

A model based prediction of Venus cloud discontinuity generation during Oct-Dec 2026

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Abstract

This paper presents a model-based prediction that cloud discontinuities will form in Venus’s atmosphere between 17th October and 28th December 2026. The prediction follows from a hypothesized fifth force of nature that appears as interplanetary accelerations, with the strongest effect on Venus arising from Mars. The force is expressed through the zonal (u-component) acceleration $U(\text{Mars})$ which is non-zero when the Mars–Venus distance is smaller than both the Mars–Sun and Mars–Earth distances. Long-term averages of $U(\text{Mars})$ are retrograde and therefore aligned with Venus’s super-rotating zonal winds; overlays of $U(\text{Mars})$ on multi-decade wind-speed records from Venus Express and Akatsuki show that intervals of elevated retrograde forcing coincide with increases in wind speed, while prograde intervals coincide with decreases. Cloud-discontinuity events recorded by Akatsuki and ground-based observers likewise cluster during or near “Mars-in-range” windows. The model attributes these features to the force acting on a spherical cap of Venus whose mass equals that of Mars, thereby generating a standing wave and secondary waves that circle the planet on roughly five-day timescales. After a prior forecast for the October 2025–March 2026 window was followed by the reappearance of discontinuities in April 2026, the same criterion now identifies the October–December 2026 interval as the next active period. Venus reaches inferior conjunction on 24 October 2026, so high-resolution imaging suitable for testing the prediction becomes available from late November.

Introduction

I’ve previously hypothesized that there exists a fifth force of nature which can be observed as interplanetary forces.¹ Ongoing evidence of this extra force is recorded on my blog.² With regard to the planet Venus, the largest effect of this force comes from the planet Mars. See figure 8 for a comparison with Earth and Mercury. We anticipate that this force manifests as disturbances in Venus’s atmosphere where the u -component of acceleration has a magnitude of

$$U(\text{Mars}) = -C \frac{\sin(\delta)T}{M} \hat{M}_{NP} \cdot (\hat{V}_{NP} \times \hat{M}_V)$$

when Mars-Venus distance is less than both Mars-Sun and Mars-Earth distances; C is some positive constant; δ is Venus’s latitude from Mars; T and M are Mars’ sidereal rotation period and mass, respectively; and $\hat{M}_{NP}$, $\hat{V}_{NP}$, and $\hat{M}_V$ are unit vectors representing Mars’ north celestial pole, Venus’s north celestial pole, and Mars’ position from Venus, respectively.

Wind velocity on Venus

Figure 1, adapted from Sánchez-Lavega, Agustín and Irwin, Patrick and García Muñoz, Antonio (2023) shows Venus's zonal wind velocities at different latitudes, based on cloud-tracking data collected at UV and infrared wavelengths (65-70 km and 60 km altitudes, respectively).³ The wind direction is westward at all latitudes with no appreciable differences between equatorial and mid-latitude velocities. This direction is in agreement with long-term value of $U(\text{Mars})$.

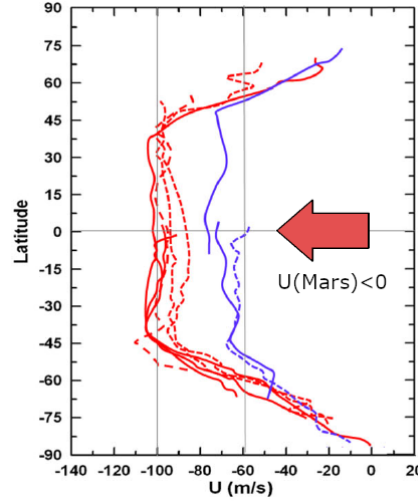


Figure 1: Meridional profiles of the zonal wind velocity on Venus. Adapted from Sánchez-Lavega et al, 2023, The Astronomy and Astrophysics Review. This data was gathered from multiple space missions, including Mariner 10, Pioneer-Venus, Galileo, and Venus Express. The red lines represent UV data, while the blue lines show infrared data. The red arrow represents the average long-term direction of U .

Figure 2 shows that over time, $U(\text{Mars})$ has a net negative value ($U(\text{Mars}) < 0$, pushing with Venus's prevailing wind). As well as being in agreement with our hypothesis, it may be the case that $U(\text{Mars})$ at least contributes towards the overall super-rotation of the planet's zonal winds.

