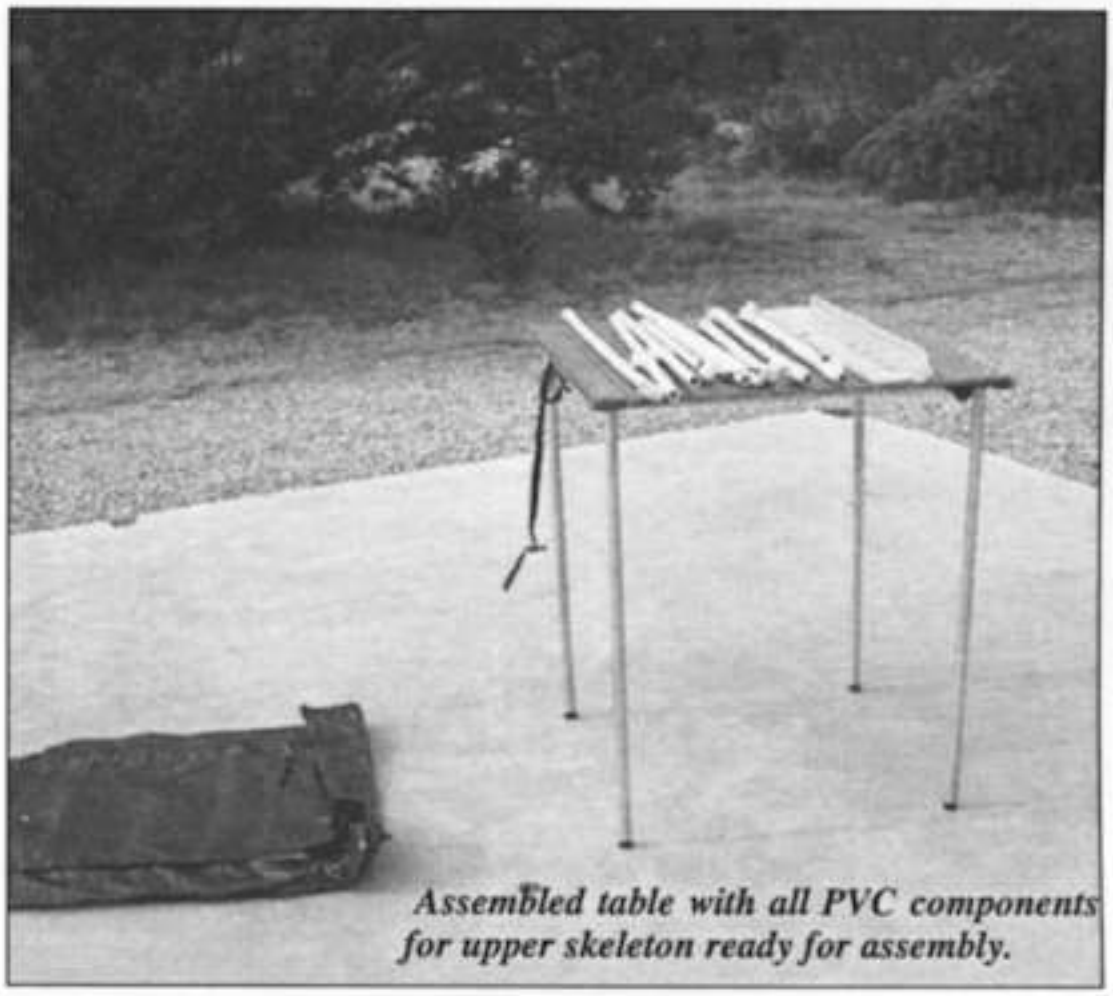
I was tired of needing to dry out all my dew soaked maps, handbooks, etc. each time I returned from a field observing trip and decided to build some type of canopy over the ole blue table. This idea developed into a PVC pipe frame over which I draped a fitted covering. In addition to the canopy I installed an eyepiece holder shelf in the rear of the enclosure. Then I thought it would really be convenient if I had some type of light system built into the framework to supplement my red flashlight. Naturally, the next step was the installation of several red LED's into two of the lateral sections of the upper framework. The lights are powered by a small bicycle battery pack with an added rheostat to vary the brightness.

The next challenge was my height. Because I am too tall using the table caused my back a lot of trouble. This issue was solved by replacing the legs with ones six inches longer. Now I have what is the ideal table for my maps, books and even the computer. I elevated the eyepiece shelf so my cube computer will fit underneath. An unexpected benefit of placing the computer below the eyepieces is the heat from the power supply/CPU warms them, and the monitor.

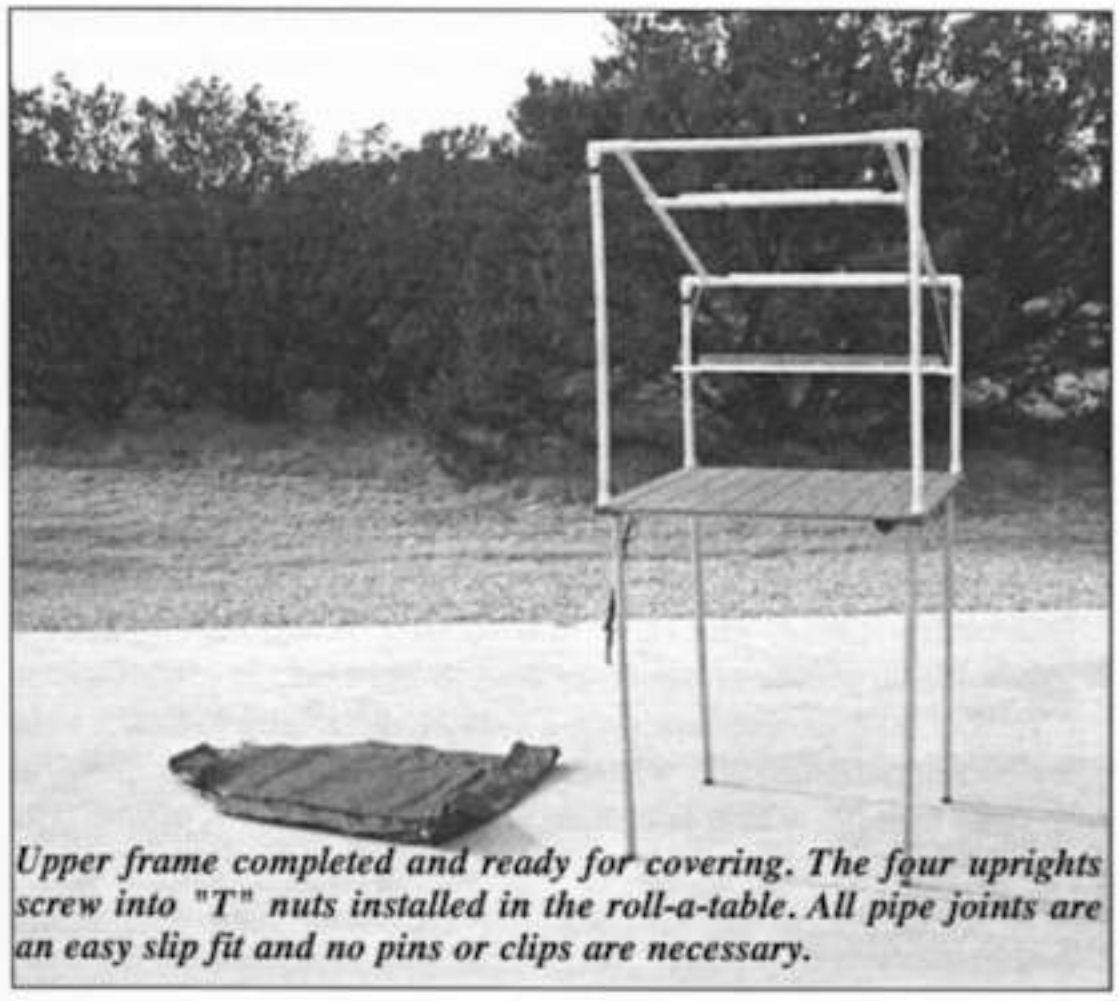
The last addition I made to the kiosk is a fitted cover for the front of the enclosure. The cover is made in two vertical sections attached at the top. This provides for working access and pre-



