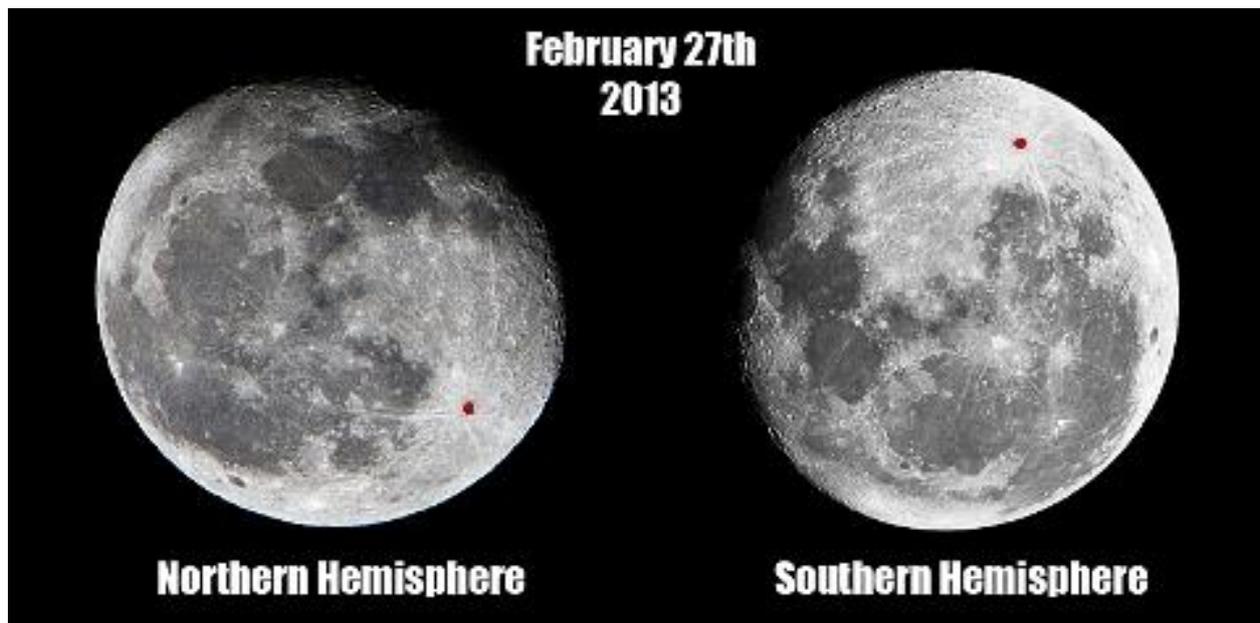


Disproving the flat earth narrative

Our Moon appears to have a bizarre behavior and fluctuating tilts and orientations, as viewed from Earth. To be sure, spatial perspective is a quite challenging subject matter, especially when it comes to astronomical observations, what with all its angular variables (diverse earthly locations and observational frames of reference, oscillating seasonal tilts, latitudes and longitudes of our moons and planets, etc). The case study below is yet another proof of our planet's spherical shape. I will also take the opportunity to demonstrate the explanatory power of the Tychosium 3D simulator.

Below are two photographs of our Moon captured on the same night (27 February 2013) from two almost diametrically opposed locations on Earth: Hickory (USA) and Pretoria (South Africa). You can read about it here:

https://www.reddit.com/r/astrophotography/comments/19lj70/the_moon_from_the_northern_and_southern_hemisphere/



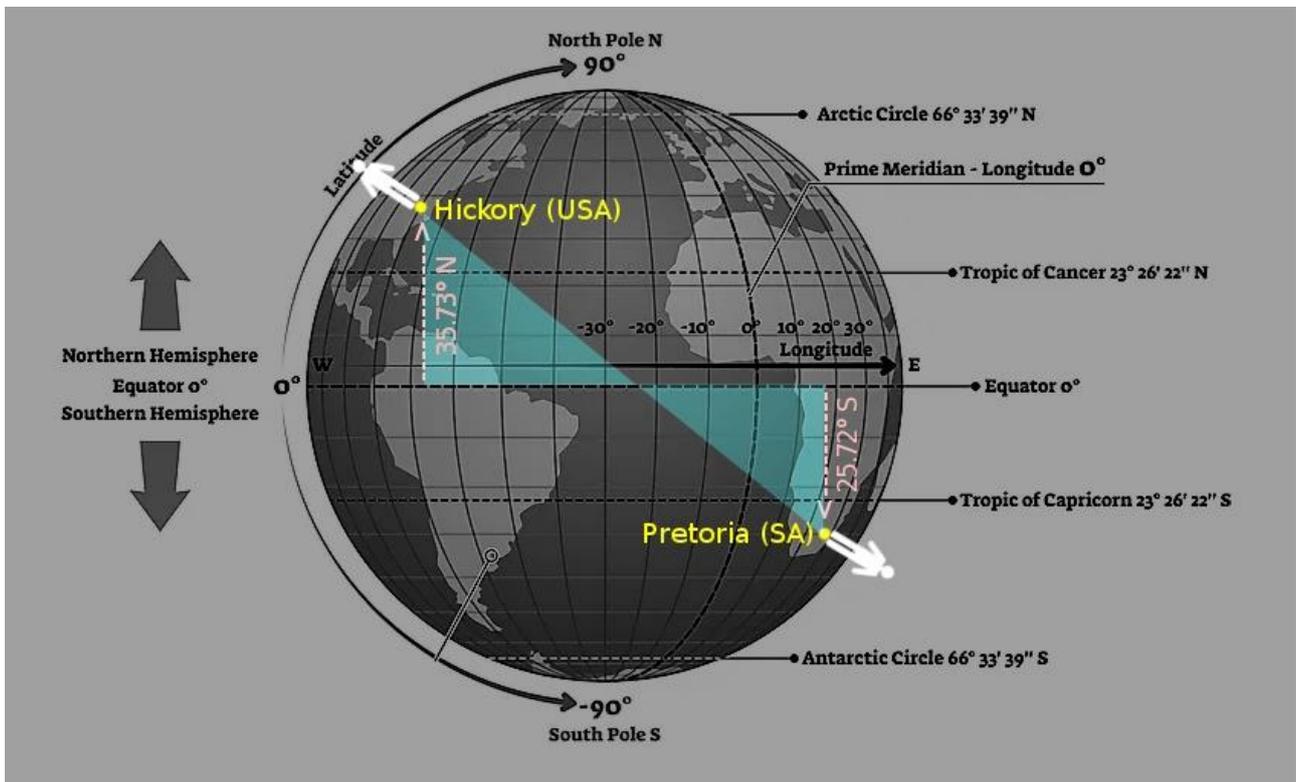
The original photos snapped by astrophotographers located on 'either side' of the Earth, with a red dot indicating the famous "Tycho crater" for the sake of clarity and ease of orientation.