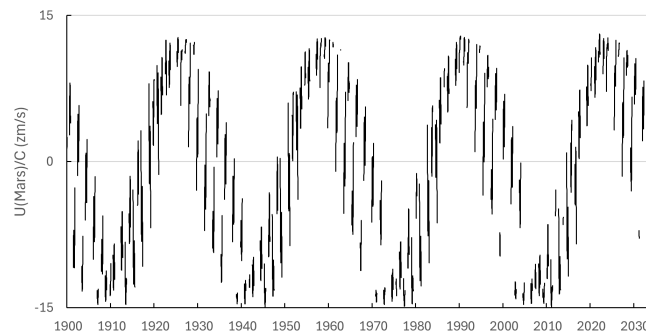


Figure 2: $U(\text{Mars})$ applied to Venus 1900-2035.

Figure 3 is adapted from figure 7a, Horinouchi et al (2024).⁴ The original figure compares

zonal winds from Akatsuki's 365-nm images (black dots) with data from the Venus Express (VEx) spacecraft (blue dots), specifically from VMC data. These winds are averaged over a local time (LT) range of 11–13 hours and between 24°S and 18°S in latitude, binned into 5-day intervals, and only include bins with valid data for 3 or more days.

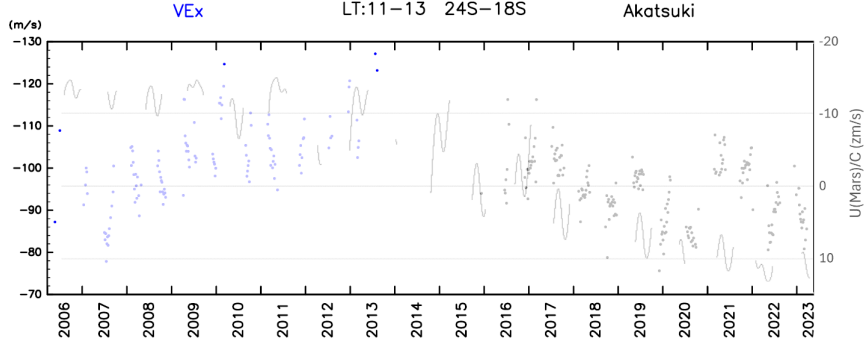


Figure 3: Comparison of Venus's zonal wind speed and U(Mars) during 2006-23.

Here, I've overlaid a plot of U(Mars) (continuous black lines). The period 2006-14 shows retrograde velocity boosts (pushing with the wind), which coincide with increasing wind speeds in the VEx data. From 2017 onwards, U(Mars) becomes increasingly positive (prograde, pushing against the wind with increasing strength). This coincides with a general decrease in wind speeds as shown in the Akatsuki data.

Figure 4 is adapted from figure 13, Peralta et al (2018).⁵ The original figure presents the decadal variation of zonal winds at the nightside lower clouds of Venus, spanning 38 years (1978 to 2017). The figure compares wind speed data obtained via different methods, such as cloud tracking and in situ measurements at altitudes of 50–60 km.

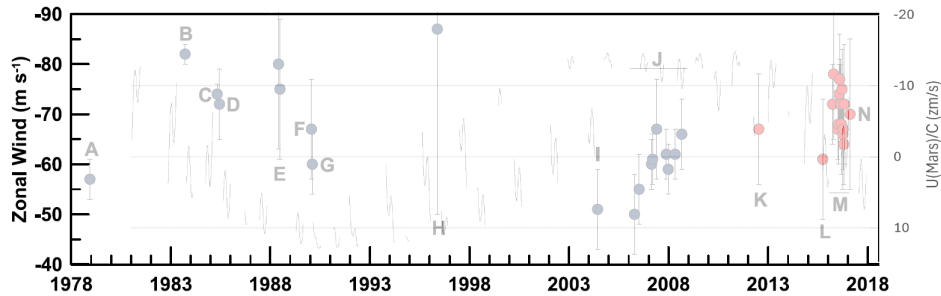


Figure 4: Comparison of Venus's zonal wind speed and U(Mars) during 1978-2018.

Again, I overlaid a plot of U(Mars) (continuous black lines). The period 1985-94 shows prograde velocity boosts (pushing against the wind), which coincide with a general decrease in wind speeds from 1985 to 1990.

Venus cloud discontinuity

Analysis shows many examples of cloud discontinuities coinciding with Venus being within range of Mars (see figure 9). It is hypothesized that Mars affects only the nearest spherical cap of

Venus that contains the same mass as Mars. This causes a standing wave, which in turn causes secondary waves that circle the planet every five days or so. Figure 5 shows the regions of Venus affected during the period from 7th December 2015 through 11th December 2015.

