

# Proposed Rosemont Copper Project

## Dark Skies Coordination Meeting

December 19, 2012

### Attendees:

| <u>Forest Service</u> | <u>SWCA</u>                   | <u>Cooperators</u>                  |
|-----------------------|-------------------------------|-------------------------------------|
| Mindee Roth           | Chris Garrett                 | Dan Brocious (Whipple Observatory)  |
| Beverley Everson      | Don Davis (Dark Sky Partners) | Emilio Falco (Whipple Observatory)  |
| Sarah Davis           | Doug Jeavons (BBC Consulting) | G. Grant Williams (MMT Observatory) |
|                       |                               |                                     |

### Topics Discussed:

- Discussion of the reduction of the total lumens for the mine, and the change of spectral characteristics of lighting (Davis)
- Discussion of dark sky modeling and calculations (Davis)
- Discussion of impacts. Falco indicated that it was clearly an improvement over the original plan, and does not look like a significant increase in brightness. Identified the range from zenith to 70 degrees as the appropriate area to consider, and that any direction was also appropriate to consider. Williams agreed that it is a significant improvement, but noted that any increase in sky brightness will have an impact on the observatory.
- Discussion of quantifying socioeconomic impacts. Jeavons asked whether impacts could be quantified. Williams indicated that they could be quantified in terms of telescope time, and could quantify the need to change telescope aperture to overcome an increase in brightness. Falco indicated that some targets that are faint simply will not be observable, so there definitely will be an impact. Williams also indicated that the biggest concern is perception, and that while mine impacts are finite length of time, perception impacts would be permanent as the damage would already be done. Falco indicated that negative feedback has already been received. Brocious indicated dust buildup on optics may also be an impact.
- Discussion of analog situations. Garrett asked whether this was a comparable situation to population growth. Falco indicated that lighting does have helped mitigate the effect of population growth. Brocious indicated that there are analog situations with other observatories, such as Mt. Wilson near Los Angeles where observatories have stopped operating because of sky brightness. It is a

cumulative effect over time, not typically a single event or project that causes the damage.

**Decisions Made:**

- None

**Action Items/Assignments:**

- Williams indicated he would attempt to make some quantitative calculations, would get back to group mid-January
- Jeavons work to be circulated to group by SWCA when appropriate

**Attachments:**

- 1.Meeting Agenda and Handout

**ATTACHMENT 1**

**MEETING AGENDA AND HANDOUT**