VISIBLE LIGHT SENSITIVITY DUE TO THE SHAPE OF THE ORBIT

EMAD Y. MOAWAD

A graduate Engineer at Ain Shams University, Cairo, Egypt.

https://orcid.org/0000-0003-0248-2050

emadmoawad@hotmail.com

Abstract

While the ability of the solar probes to capture events using visible light is evident, the planetary probes fail to capture the same images in nearly the same conditions and instead capture infrared and ultraviolet images. The planetary probe orbits the planet which in turn revolves around the Sun. Then, the planetary probe orbits the Sun as well. Accordingly, to visualize each of the planetary probe, the planet and the Sun in the same inertial reference frame, the path of the planetary probe around the planet can not be predicted as an elliptical path because the planet is not static but orbiting the Sun.

In addition, the motion of the planetary probe must be taken into account with respect to both the planet and the Sun. And that is in a wavy path whose axis is the elliptical path of the planet around the Sun. Along the wavy path, the planetary probe wraps around the planet from top to bottom of its surface and vice versa, forming a vortex around it, compressing towards the direction of the Sun's rotation around the Milky Way, and rarefaction in the opposite direction away from the Sun, at a speed equals to the planet's speed along its orbit around the Sun.While the orbit of the solar probe in the same inertial frame of reference of the planetary probe and the planet, is predicted an elliptical path around the Sun, which is stationary with respect to the planet and the two probes.

Accordingly, the solar probe travels along its elliptical path around the sun perpendicular to sunlight providing the ideal location for photography. While, the planetary probe travels on its wavy path in the

direction of sunlight, which exposes the photography to scattering, blurring and distortion. Moreover, due to the difference in the shapes of the tracks of the two probes, the relative velocities between the Sun and both the planetary probe and the solar probe are in two different directions. Therefore, the difference in the directions of the relative velocities of the two probes with respect to the Sun is also present when both probes capture the same event and thus the wavelengths detected for its emission by the two probes as well.

Accordingly, the difference in the shape of the two sensor paths around the Sun is responsible for the difference in the sensitivity of the two probes to visible light.