



B.Metallinos

image: Bill Metallinos

“Blue Moon” – July 31, 2015



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In the photograph
the Moon *appears*
“7.5 times taller”
than the man.



1. Given that on this date the Moon was 362.4 Mm away, what was its angular diameter in arc minutes (its actual diameter = 3480 km)?
2. Given the Moon appeared 7.5 times bigger, what is the approximate angular height of the people in the picture?
3. How far away was the camera from the people (supposing the man is 6.0 feet tall)?
4. Supposing the cliff top is on the horizon, what was the altitude of the Moon's center?
5. Supposing the picture was taken at dusk, what was the azimuth of the Moon?
6. Explain why you could never see this "with the naked eye".

Answers:

1. Angular diameter of Moon: 33'
2. Angular height of people: 4.4'
3. Distance to camera: 4700 ft or 0.89 miles
(camera had a telephoto lens!)
4. Altitude of Moon's center: 17'
5. Azimuth of Moon's center: roughly 90°
(because the Moon is fully illuminated, the Sun must be "behind" the camera on the opposite horizon – setting in the west at azimuth 270° roughly)
6. You could never see this with the naked eye because your eye lacks magnification – the people would look like specks.