DAYTIME OCCULTATION OF VENUS BY CRESCENT MOON

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A spectacular daytime occultation of Venus was observed over North Central Florida on 2015 December 7. A video clearly shows both the planet's disappearance behind the lunar bright limb and its reappearance from behind the dark lunar limb about one and one-half hours later

On the afternoon of Monday, December 7, 2015 the thin waning crescent Moon passed over brilliant Venus, an event visible from most of North America and Central America. Although this daytime occultation may not "wow" everyone, it was still an interesting and fascinating treat to watch in real time. The daytime occurrence also made observing this event especially challenging and difficult to witness.

Prompted by clear skies, I undertook the laborious and time-consuming chore of setting up a five-inch refractor on my front lawn with an attached Canon SLR camera capable of recording video. I had little time to spare since centering and focusing on the pale crescent less than four days from new phase (13% illuminated) also required some effort.

In addition, gusty winds frequently shook the telescope and mediocre seeing made focusing difficult. Although the Moon's total brightness was about four to five magnitudes more than that of Venus, this brilliant planet has a much greater surface brightness than the Moon. Thus, Venus was easy to see but the Moon was washed out against the background sky. So, Venus proved easy to spot in the telescope's finder but the Moon paled in comparison and only shone faintly above the sky background.

Fig. 1. Venus approaches the 'bright' lunar limb approximately seven minutes before first contact.

I sent the camera's image to a small LED television hoping this would make finding, viewing and centering the images easier. Although inconvenient, I found it necessary to use a black cloth over my head and the televison set to see the washed out lunar image. Capturing their images in the camera and setting a "proper" exposure was thus a challenge.

The seventeen arc second disc of Venus met the Moon's daytime limb on schedule at approximately 12:42 p.m. EST taking about 30 seconds to disappear. Judging first contact and the time of immersion was difficult due to poor seeing, the waxing gibbous shape of Venus (69% illuminated) and blustery, intermittent winds shaking the telescope.

See **Figure 1** showing Venus about seven minutes before its disappearance behind the bright but pale lunar crescent.

Reappearance was scheduled for about 2:09 p.m. EST from the dark lunar limb. Success was problematic. The lower altitude of the Moon (13 degrees) and an even brighter western sky made the Moon barely visible. The dark limb, of course, could not be seen at all and I had to guess where to center the telescope to catch the reappearance of the planet. However, "luck" and the weather were in concert and Venus not only reappeared on schedule but was also within the telescope's field of view.

Many other sky events are more spectacular than observing an occultation. Still, like watching and waiting for the first bite taken during a solar eclipse, a thrilling moment occurs when the event actually does happen, and happens "on time."

Whether or not you saw this event, see the brief (3m22s minute) video showing both the planet's disappearance and reappearance.

While not quite the same as watching this event in real time, the video reminds us of one of nature's remarkable and impressive sights. ¤

FOR VIDEO (ON YOUTUBE) GO TO

https://youtu.be/jfJ_ymDnxWc