



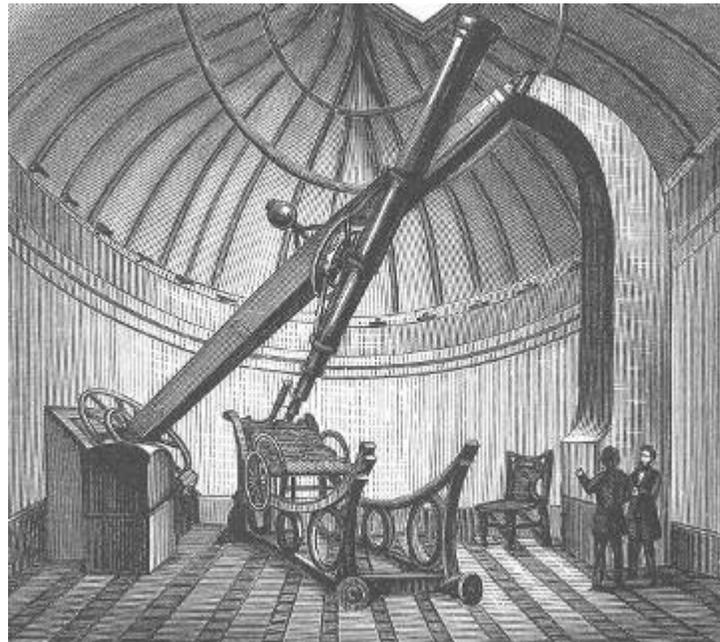
*The Otter Creek Astronomical Observatory*

# *The Observer*

*May 2007 (#8)*



**THE END IS NEAR!** On July 1, 2006 the observatory closed for overhaul and installation of new equipment. We are removing our 10-inch Meade SCT and its mount and replacing it with a large refracting telescope with a custom-fabricated mount. The observatory re-opened for Daytime (Solar) programs in October 2006. Night programs were not offered while the work continued. This was done both for the safety of our visitors and for the safety of equipment which may currently be partially installed or sealed against dust. Now we will be closing again as we make a final push to finish this project.



Visit the Otter Creek Observatory web page at

[www.ottercreekpark.org](http://www.ottercreekpark.org)

**S**o what is going on at Otter Creek Observatory? Is this telescope project ever going to end? Will the observatory ever re-open for night programs again? Why are we closing again? Believe me -- these questions have been going through my mind for the past five months. I had hoped to have this project finished by the end of 2006 but it has been far more difficult than I anticipated. We are at this point about five months behind schedule. On the other hand we are well under budget! Those two things are probably related, as we are doing most of the work on this telescope "in-house" instead of paying for commercially manufactured equipment.

However, we are nearing completion -- near enough that I think if we concentrate on the project (and not worry about, for example, keeping the interior neat and safe enough for any public use) we can finish by the end of June (fingers firmly crossed here). What follows are some pictures of the work in progress, along with comments.

The 4-inch f15 refracting telescope temporarily mounted. The tube of the f15 measures 6 inches in diameter. Bryan Lewis of Otter Creek Park and Grant Gamble of Jefferson Community & Technical College were both instrumental in helping build the f15.

In the background can be seen the wooden tube of the 6-inch f18 refracting telescope. The f18's hexagonal tube is over 10 inches in width and is nearly 10 feet long.



