1.1

A partially cloudy sky was observed through a polarizing filter about midday at Moorpark College. Starting with the filter’s TA in the “up” position, the sky looked less shiny with a reduction of intensity. As the filter was rotated clockwise 90 degrees the intensity varied slightly, less intense at 45 degrees and about the same intensity at 90 degrees as the up position. This test was repeated several times due to unclear changes in the intensity as the filter was rotated. It’s “clear”, however, that the general intensity level of the sky was reduced while looking through the filter, greatly eliminating glares and reflections.

1.2

The surface of a black desk in a well-lit room was observed through a polarizing filter. Starting with the filter’s TA in the “up” position, the black-level of the desk looked about the same but with reduced intensity. As the filter was rotated clockwise 90 degrees the black-level decreased, giving the surface a lighter complexion. Because reflected light from shiny horizontal surfaces is partially horizontally polarized, having the filter’s TA at the 90-degree position allowed the reflected light to pass through the filter, while having the TA in the up position filtered the reflected light.

2

Power, which is proportional to intensity, was graphed in relation to . The relationship was linear with an value of 0.9993. These results are consistent with the theoretical concept that polarized light will lose minimum intensity when passed through a polarized filter with transmission axis parallel (0 degrees) to the polarized electric field wave, and will lose maximum intensity when the transmission axis is perpendicular (90 degrees).

4.

“Brewster's angle (also known as the polarization angle) is an angle of incidence at which light with a particular polarization is perfectly transmitted through a transparent dielectric surface, with no reflection. When unpolarized light is incident at this angle, the light that is reflected from the surface is therefore perfectly polarized” (Wikipedia).

Some of the major practical applications of Brewster’s angle include:

1. …