

PARKER SOLAR PROBE OFFERS AN ADDITIONAL EXPERIMENTAL PROOF FOR THEORY OF THE RELATIVE IMAGE

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MOTIVATION

THE PARKER SOLAR PROBE (PSP) IS A NASA SPACE PROBE LAUNCHED IN 2018. ON JULY 11, 2020. THE ONBOARD WIDE-FIELD IMAGER FOR PSP, OR WISPR, CAPTURED A STRIKING WHITE AND BLACK IMAGE OF THE POSTERIOR SIDE OF VENUS DURING A SOLAR ECLIPSE FROM 7,693 MILES AWAY. ON THE OTHER HAND, THE AKATSUKI PROBE IS A JAPANESE (JAXA) SPACE PROBE HAS SUCCEEDED TO ORBIT VENUS SINCE 2015, THE ONBOARD LIGHTNING AND AIRGLOW CAMERA, LAC, HAS NOT PRODUCED AN IMAGE FOR VENUS YET.

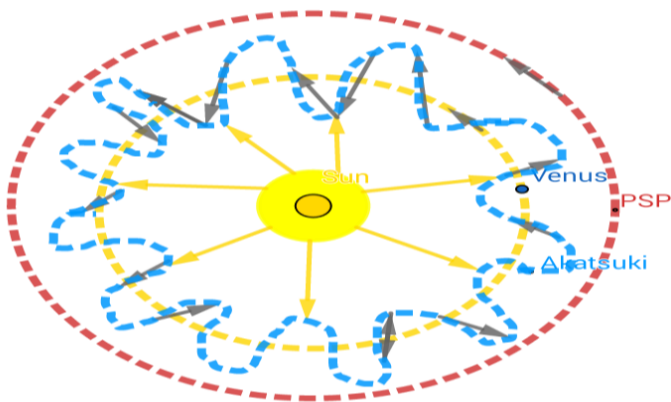
OBJECTIVE

AN EXPLANATION IS REQUIRED FOR THE ABILITY OF WISPR AND THE INABILITY OF LAC TO CAPTURE IMAGE OF THE POSTERIOR SIDE OF VENUS DURING A SOLAR ECLIPSE USING THE VISIBLE LIGHT, IN THE SAME CIRCUMSTANCES.

METHOD

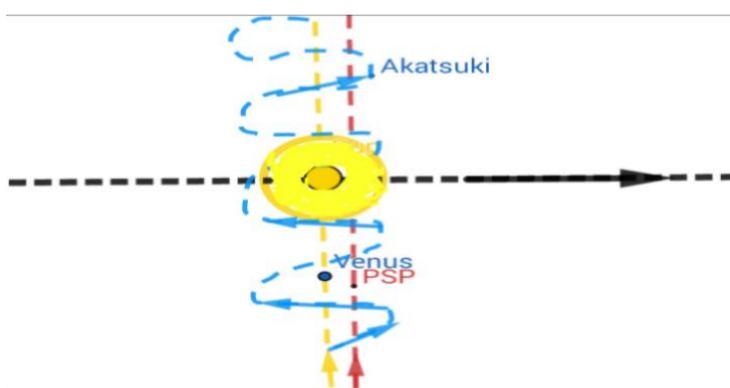
THEORY OF THE RELATIVE IMAGE HAS VERIFIED A FUNDAMENTAL DIFFERENCE BETWEEN THE PATHS OF THE TWO PROBES;PSP REVOLVES AROUND THE SUN, WHILE AKATSUKI REVOLVES AROUND VENUS WHICH IN TURN REVOLVES AROUND THE SUN.

(ELEVATION VIEW)



THUS, AKATSUKI TRAVELS ALONG A WAVY PATH (BLUE PATH), WHOSE AXIS IS THE ELLIPTICAL PATH (YELLOW) OF VENUS AROUND THE SUN, IN THE FORM OF A VORTEX AROUND VENUS (AS SHOWN IN THE SIDE VIEW) , WHILE PSP TRAVELS ALONG AN ELLIPTICAL PATH (RED) PARALLEL TO THAT OF VENUS (YELLOW).

(SIDE VIEW)

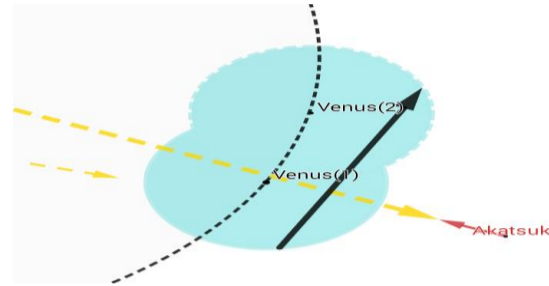


AKATSUKI MOVES ALONG A WAVY PATH CURVING AROUND VENUS IN THE FORM OF A VORTEX (DOTTED BLUE), WHOSE AXIS IS THE ELLIPTICAL PATH OF VENUS AROUND THE SUN (DOTTED YELLOW), TOWARDS AND AGAINST THE DIRECTION OF THE ROTATION OF THE SUN AROUND THE MILKY-WAY (DOTTED BLACK).

