# Observations of the Venusian Atmosphere by IRTF Together with Akatsuki/JAXA

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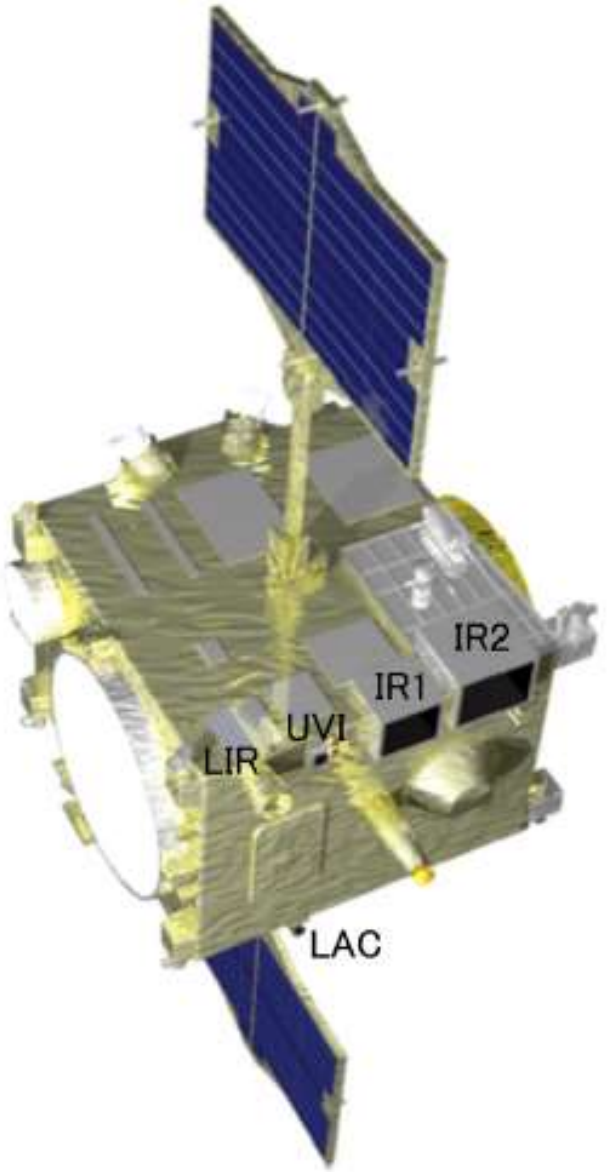
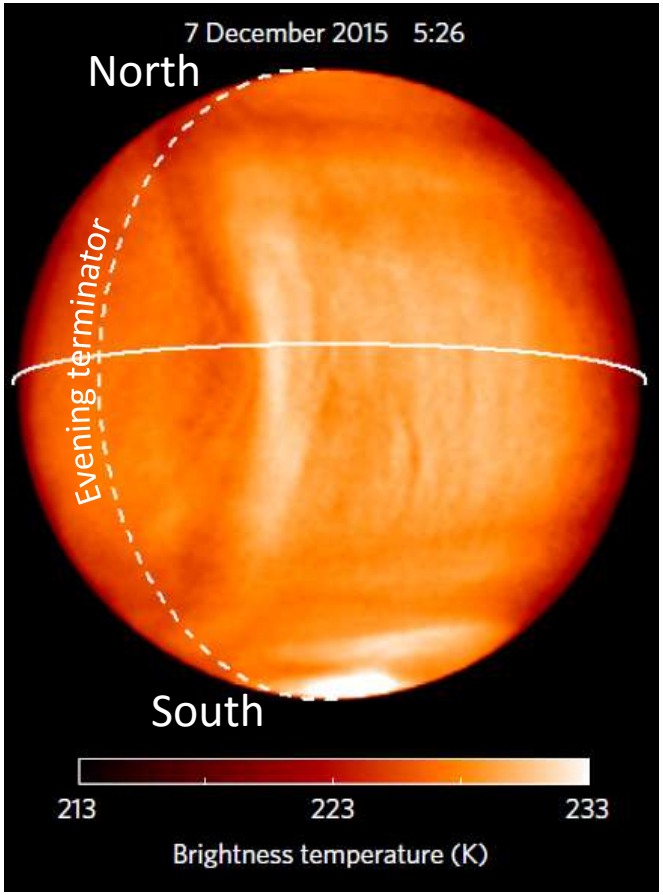
Thanks to T. Kouyama and H. Sagawa