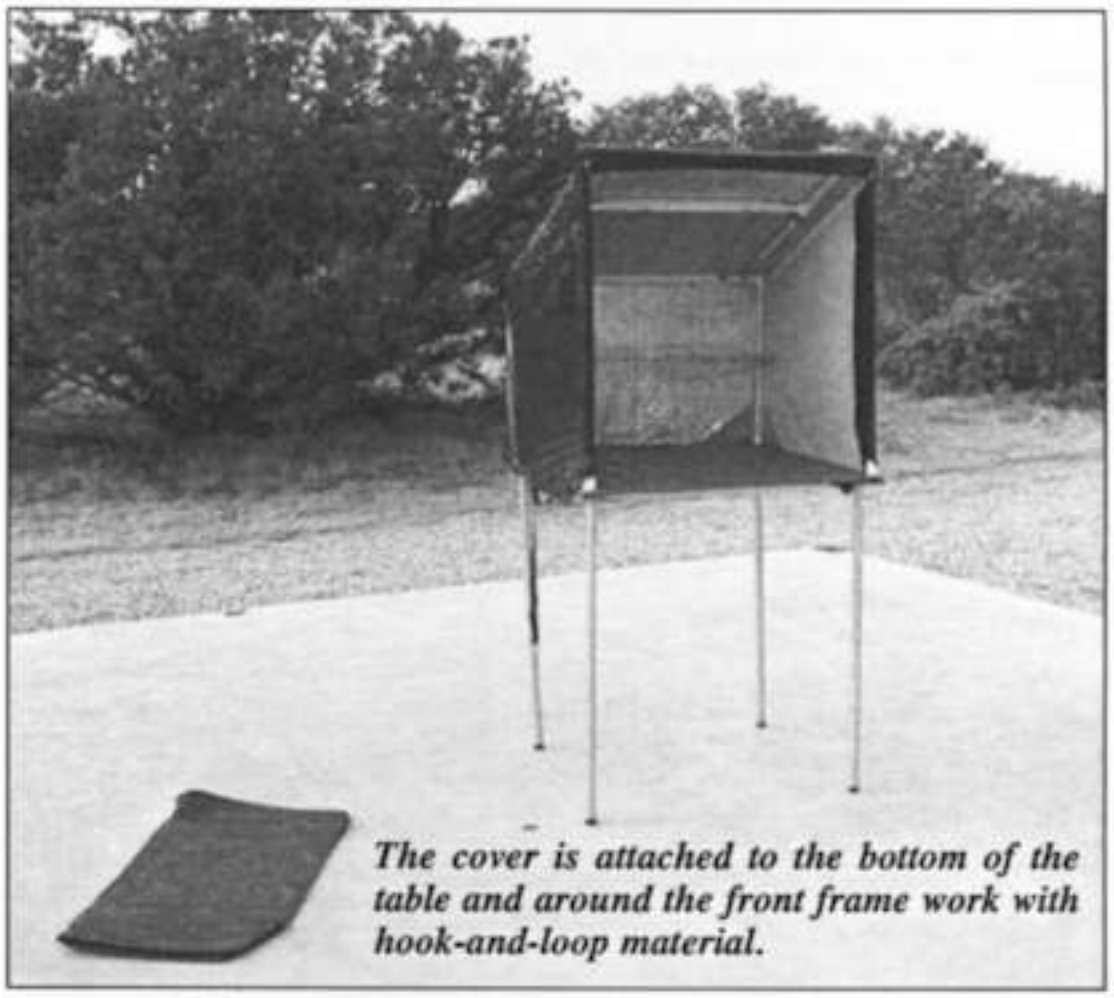
From these two small packets an observing kiosk will be created.