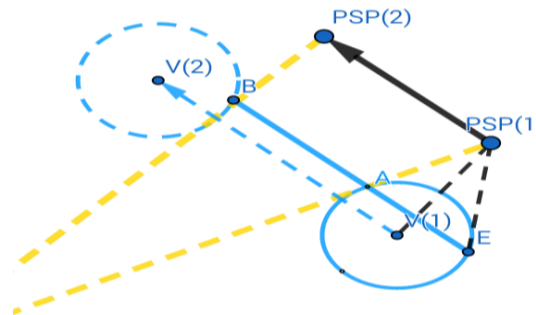
WHILE PSP MOVES ALONG AN ELLIPTICAL PATH (DOTTED RED) PARALLEL TO THAT OF VENUS AROUND THE SUN, PERPENDICULAR TO THE DIRECTION OF THE ROTATION OF THE SUN AROUND THE MILKY-WAY.

RESULTS AND CONCLUSION

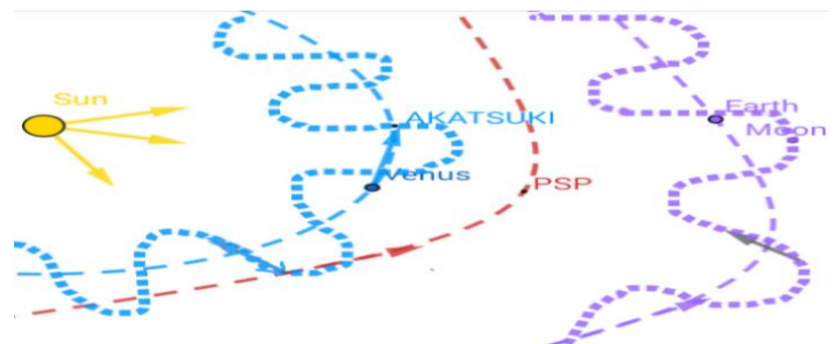
THUS, DURING THE SOLAR ECLIPSE AKATSUKI MOVES BEHIND VENUS TOWARDS THE SUN EXPOSING THE CAPTURED IMAGES BY LAC TO SCATTERING, BLURRING AND DISTORTION UNTIL CURVING AROUND THE APPARENT DISK OF THE PLANET TO FACE THE SUN RAYS AFTERWARDS.



WHILE IN THE SAME CONDITIONS (BEHIND VENUS DURING A SOLAR ECLIPSE) , THE PSP TRAVELS PARALLEL TO THE MOVEMENT OF VENUS AROUND THE SUN, PERPENDICULAR TO THE DIRECTION OF THE SUN RAYS, PROVIDING FOR WISPR THE IDEAL LOCATION TO CAPTURE VENUS, UNTIL THE APPARENT DISK OF VENUS(AE) COVERING A DISTANCE (EB), RECEDING THE PSP TO EXPOSE IT TO THE SUN RAYS AFTERWARDS.



IN ADDITION, THE WAVELENGTH OF THE DETECTED IMAGE OF VENUS BY EITHER OF WISPR OR LAC IS DIRECTLY PROPORTIONAL TO THE RELATIVE VELOCITY OF EACH OF PSP AND AKATSUKI WITH RESPECT TO VENUS. AND AS VENUS IS DETECTED BY THE NAKED EYE FROM THE EARTH AND THE MOON.



THUS , DUE TO THE LOWER RELATIVE VELOCITY BETWEEN AKATSUKI AND VENUS COMPARED TO THAT BETWEEN VENUS AND THE MOON, A MAJOR BLUE SHIFT OCCURS TO THE DETECTED WAVELENGTHS OF VENUS SPECTRUM BY LAC AND BECOMES UNABLE TO PICK UP VENUS. AND CONVERSELY, DUE TO THE HIGHER RELATIVE VELOCITY BETWEEN PSP AND VENUS COMPARED TO THAT BETWEEN VENUS AND EARTH, A MAJOR RED SHIFT OCCURS TO THE DETECTED WAVELENGTHS OF VENUS SPECTRUM BY WISPR AND BECOMES ABLE TO PICK UP VENUS IN THE FAR-RED LIGHT JUST BEFORE THE INFRARED RANGE IN WHITE AND BLACK IMAGES.

ACKNOWLEDGEMENT

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