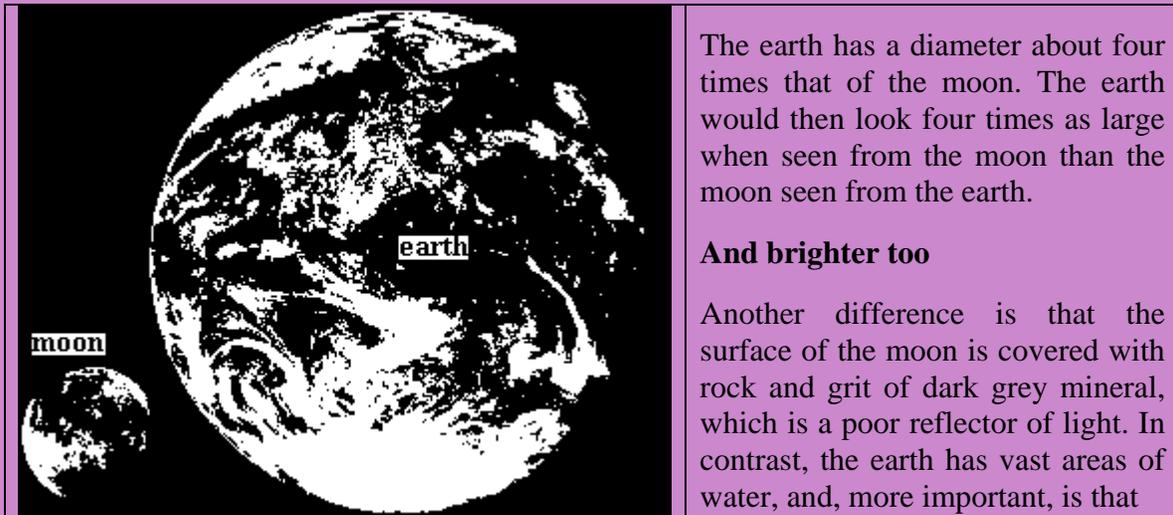
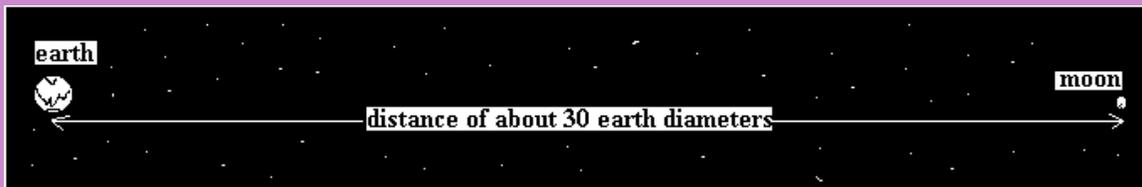


# The view from the moon

The great difference in the night sky as seen from the moon would be the view of the earth in the lunar sky, says S.Ananthanarayanan.

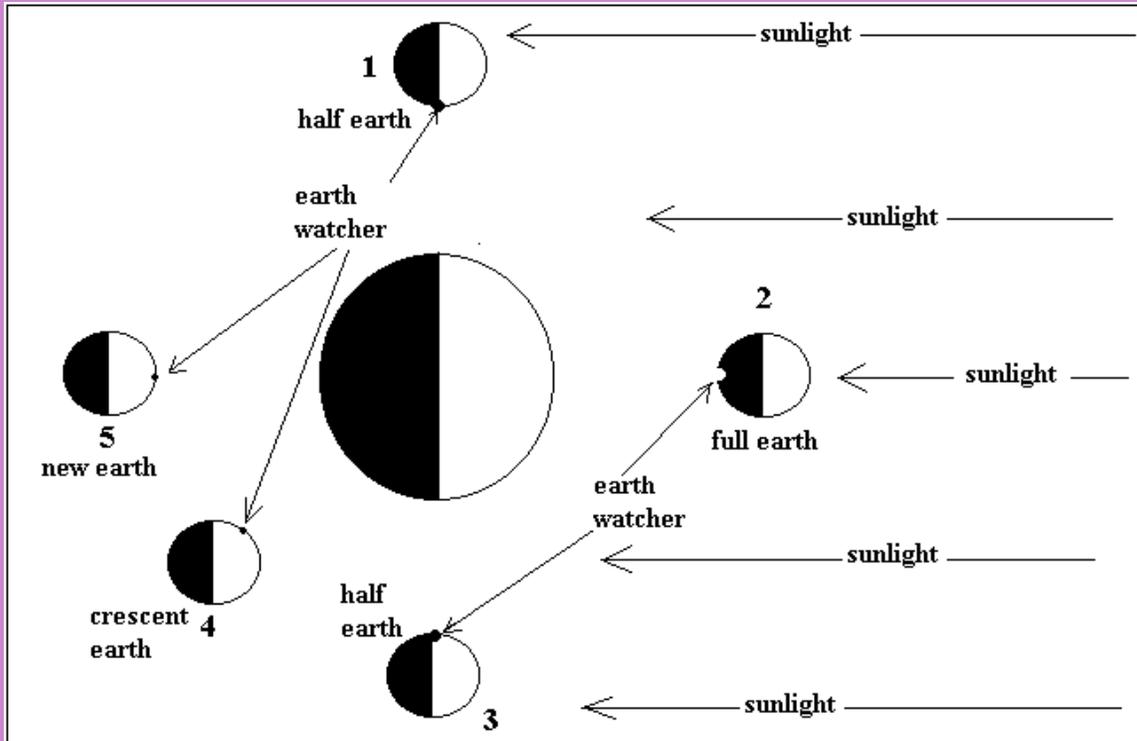


the earth is nearly wholly covered with highly reflective clouds. The earth is thus about three times as reflective as the moon, in the visible range. Add to it being 16 times more in area and the earth ends up being over forty times more visually bright than the moon when seen from the earth. The view of the 'full earth' from the moon could be spectacular!



## And the view lasts

The earth is visible from the moon during the lunar night. In the day the light of the sun blanks out the reflected light from the earth, just like it does to the moon, on the earth. But the moon goes round on its axis only once every time it goes around the earth, in the lunar month. So the lunar night lasts a whole 15 earth days!



When the moon is in position '1', in the picture, the 'earth watcher' on the moon, at the spot shown, is just at nightfall and he sees a 'half earth' directly overhead. Because the moon goes round on its axis at the same rate as it goes around the earth, the same side of the moon always faces the earth and only this side can see the spectacular sight. As the moon progresses, over the next week, to position '2', the earth, always directly overhead, grows (waxes) into a 'full earth'.

In the next week it wanes again to a 'half earth', in position '3', when it is also the end of the night and sunrise, on the moon. In positions '4' and '5', when the earth watcher should see a 'crescent earth' and a 'new earth', the watcher does not actually see anything because it is day on the moon and it is too bright, and hot, to be outdoors!

And all through, the earth is spinning round and showing different shades of blues, greens and whites or greys, of the oceans, the continents and different cloud formations.

### Warm days and cool nights

During the night, which lasts half a lunar month, the earth watcher also has a view of the same stars as seen from the earth, but only much better. The view is better because the moon has no atmosphere to speak of. There is hence little absorption or scattering of light and the stars are all brighter than when seen from the earth. One can imagine that the night sky is really something on the moon!

The trouble is that the lunar astronomer will have to wrap up warmly as soon as it is nightfall. We know that the earth's atmosphere absorbs the sun's heat during the day and

then keeps us warm during the night. On the moon, there is no atmosphere and there is no natural blanket to conserve heat for the night. The temperature drops, within minutes of sunset, down to  $-173^{\circ}\text{C}$ , and that is colder than anywhere on earth!

And in the day, for the same reason, the temperature rises to above  $130^{\circ}\text{C}$ . It is a good thing there is nothing to see during the day, because it really would be uncomfortable!

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