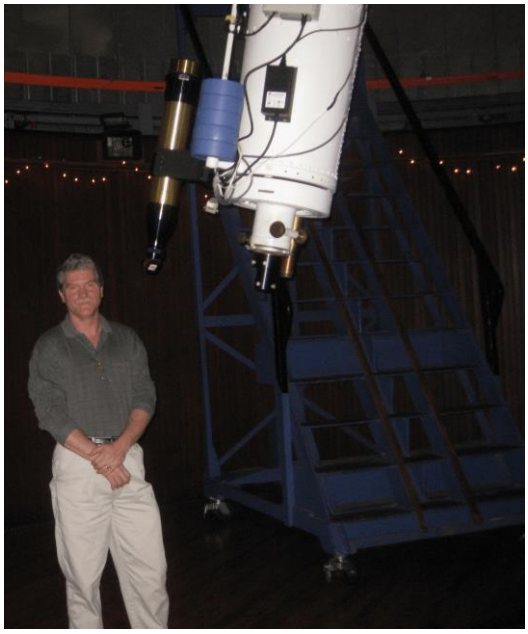
THE NIGHT SKY NATURALIST, by Bob Vickers

A Visit to Dearborn Observatory

A few weeks ago, as cooler days brought the first hints of fall, Melissa and I had the opportunity to visit a venerable old observatory on the campus of Northwestern University in Evanston, Illinois. Close to the shores of Lake Michigan, Dearborn Observatory is a gray, rough-cut limestone structure in the middle of campus that looks vaguely like a castle turret topped with a silver dome. It houses one of the few refracting telescopes that remain in professional use.



In 1859, the scope's 18.5" inch primary lens was originally ordered by the University of Mississippi to be ground and polished by the world famous Alvan Clark & Sons. At that time, it became the world's largest. (Two 15" refractors existed, one at Harvard College Observatory in Cambridge, Massachusetts, and the other at Pulkovo Observatory in Russia.) During testing of the lens Alvan Graham Clark, one of Alvan Clark's sons, discovered Sirius B, the first white dwarf star to be observed. This was only the beginning of a long and distinguished career for the lens. When the Civil War broke out the order was canceled and the lens lay idle until 1863 when the Chicago Astronomical Society and the University of Chicago purchased it. Having been spared from possible destruction during the war, they installed it in the newly built Dearborn Observatory in 1864 where it was used by Truman H. Safford to discover 108 new "nebulae." Most of these objects turned out to be galaxies which were included by John Dreyer in his Index Catalog (IC).

At that time the observatory was located in Chicago where it survived the great fire of 1871 and was used by G.W. "Jupiter" Hough to study (not surprisingly) Jupiter and discover more than 250 double stars. By 1886, however, the University of Chicago had fallen on hard times and rapidly went bankrupt. A new home for the telescope was constructed at Northwestern University in Evanston and by 1909 it had been used to discover 102 more double stars.

Northwestern University continued to make significant contributions to science through the measurement of the proper motions and parallaxes of stars, studies of faint red stars, and photography of the asteroid Eros which improved the accuracy of distance measurements in the solar system. It was also at Northwestern in 1914, at a meeting of American astronomers, that the renowned astronomer Vesto Slipher, of Lowell Observatory, announced to a standing ovation that he had measured the redshifts of 15

“spiral nebulae.” (No, Edwin Hubble was not the first!) This was the first evidence of the expanding universe.

Amazingly, in 1939, the entire building (at an approximate weight of 2500 tons) and its telescope pier (at an additional 125 tons) was moved intact a distance of 644 feet to its present location to make way for the new Technological Institute. This Herculean feat was performed over a period of three months by 28 men using jacks. The total time the building was in motion amounted to approximately 7 hours during which it attained a top speed of 20 inches per minute!

It was in this location that Melissa and I caught up with the observatory and its 150 year old telescope lens on a cool fall evening in September 2009. (Though the scope is used primarily for teaching and research purposes, Friday nights are set aside for public touring and viewing - a free service Dearborn has offered since 1926.) Unfortunately, it was also a cloudy fall evening so we had to settle for just the guided tour and did not get to look through the scope. While a graduate student related to us the history of the lens, scope, and building, we gazed at the beautiful old hardwood flooring and walls that spoke to us of a nostalgic and bygone era. It was easy to imagine sitting on the adjustable seat which glides along vertical rails on a large movable scaffold. I could imagine myself at the eyepiece of the majestic white telescope on its massive blue mounting and pier on a cool, *clear* night in September 1909. Is that a new double star I see…?

Another visit to Dearborn may be possible sometime in the next few months. I would really love to look through that historic old lens! We’ll do a follow up report if that happens.

“The true scientific mind is not to be tied down by its own conditions of time and space. It builds itself an observatory erected upon the border line of the present, which separates the infinite past from the infinite future. From this sure post it makes its sallies even to the beginning and to the end of all things.”

--Sir Arthur Conan Doyle