Left: photo by "Rustin788" taken on the night of 27 February 2013. Hickory, North Carolina (USA). 35.73°N, 81.34°W.

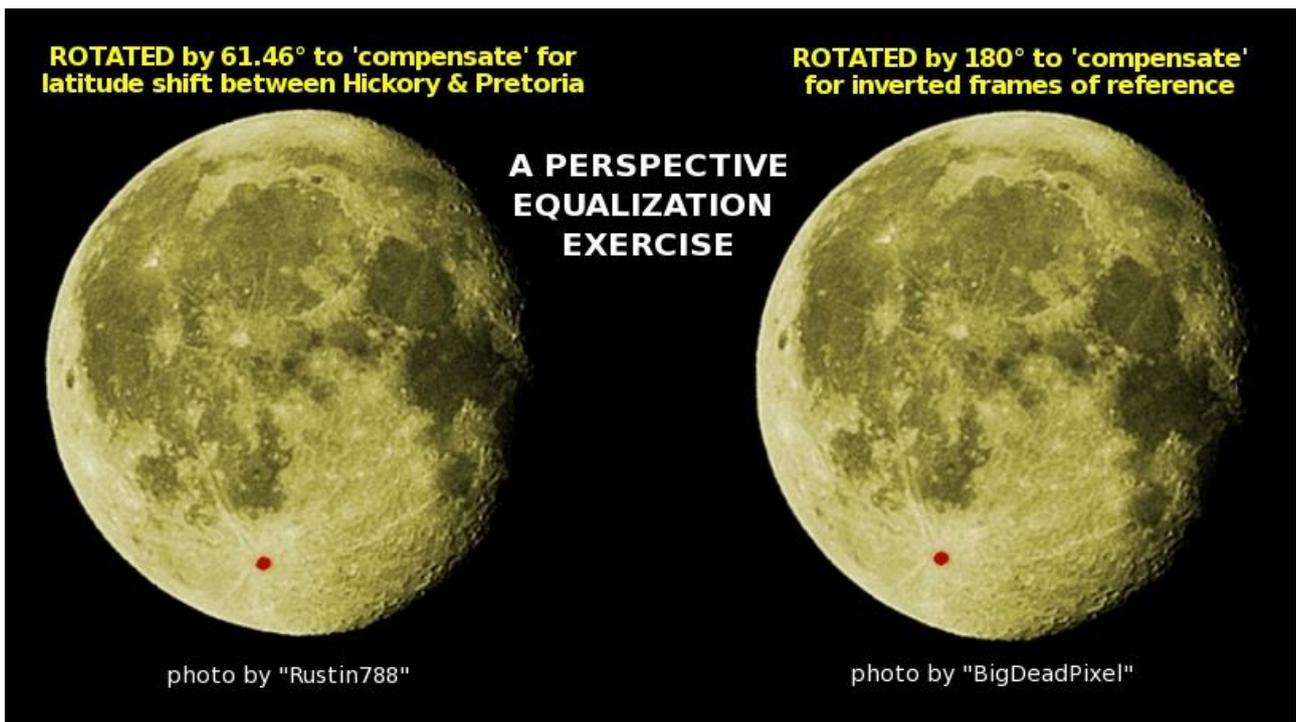
Right: photo by "BigDeadPixel" taken on the night of 27 February 2013. Pretoria (South Africa). 25.7256°S, 28.2439°E.

Now, the first question you might ask is: "Since the two photographers were located at 'either side' of Earth, why aren't the two photos tilted at 180°?"

Well, this is when we need to consider and factor into the 'perspective equation' the different latitudes of the two locations, as illustrated below:



In other words, to ‘equalize’ the perspectives of these two Moon photos, we need to take into account both the 180° inverted angles or earthly frames of reference of the two photographers and the angular width between the latitudes of their earthly locations which amounts to: $35.73^{\circ} + 25.7256^{\circ} = 61.4556^{\circ}$



As you can see, as we judiciously ‘compensate’ for the two photographers’ locations, we may say that they actually snapped near-identical pictures of our Moon, only slightly displaced laterally due to the longitudinal difference between their frames of reference in the USA and in South Africa (81.34°W versus 28.2439°E).

You might now ask the one-million-dollar question: “Can the Tychosium 3D simulator actually visualize precisely why these two photos show the angles/orientations of our Moon’s surface features just as they do?”

Yes indeed:

