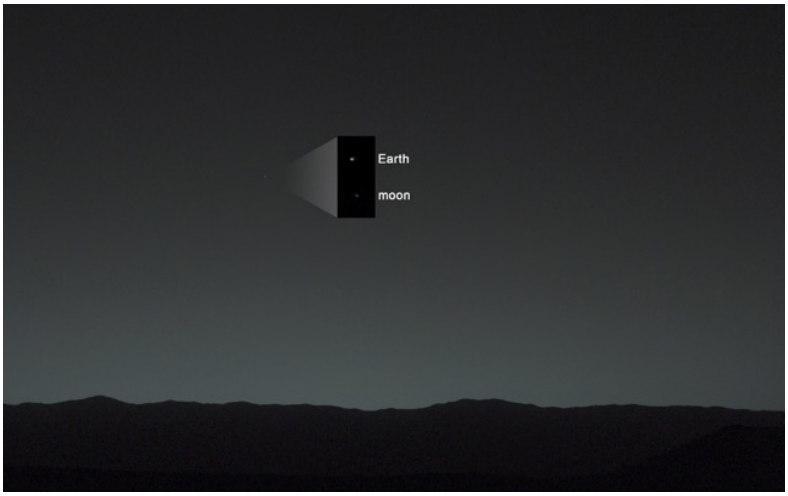
Star Guide: Star gazing from Venus, Mars

By Tony Berendsen

On a dark cloudless night away from artificial light hundreds to thousands of stars are visible in the Earth’s sky. Our atmosphere is mostly transparent to visible light so we see our sun’s distant neighbors sparkling above. For millennia humanity have written stories inspired by their groupings, we have wondered about them and their beginnings, they have guided us and many other creatures who roam our planet, our curiosity of the cosmos was born from our visual sense to gaze upon them.

Will the stars always be visible to us? What about our sister planets, would the night sky look the same from Venus or Mars?

If we went star gazing on Mars, the constellations would look the same as from Earth, but the North star wouldn’t be the pole star. Mars is tilted on its axis a couple of degrees more than the Earth so the north celestial pole would be near the constellation Cygnus, not Polaris, or any individual bright star. Also, the one large moon we see on Earth would be replaced by two small moons; Phobos and Deimos. Neither are very large and both orbit faster than our moon since they are so close Mars, in fact Phobos takes a mere 7½ hours to orbit, so a star gazer could see Phobos cross the Martian sky twice in one night.



An image of the earth and the moon by the Curiosity Rover.

For an earthling visiting Mars a spectacular difference in the view from Earth would be to see the Earth and the moon in the night sky. The Earth would be an inferior planet, showing phases like Mercury and Venus, and would look like a bright star in the sky, with a small dim star-like object (the moon) orbiting around it every month.

On Venus, star gazing would be impossible from the surface. At one time Venus may have had a transparent atmosphere, but today due to global warming, the clouds never clear to show the stars. Venus is much closer to the sun than the Earth, and long ago the planet experienced a disastrous climate change fueled by its close proximity to the sun, boiling away its oceans, capturing the radiation of the sun with the carbon dioxide in its atmosphere, raising its surface temperature to become hot enough to melt lead.

If a star gazer could go back in time, when the atmosphere of Venus may have been clear, imagine what a wonderful view it would have been to see the Earth and moon in the distance orbiting the sun with the Milky Way as a back drop.

Humans have a very short lifetime compared to the cosmos. We may live a century, but the cosmos lives so long we call it infinity. A billion years of time for us may be only a second

in cosmic time. If we traveled forward a second or two in cosmic time, our view of the stars from the surface of the Earth would be gone. The increasing heat from our evolving sun would have boiled our oceans changing our atmosphere from transparent and clear, to opaque and cloudy, bringing an end our existence in the habitable zone of our solar system and our view into space from the surface of the Earth.

So, our long term future of star gazing depends on the tool making ability of our species, and our success exploring and traveling our galaxy in search of other earths. But for now, a star gazer on Earth has a wonderful view of the cosmos, including Mars and Venus in the southwestern sky tonight. So, why not breakout your **SkyPortal app**, binoculars, or telescope, and enjoy the awesome view we have from the Earth.

Happy New Year!

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