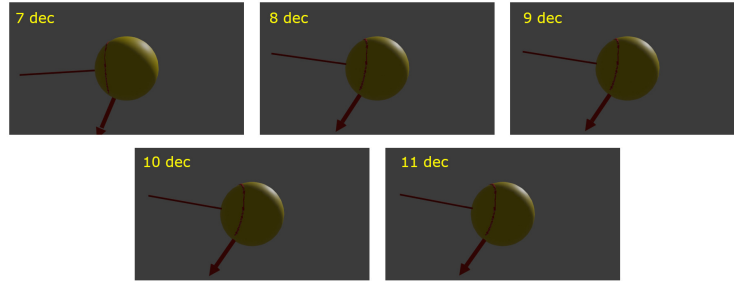


Figure 5: Mars' effect on Venus. As viewed by JAXA's Akatsuki spacecraft. Arrow shows the direction of the hypothesized force. Straight red line shows the direction of Mars. Red line on planet shows the spherical cap base.

During this period, JAXA's Akatsuki spacecraft identified a prominent feature as shown in figure 6.

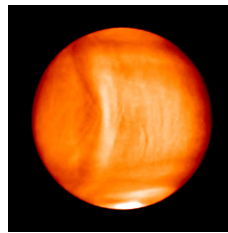


Figure 6: Standing wave on Venus in 2015.

Figure 7 shows the affected regions on Venus superimposed onto images taken by Akatsuki.

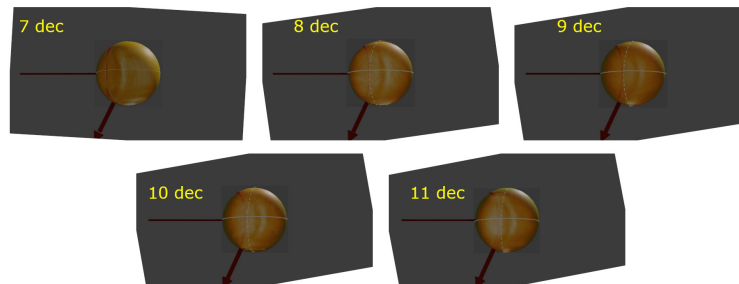


Figure 7: Comparison between Mars' effect on Venus and Akatsuki's images.

Figure 8 shows the relative strengths of the intermediary fields of Earth, Mars and Mercury acting on Venus. It's also worth noting that the fields from Earth and Mercury could also generate cloud discontinuities.

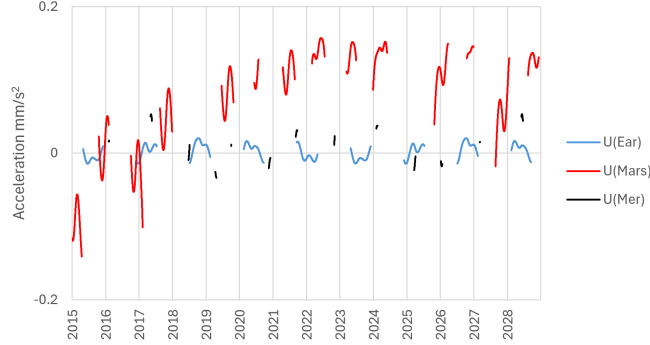


Figure 8: Mars, Earth and Mercury's effects on Venus 2015-28.

Mars in range: October 2025 –March 2026

I made public my prediction in August 2025 that there will be cloud discontinuities on Venus during this period.⁶ Venus passed through superior conjunction on 6th January 2026, so detailed images were not available until March. The first cloud discontinuity was recorded on 3rd April 2026, just 8 days after the window closed.^{7,8} This was followed by several other observations during the same month. The last time the feature was observed was August 2025.

Mars in range: October – December 2026 (current)

If my model is correct, then the intermediary force from Mars should affect the atmosphere of Venus from 17th October to 28th December 2026. This should generate new cloud discontinuities. Venus passes through inferior conjunction on 24th October 2026, so detailed images should be available from late November (see figure 10).

References

- ¹ Talbot, L. Exploring intermediary forces. a model based approach to addressing the hierarchy problem (2024). URL <https://doi.org/10.6084/m9.figshare.26195195.v1>.
- ² Talbot, L. Potential evidence in support of the existence of a fifth force of nature URL <https://ltresearchblog.com>.
- ³ Sánchez-Lavega, A., Irwin, P. & García Muñoz, A. Dynamics and clouds in planetary atmospheres from telescopic observations. *The Astronomy and Astrophysics Review* **31**, 5 (2023).
- ⁴ Horinouchi, T. *et al.* Long-term variability of mean winds and planetary-scale waves around venusian cloud top observed with akatsuki/uvi. *Journal of Geophysical Research: Planets* **129**, e2023JE008221 (2024).