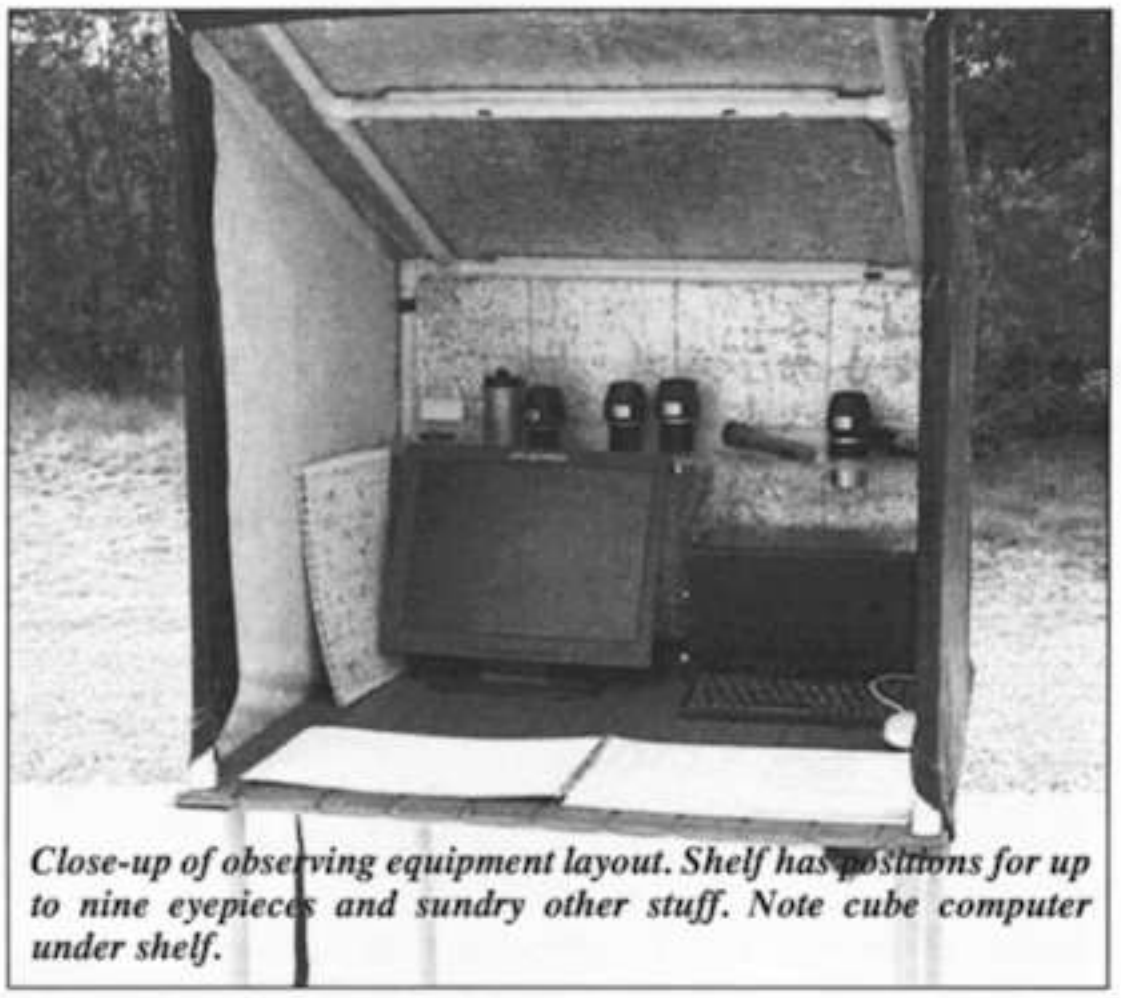
Assembled table with all PVC components for upper skeleton ready for assembly.



