



February 25, 2014

The Honorable Frederick Mueller and Council  
City of Sierra Vista  
1011 N Coronado Dr  
Sierra Vista, AZ 85635

Dear Mayor Mueller and Council:

I'm writing to express my concern regarding the possibility that the city of Sierra Vista will lift its current prohibition on digital signs. The MMT Observatory, operated jointly by the University of Arizona and the Smithsonian Institution, is located on Mount Hopkins approximately 35 miles from Sierra Vista. As the Director of the MMT, one of my roles is to keep the 6.5-m telescope competitive and productive for many years to come. To do so will require that we maintain a high quality astronomical site.

As the 14th largest telescope in the world, the MMT is a powerful tool for discovery. In astronomical research, advances and cutting edge science often require observations of very faint astronomical sources using large aperture telescopes. However, the gain realized in aperture must be complemented by good site quality, i.e., atmospheric conditions and dark skies. Arizona has become a world leader in astronomical research in part because of its high quality sites.

Degradation of the dark sky is not a foregone result of population growth; rather, it can be significantly mitigated by continuous improvements in outdoor lighting. For almost all general purpose outdoor lighting there are effective measures that can not only improve the quality of light where it's needed but conserve energy by lighting efficiently and eliminating wasted uplight. However, digital signs pose a particular problem even when limited by sign or lighting codes. Horizontally directed blue rich LEDs emit light that can travel long distances before scattering and contributing to sky glow. The potential impact above a nearby observatory like the MMT is therefore quite significant. An added concern is the likelihood that competition will drive a very rapid growth in the number of digital signs once the prohibition is lifted. The impact on dark skies will grow as rapidly and there will be no recovery.

I hope that you will consider the potential impacts on the nearby professional and amateur observatories as you contemplate lifting the current ban on digital signs in Sierra Vista.

Sincerely,

A handwritten signature in black ink that reads "G. Grant Williams".

G. Grant Williams  
Director, MMT Observatory