

# VISIBLE LIGHT SENSITIVITY DUE TO THE SHAPE OF THE ORBIT

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## MOTIVATION

THE ABILITY OF THE SOLAR PROBES TO CAPTURE IMAGES USING VISIBLE LIGHT IS EVIDENT. WHILE, THE PLANETARY PROBES FAIL TO CAPTURE SAME IMAGES NEARLY IN THE SAME CONDITIONS AND INSTEAD CAPTURE INFRARED AND ULTRAVIOLET IMAGES.

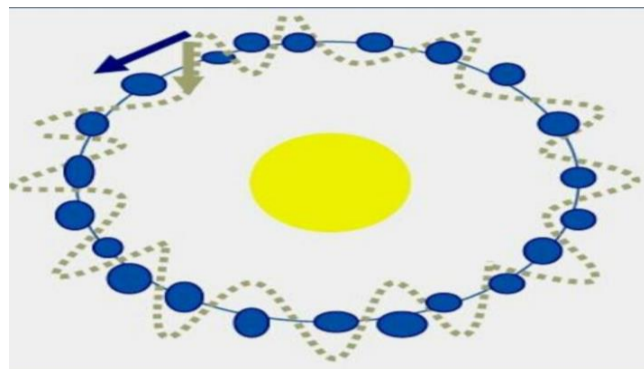
## OBJECTIVE

AN EXPLANATION IS REQUIRED FOR THAT VARIATION IN SENSITIVITY TO THE VISIBLE LIGHT BETWEEN THE TWO TYPES OF PROBES.

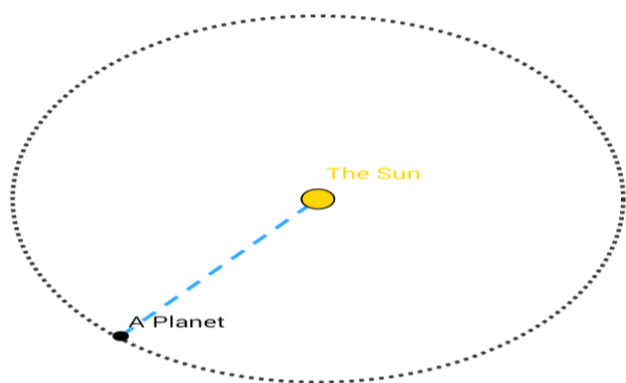
## METHOD

PREDICTING THE PATHS OF BOTH TYPES OF PROBES IN ONE INERTIAL FRAME OF REFERENCE TO DETERMINE THE DIFFERENCE IN THEIR ORIENTATION IF ANY. AS THE PATHS OF BOTH TYPES OF PROBES ARE PREDICTED ELLIPSIS EACH SEPARATELY, ONLY IN TWO DIFFERENT INERTIAL REFERENCE FRAMES.

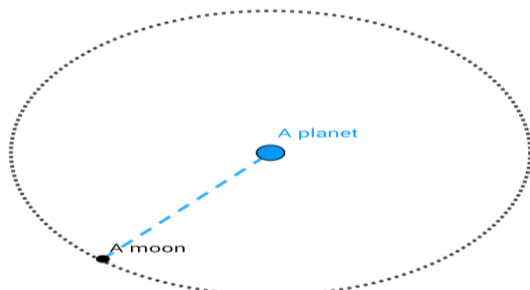
THUS, THE TWO TRACKS CAN BE VISUALIZED TOGETHER IN ONE INERTIAL REFERENCE FRAME IN WHICH THE MOON TRAVELS ALONG WAVY PATH WHOSE AXIS IS THE ELLIPTICAL PATH OF THE PLANET AROUND THE SUN [1,2].



AND THE SAME PATHS FOR THE PLANETARY AND SOLAR PROBES ARE PREDICTED AS WELL.

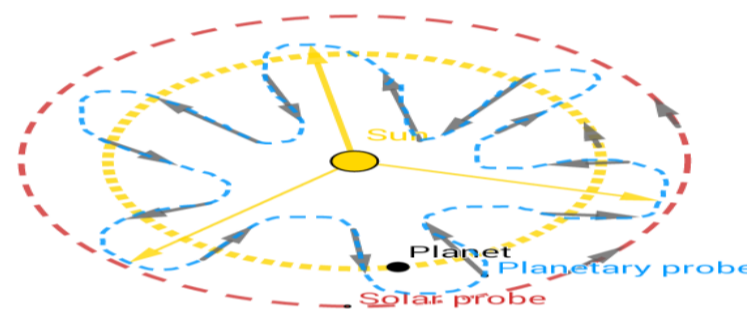
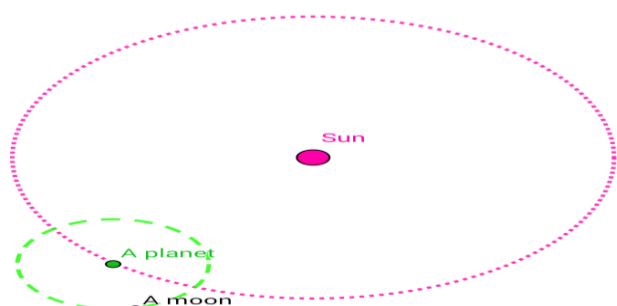


A SOLAR ORBIT AS PREDICTED IN ASTRODYNAMICS OR CELESTIAL MECHANICS.

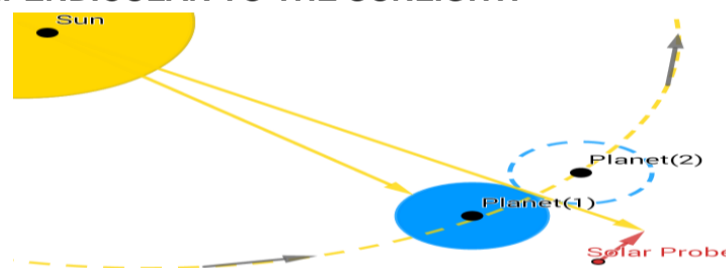


A PLANETARY ORBIT AS PREDICTED IN ASTRODYNAMICS OR CELESTIAL MECHANICS.

BUT THE TWO PATHS ARE NOT ACCEPTED TOGETHER IN ONE INERTIAL REFERENCE FRAME AS SHOWN BELOW. AS THIS PERCEPTION CONTRADICTS THE GEOMETRIC DEFINITION OF THE ELLIPTICAL PATH THAT TRACED BY EQUIDISTANT POINTS FROM A FIXED POINT, WHICH IS NOT AVAILABLE AS THE MOON REVOLVES AROUND THE PLANET WHICH IN TURN REVOLVES AROUND THE SUN.



THUS, THE MOVEMENT OF SOLAR PROBES BEHIND THE PLANETS DURING A SOLAR ECLIPSE IS PERPENDICULAR TO THE SUNLIGHT.



WHILE, THE MOVEMENT OF PLANETARY PROBES BEHIND THE PLANETS DURING A SOLAR ECLIPSE IS IN THE DIRECTION OF THE SUNLIGHT.



MOREOVER, THIS DIFFERENCE IN THE RELATIVE VELOCITY DIRECTIONS OF BOTH PROBES WITH RESPECT TO THE SUN IS ALSO PRESENT WHEN BOTH PROBES CAPTURE THE SAME EVENT AND HENCE THE DETECTED WAVELENGTHS OF ITS EMISSION BY THE TWO PROBES AS WELL. THESE ARE THE REASONS FOR THE VARIATION IN SENSITIVITY TO VISIBLE LIGHT BETWEEN THE TWO TYPES OF PROBES.

## References

1. MOAWAD EY. THEORY OF THE RELATIVE IMAGE. J SPACE EXPLORATION. 2017; 6(2):126.
2. MOAWAD EY. THE MECHANISM OF THE GRAVITATIONAL FORCE AND THE BALANCE OF THE UNIVERSE. INT J PHYS STUD RES. 2018;1(1): 1-5. doi: 10.18689/ijpsr-1000101