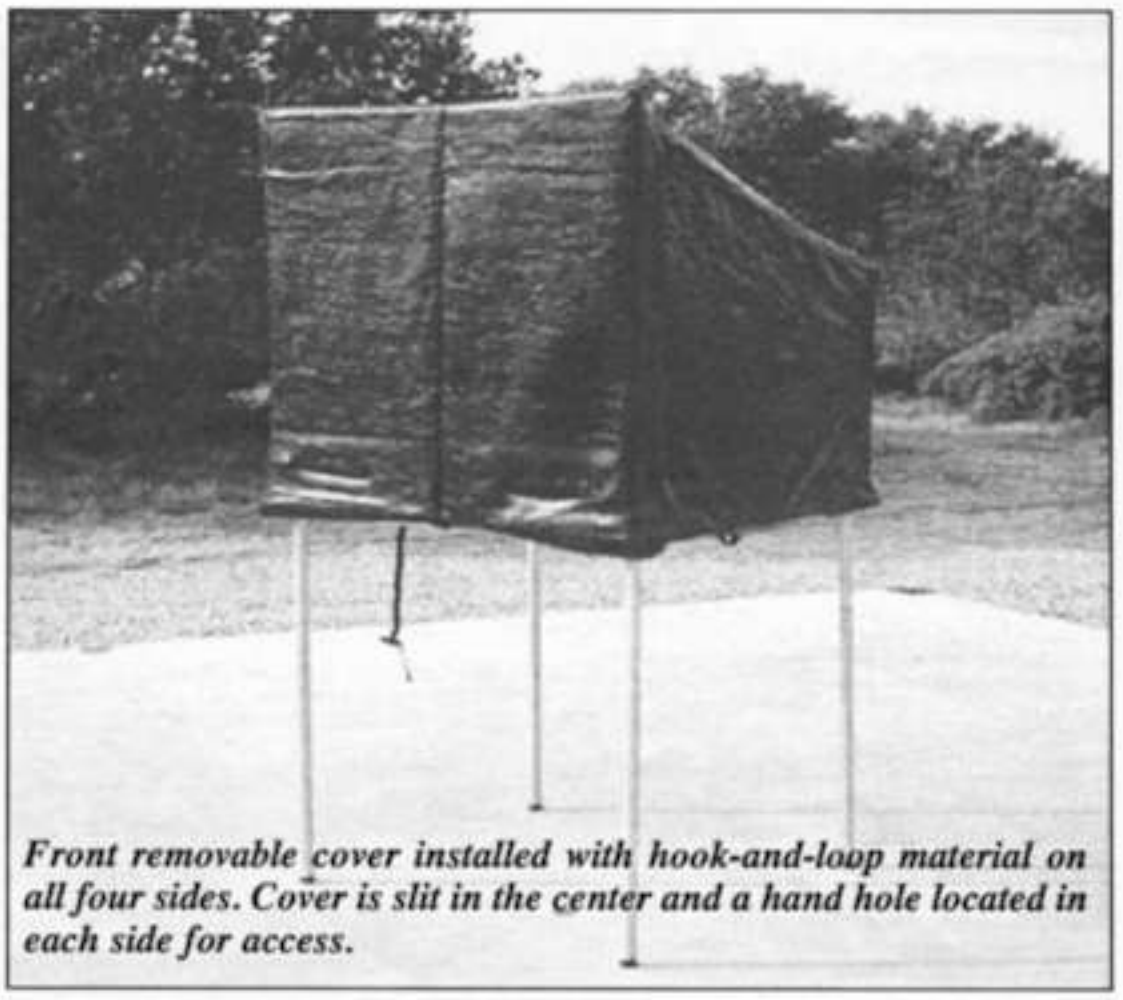
Upper frame completed and ready for covering. The four uprights screw into "T" nuts installed in the roll-a-table. All pipe joints are an easy slip fit