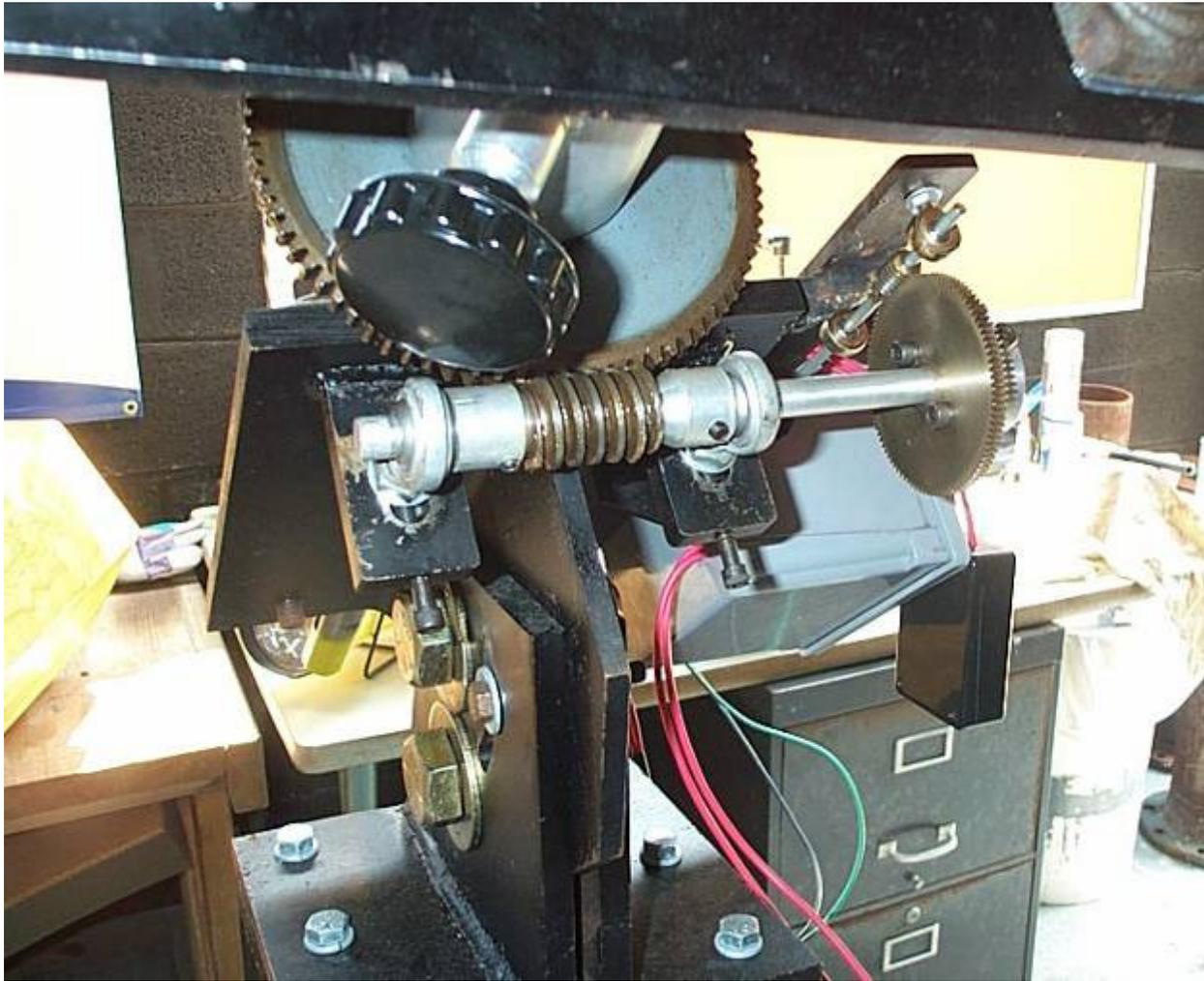
f15 means the lens of the telescope is designed so that the telescope will be 15 times longer than it is wide. f18 means the lens of the telescope is designed so that the telescope will be 18 times longer than it is wide. Loosely speaking, a higher f value means better views of the moon and planets and stars.

Please pardon the mess!



More views of the f15 telescope and f18 tube.





The drive mechanism for the mount that will hold the two telescopes. This gearing system will move the telescopes from East to West at a rate of one revolution per day, canceling the rotation of the Earth and allowing the telescopes to stay trained on one object for a long period of time. The mount and drive systems were built by a team of mechanical engineering students at the University of Kentucky. The team was led by Mark Bennett, a Jefferson Community & Technical College alumnus. The students built the mount mostly from scrap metal for almost no money. Engineer and observatory volunteer Henry Sipes and I had to make a few minor modifications to the students' original work (which had never been tested) to render it fully operational, but very few! The students did a remarkable job. Not visible in this photo but visible in the photo on page 2 is a crank which allows the entire mount to be raised and lowered so that the height of the telescope's eyepiece can be made more convenient.



The tube for the f18. What's with the rope? I needed a way to be able to apply varnish to the tube all at once, and hanging it from the roof (and rotating it when needed) turned out to be the trick for doing that. The tube was built with the help of Grant Gamble of Jefferson Community & Technical College's [wood products](#) program. The hexagonal wooden piece at the end of the tube was precision cut using a robot from Gamble's program, as were many other pieces that cannot be seen in this picture.



The business end of the f18 -- with lens installed.



The f18 nearly finished. The focusing mechanism (red), a two-speed precision “Crayford” mechanism, has been installed. The lens and the focuser are the only parts of these telescopes that were “store bought”. All the rest of the telescopes were made by observatory volunteers, out of raw materials of very low cost. Excluding the lenses and focusers, the total dollar cost for both telescopes and the mounting system will wind up being roughly \$750! No, that’s not a typo -- seven hundred fifty dollars.

Thus Otter Creek Observatory is very close to having its new telescopes operational! This will be a unique system -- you don’t find 6-inch f18 refractors just anywhere. And this is an all-volunteer project. So, have patience -- I think the result will be well worth the wait. And you shouldn’t have much more wait.

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