I recently made some modifications to Harvey, my white Celestron 14, and also bought some new accessories for it. I thought a report might be interesting.

NEW FINDER:

First and simplest, I added another finder -- a duplicate of the 10x40 that came with the telescope. The two are located 120 degrees apart, each 120 degrees from the "bottom" of the tube -- the attach point of the Losmandy dovetail plate. The C-14 is big enough that there is no one location in which a finder is always handy; the extra one makes finding things much simpler when the telescope is pointed to certain parts of the sky.

EASIER ATTACHMENT OF OTA TO MOUNTING:

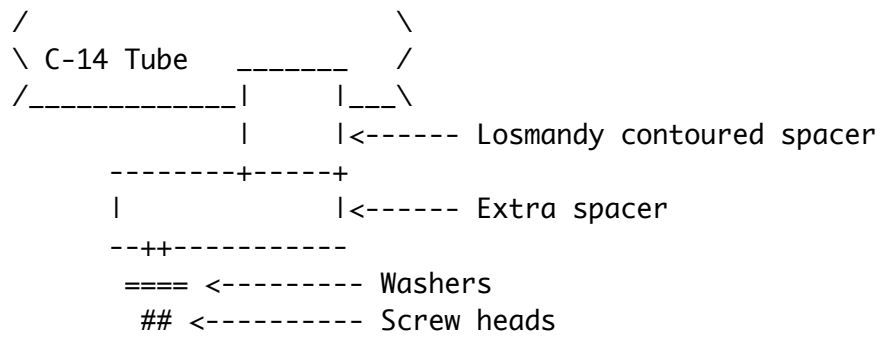
Second, I have considerably changed the attachment of the optical tube assembly (OTA) to the Losmandy G-11 mounting. I'd been doing it the standard way, with Losmandy's dovetail plate and contoured spacers -- sometimes called "radius blocks" -- attached to the "bottom" of the OTA, where one of the sliding-weight balance mechanisms used to go. That worked, but it was awkward to perform the precise alignment required to slide the dovetail plate into the fixture on the mounting, when that dovetail plate was attached to a cumbersome 24 Kg (52-pound) instrument, which was in turn lifted shoulder-high, sometimes in the dark and on uncertain footing.

My modification makes attaching the OTA a two-step procedure. I have unbolted the dovetail plate from the tube, and semi-permanently attached a tube ring for the C-14 (I'm not sure whose unit -- I got it used) near the "sky" end of the dovetail plate. (I no longer use the contoured spacer at the corrector end of the tube.) I slide the dovetail-plate-plus-tube-ring into the clamping fixture on the mounting, without the OTA. That makes the fine alignment easy. When I do this step, I have the big counterweights already installed, and positioned temporarily a little outboard of their final position, so the telescope is stable on top of the mount -- the polar axis isn't going to rotate and dump the tube on the ground.

Next, with the mount set so that the telescope is going to be on top of the equatorial head and pointing at Polaris, I pick up the OTA and settle it into the open tube ring, which catches the tube as if with open arms, guides it into place, and provides lateral support so it won't fall out sidewise. That makes positioning the heavy lift

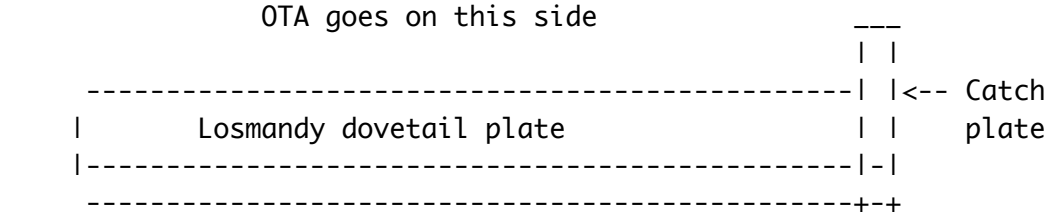
easy, but there is more:

I have kept the contoured spacer at the mirror end of the tube, and I had to add an extra spacer to it to match the thickness of the tube ring. The extra spacer -- a piece of 0.25-inch aluminum extrusion -- is screwed onto the contoured spacer, and extends a few inches toward the corrector plate from the contoured spacer. I drilled and tapped the extra spacer for a couple of 1/4-20 allen-head machine screws which protrude away from the tube, sticking out toward the dovetail plate. It looks like this (use a constant-width font):



The Losmandy dovetail plate has a big wide groove milled down its center line, on the side toward the OTA. The screws and washers loosely engage that groove, so as to provide lateral guidance for the cell end of the telescope as I settle the whole thing down into the dovetail-plate-with-tube-ring. And there is still more:

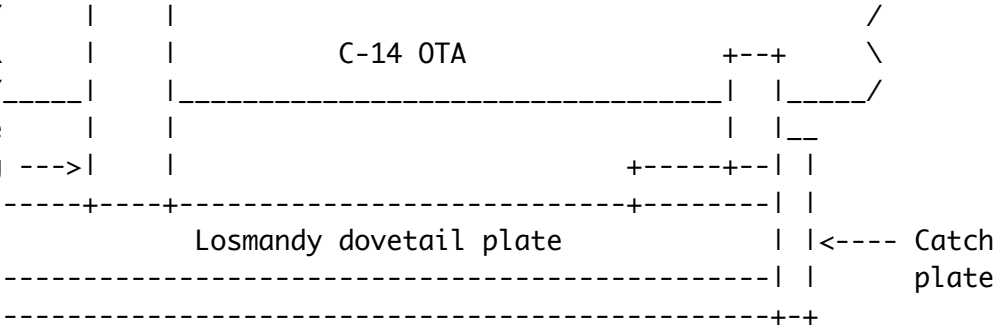
I drilled and tapped the "bottom" end of the dovetail plate, to fasten on a "catch plate", like this:



The catch plate has cutouts at its bottom corners to clear the grooves on the dovetail plate -- you can slide the dovetail plate into the dovetail plate clamp even with the catch plate attached. That's important, because the bolts that hold the tube ring to the other end of the dovetail plate prevent you from sliding the dovetail plate into

the clamp from that end.

The function of the catch plate is to keep the mirror end of the OTA from sliding off the bottom end of the dovetail plate -- to the right in these drawings. The catch plate contacts the spacers and stops the tube assembly at just the right position to insert the bolts that fasten the dovetail plate to the OTA. When everything is together, it looks like this:



In summary, the attach-the-tube sequence goes as follows:

1) Slide the lightweight, easy-to-lift, dovetail-plate with tube ring assembly into the dovetail-plate clamp on the mounting, and clamp it in place.

2) Lift the big, heavy C-14 OTA and settle it into the wide, open arms of the opened tube ring, which support it laterally.

3) Settle the bottom end of the OTA against the dovetail plate, so that the bolts and washers on the extra spacer loosely engage the long groove in the dovetail plate.

4) Guided by the loose engagment achieved in (3), let the OTA slide down along the dovetail plate till the spacers at the mirror end bonk up against the catch plate.

5) Wiggle the spacers at the bottom end sidewise till the holes in the dovetail plate line up with the holes in the spacers. That is facilitated because the dovetail plate and spacers have the same width.

6) Insert the bolts at bottom end, and close the tube ring.

That's all very quick and easy to do, and it worked the first time. I was very pleased. I have addressed the problem of getting the C-14 OTA attached to the mounting both with the old Celestron fork and with the standard G-11, and if I do say so myself, this solution is lots easier to handle.

KENDRICK ANTI-DEW SYSTEM:

I bought a Kendrick anti-dew system for Harvey, and have tested it in serious dewing conditions -- an observing run on a still, wet night which was brought to an early end by the advent of ground fog. The Kendrick system works like gangbusters! My corrector plate was clear of dew even as the sky disappeared behind the fog. At that time, the mount was dripping wet, as were the windows of my car and everybody else's optics at the site. The Kendrick stuff is well enough known that I doubt I need to describe it in detail -- there is a heating element built into an inch-wide flexible strap, that wraps around the tube and is held in place by elastic and velcro. A simple controller accepts 12 volts from a cigarette-lighter fixture, and drives the heater on a variable duty cycle. One controller can drive four heaters.

I started the evening with just the Kendrick heater, and no dew cap. That was fine for a while, but as conditions got worse, I started noticing corrector plate dew near the secondary attachment -- farthest from the heater. I put my dew cap on -- an Orion FlexiShield -- and after a few minutes, the dew was gone, and it stayed gone until the fog had rolled in and I put the telescope away.

KENDRICK 12V 34AH BATTERY:

Kendrick has a new product, the grandmother of all sealed-cell portable lead-acid batteries, a 12-volt 34 ampere-hour unit, with four cigarette-lighter outputs (two fused, two with circuit breakers) and a liquid-crystal display that reads out state of charge. It comes in a nice carrier and is well made -- built like a tank and almost as heavy! It costs probably $100 more than would the same assembly of parts if I bought them at retail and assembled it myself, but I could not do as clean and compact a job as Kendrick, and I thought it worth the extra $100 to get maximum simplicity, lightness, and portability in something potentially as cumbersome, kludgy, full of trailing wires, and even dangerous, as a large portable battery system. I doubt I will take this unit out except when I am anticipating dewing -- I have a much lighter 8 ampere-hour system which will drive my

Losmandy G-11 all night long -- but when I need it, it will be invaluable.