and no pins or clips are necessary.



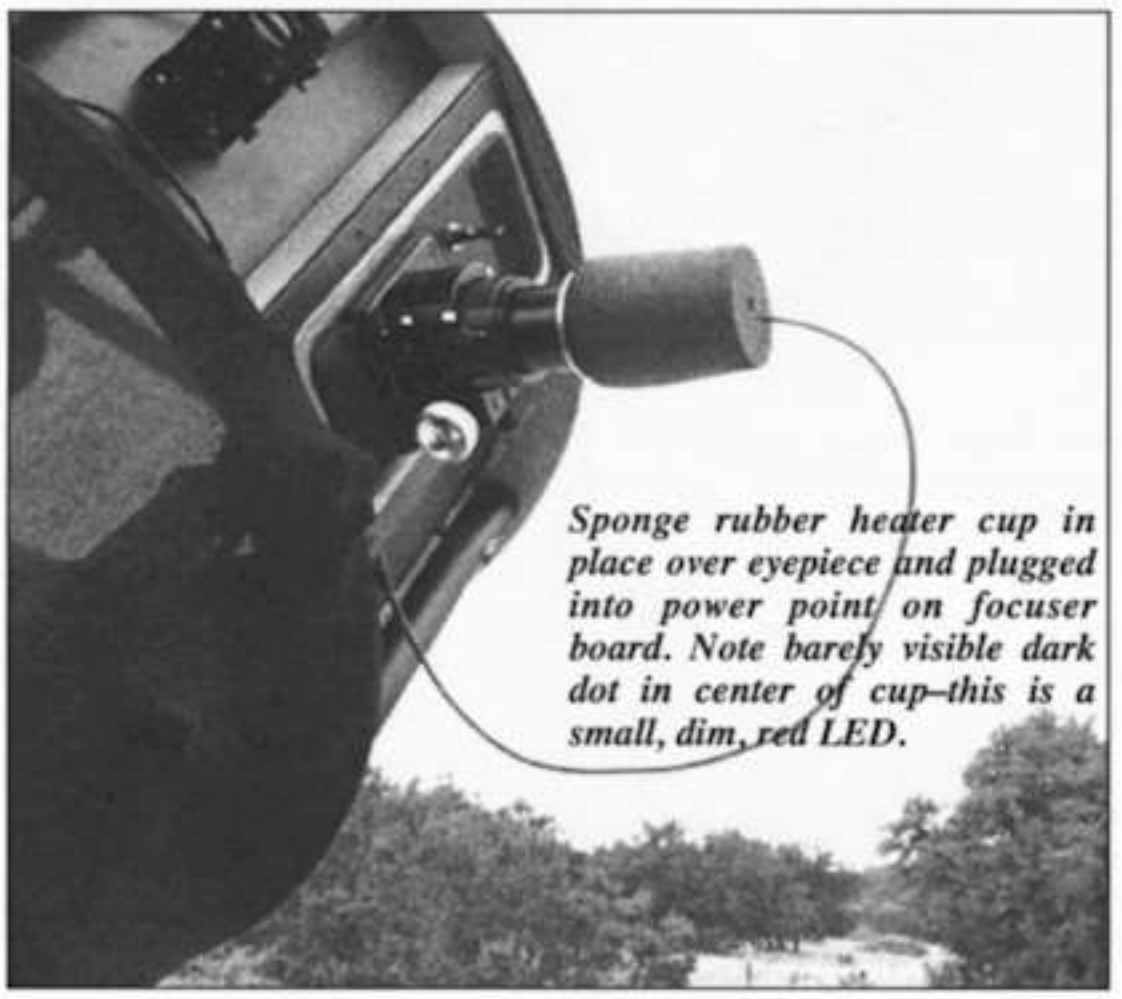
The cover is attached to the bottom of the table and around the front frame work with hook-and-loop material.



