NOVAC robotic observatory project comes to life

by Craig Tupper

In October 2002, Craig Tupper announced to the NOVAC email list that the long-running NOVAC CCD Project *(www.novac.com/craig/)* was coming to an end. Pete Johnson asked whether Craig had ever thought about an internet-controlled CCD observatory for all NOVAC members. After a great deal of discussion among Craig, Pete, and Bob Parks, Craig and Pete made presentations to the NOVAC Board on November 5; the Board approved it. Craig, Pete, Bob, John Deriso, Hank Doyle, Alex Lim, Mike Mills, and Bob Neff are currently working on it.

We intend to build a robotic observatory for CCD imaging, accessible by all members via the Internet. To keep costs down, we are going to use as many existing or donated assets as possible, including the club's 10" LX200 telescope; Craig's CCD camera, wedge, and balance weights; and donated computers. The observatory will be placed on a mountain near Moorefield, WV, on land owned by Bill Bryson, who will give us a long-term lease. (Thanks, Bill!) There is no public access to this remote, gated site; there are several other observatories already on the mountain, and no prior vandalism. The site is close enough to D.C. for construction and maintenance (2 hours from the beltway), and the skies are pretty dark—about magnitude 6.5 or better, with limited potential for decay.

We hope to start site construction by early spring, and be online before summer. Once it's done, members will be able to obtain CCD images from the comfort of their keyboards. This should be fun and educational, as members will learn about CCDs, observatories, or other aspects of astronomy. It will also enable members to do scientific projects, such as asteroid and/or comet discovery, supernova hunting, variable star photometry, searches for extra-solar planets, or lots of other potential, multi-member, science projects.

Imaging will not be "real-time." That is, we can't have nine people trying to joy-stick the telescope at the same time. Instead, the software package we have chosen provides a simple web-based form to request images of individual objects, and also accepts formatted lists of targets for scientific projects needing multiple exposures. The software consolidates the observing requests, builds an imaging queue based on position on the sky, takes observations, and posts images via ftp for retrieval. This should enable full use of every minute, all night long, every clear night.

The cost of the project should be around $5000 to $6000 to get up and running, and about $1000 per year for internet access, maintenance, and AC power. Donations to NOVAC in support of the project may be sent to the club Treasurer, Pedro Martinez. We also welcome potential collaborations with universities or other organizations.

This is an exciting project that will be used by many members. We hope it will focus our large, diverse club on a big project, without the need to buy land in a remote location that few will visit. For more information, including regular updates, tune in to the club email list or visit the project web page at *www.novac.com/robo/*. ✶

Just one of many designs being considered for NOVAC's robotic observatory

Leonids,

from page 1

there we were, most of us with coats and sweaters thrown over night clothes, standing in the cold night and watching a display of indescribable beauty.

What did we see? Well, it's hard to *imagine* 50 meteors per second, much less count them. Just the same, this is probably what we had. All we could do was watch, and enjoy the once-in-a-lifetime heavenly show.

The entire sky, from zenith to horizon, in all directions, was filled with meteors. On a clear, moonless night in 1966, the skies in Richfield were very dark, and the constellations prominent. In this morning Minnesota sky, the meteors were so thick and numerous that the constellations could barely be distinguished. It was exceedingly difficult to distinguish the constant stars from the falling, inconstant ones!

The meteors seemed to be of nearly every color and brightness, ranging from the bright fireballs with long,vaporous trails to the popping flashes of those near the radiant, which seemed to be coming straight at us!

Looking toward the radiant, the storm resembled very much the look of large snowflakes, caught in the highbeams of a car cruising at 60 miles per hour. Only this time, it was the *earth* hurtling into a dense swarm of dust and grit! I have never again experienced such a clear perception of the earth moving through space.

After about 30–40 minutes, the sky began to visibly brighten, and it was time to reluctantly go back inside to continue the day's responsibilities. Even as we finally wrapped things up, the brighter meteors could still be seen, stitching the dawn with the brilliance of their incandescent fire.

Footnote: Some of you, in reading about comets and meteors, or about the history of astronomy, may have come across an illustration of a woodcut of the Great Leonid Meteor Shower of 1833 (see page 1). This is what it looked like, folks! Apparently, every 133 years, the earth moves through the main meteor cloud of the Leonids.

Next time for the display reported here: 2099. Something to pass on to your grandchildren (or great grandchildren) . . . ✶