- ⁵ Peralta, J. *et al.* Nightside winds at the lower clouds of venus with akatsuki/ir2: Longitudinal, local time, and decadal variations from comparison with previous measurements. *The Astrophysical Journal Supplement Series* **239**, 29 (2018).
- ⁶ Talbot, L. Predictions for venus cloud discontinuities, saturn zonal wind slow-down, and 3i/atlas non-gravitational effects (2025–2037) e2024GL109460 (2025). URL <https://doi.org/10.5281/zenodo.16929992>.
- ⁷ Sedrani, R. Venus 2026/04/03 (yyyy-mm-dd). ALPO-Japan planetary image archive (2026). URL <https://alpo-j.sakura.ne.jp/kk26/v260403z.htm>.
- ⁸ Cidadao, A. Venus mid-altitude clouds (ir imaging). ALPO-Japan planetary image archive (2026). URL <https://alpo-j.sakura.ne.jp/kk26/v260403r.htm>.

Figures

Dates	Non-zero U(Mars)	U(Mars) max strength*	Cloud discontinuity		Publication
			observations		
2015-Oct-18- 2016-Feb-05	yes	32	yes		Nature Geosci 10, 85–88 (2017)
2016-Feb-06- 2016-Oct-03			yes		Peralta, J., et al. Geophysical Research Letters, 47,11 (2020)
2016-Oct-04- 2017-Feb-11	yes	72	yes		J. Br. Astron. Assoc. 130, 4, 2020
2017-Feb-12- 2017-Aug-16					
2017-Aug-17- 2017-Dec-27	yes	56			
2017-Dec-28- 2019-Jun-17			yes		Peralta, J., et al. Geophysical Research Letters, 47,11 (2020)
2019-Jun-18- 2019-Oct-27	yes	76			
2019-Oct-28- 2020-Jun-09			yes		Atmosphere 2022, 13, 348
2020-Jun-10- 2020-Jul-27	yes	81			
2020-Jul-28- 2021-Apr-16					
2021-Apr-17- 2021-Aug-27	yes	89			
2021-Aug-28- 2022-Feb-28					
2022-Mar-01- 2022-Jul-18	yes	100	yes		Peralta, J., et al. A&A 672, L2 (2023)
2022-Jul-19- 2023-Mar-12					
2023-Mar-13- 2023-Jun-27	yes	97	yes		J. Br. Astron. Assoc. 135, 4, 2025
2023-Jun-28- 2023-Dec-27					
2023-Dec-28- 2024-May-29	yes	97	yes		Sedrani, R. Venus Image 2024/01/12. ALPO Japan.
2024-May-30- 2025-Oct-25			yes		Morrone, L. Venus Image 2024/07/17. ALPO Japan.
2025-Oct-26- 2026-Mar-26	yes	95			
2026-Mar-27- 2026-Oct-15			yes		Sedrani, R., Cidadao, A. Venus Image 2026/03/04. ALPO Japan.
2026-Oct-16- 2026-Dec-28	yes	93			
2026-Dec-29- 2027-Aug-23					
2027-Aug-24- 2028-Jan-21	yes	83			
* percentage of maximum strength over entire period 2015-28					

Figure 9: Cloud discontinuity 2015-28.

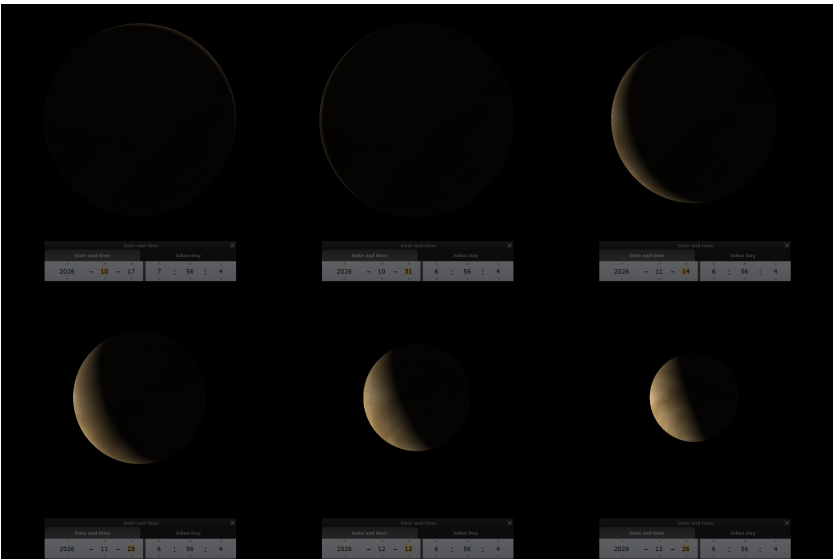


Figure 10: View of Venus from Earth during Oct-Dec 2026.