Close-up of observing equipment layout. Shelf has positions for up to nine eyepieces and sundry other stuff. Note cube computer under shelf.



Front removable cover installed with hook-and-loop material on all four sides. Cover is slit in the center and a hand hole located in each side for access.



Sponge rubber heater cup in place over eyepiece and plugged into power point on focuser board. Note barely visible dark dot in center of cup–this is a small, dim, red LED.

Close up view of cup bottom with a red LED installed to prevent bumping the cup in the dark.

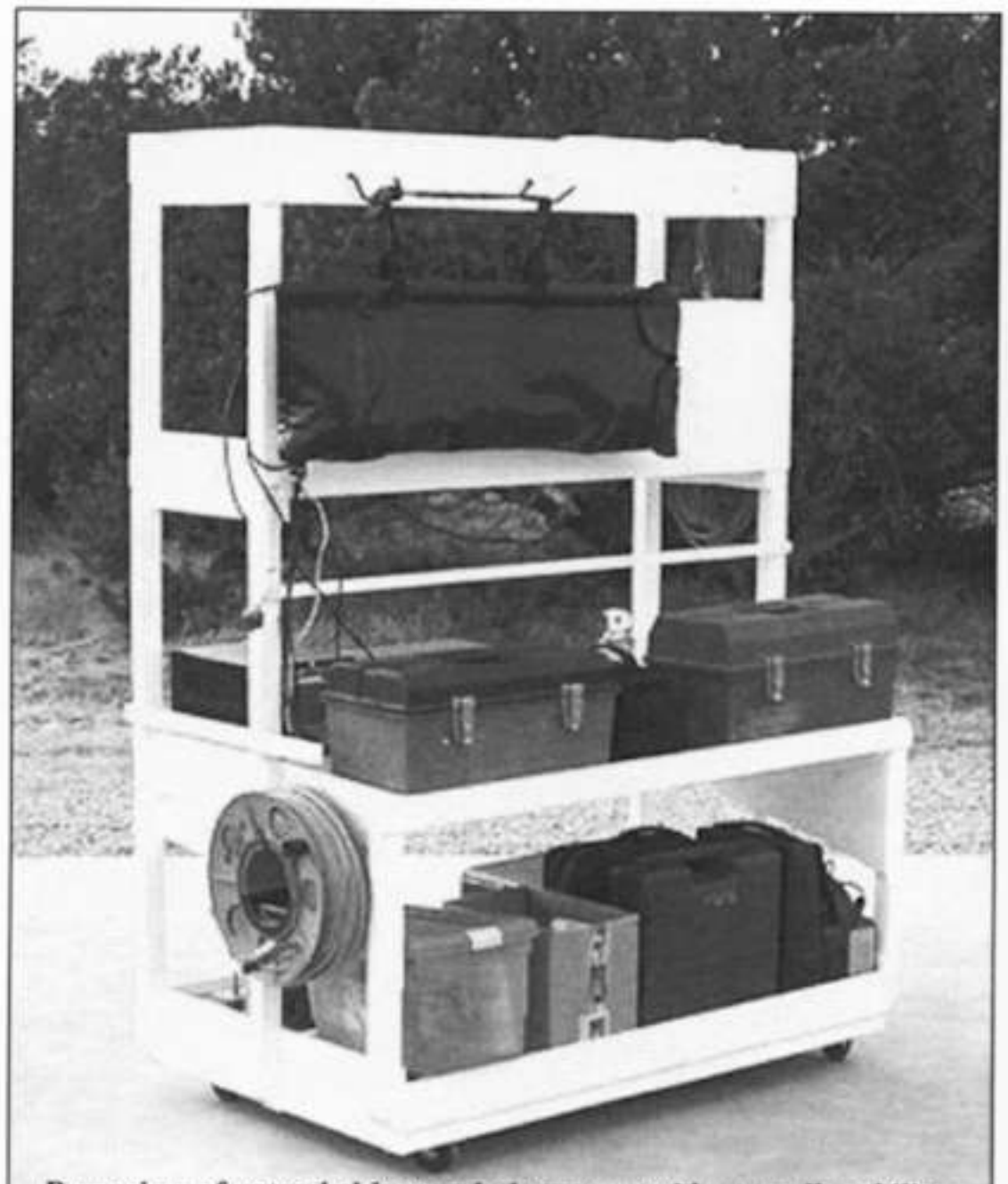
Heat is generated by several ceramic resistors placed in series and powered by 12 VDC.

vents light from escaping and interfering with nearby observers. I installed a hand hole in each side to access the computer keyboard and eyepieces. The cover also serves to prevent wind and dust from getting in.

It took over eight years of evolution but the simple blue table has become a dew free observing kiosk complete with eyepiece holder, illumination, wind protection and surprisingly even an eyepiece heater...I would have never imagined it would turn out this way!!!

Speaking of heaters, when I built my current telescope I extended the 12 VDC system into the cage so it could be used to power the AstroSystems diagonal heater and the ceramic resistor type heater I built into the Telrad. I included a couple extra 12 VDC outlets (RCA jacks) on the focuser board just in case I might need to power some other option later on.

That need came sooner than I expected. As you know, a cold eyepiece fogs up quickly when subjected to moisture and a warm one does not. Now that seems easy enough but somehow it was just an accepted part of my cold weather observing and a problem that I put up with for a long time. A "eureka moment" led to the construction of a basic foam rubber cup that fits over the eye-



Rear view of extended lower shelves to provide overall stability.

Front view with loaded shelves. Each shelf has a front retainer to prevent items from slipping off.

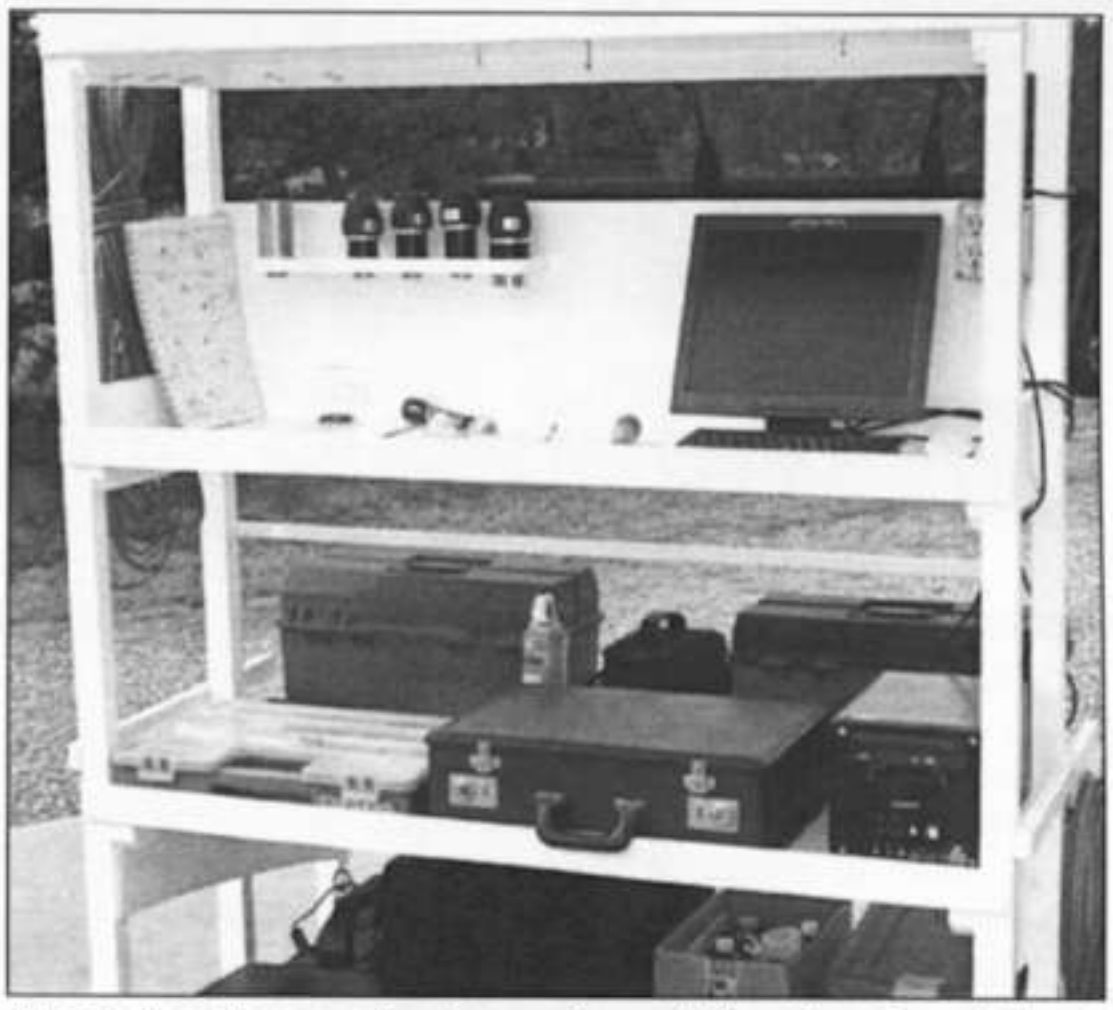
piece when it is in the focuser, and not in use. Inside the bottom of the cup I placed a string of ceramic resistors, that is also connected to the 12 VDC system, to add a little heat when it is covering the eyepiece.

The cup prevented the fogging problem but still had a drawback. In the dark I couldn't see if it was on the eyepiece or not, and I kept jamming my eye into it. The installation of a small, and very faint, red LED into the outside bottom of the cup solved this problem and has saved me from repeated, and sometimes embarrassing, head on collisions. Now when the weather turns chilly I just plug in my eyepiece heater cup, turn on the other heaters and keep right on observing without losing any time to fogged optics.

Next, there is always too much stuff and no place to put it... That was the situation every time I started to unload the truck after returning from an observing trip. Each time I'd stack it someplace different and then have trouble finding something when I needed it. Or even worse, failing to include some critical item when I packed for another trip.

I solved all these issues by constructing a moveable cart with a few shelves that could hold maps, books, computer, binoculars, tools, eyepieces, Telrad, supplies, covers and so on. It is built from used materials, castors and paint that I had stored for much too long. In the construction process I included an AC outlet that is powered by an extension cord and a shelf drilled to hold a few eyepieces. Now the cart can serve as a moveable map and computer table when I'm observing here at home. All of my observing equipment, except the telescope itself, is stored on the cart and can be easily rolled to the observing pad or to the truck for loading. Now I stand much less of a chance of leaving something behind.

The resolution to each of these issues has taken a good deal of time to arrive at, but the end results have proven very useful. All of these creations are simple and can be quickly put together



Front view close-up showing eyepiece shelf and equipment layout for observing use. AC receptacle partially hidden by right upright.

with a modest amount of expense and expertise. I hope this documentation helps you in some small way to enjoy the hobby even more.

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