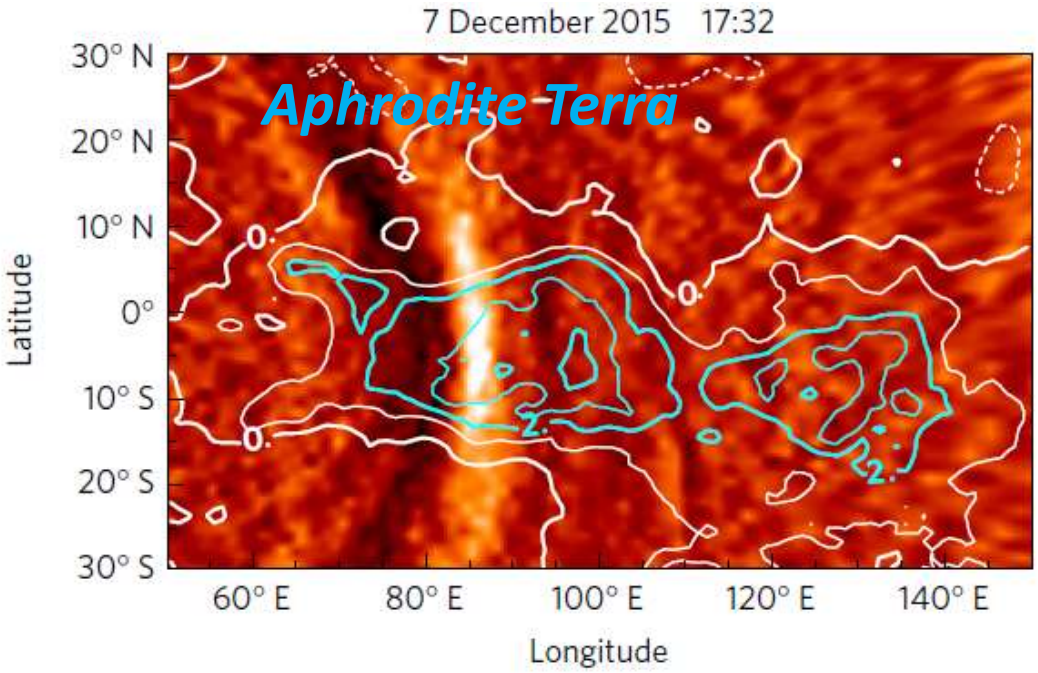

[Nakamura et al. 2016]

# Stationary wave feature

- Afternoon time, high surface elevation region




10 μm, LIR/Akatsuki [Fukuhara et al. 2017]



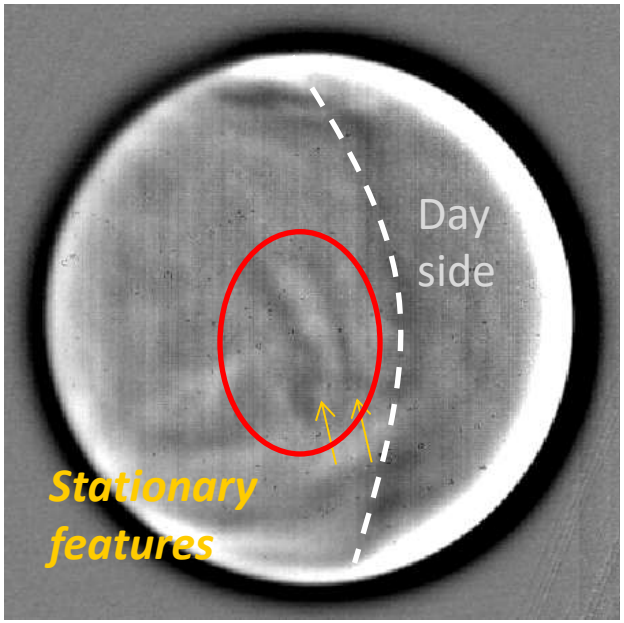

[Fukuhara et al. 2017]

# Stationary wave feature

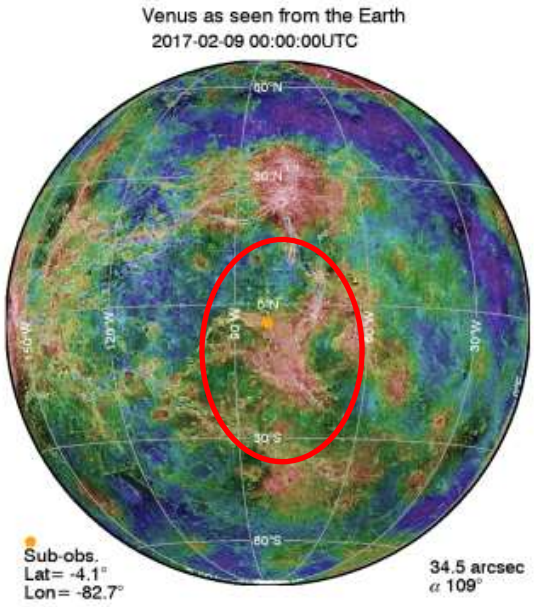
- Stationary features shown in SpeX

Feb 10 2017, High pass filter (5.1 μm)

Processed by T. Kouyama




SpeX guide [Lee et al.]

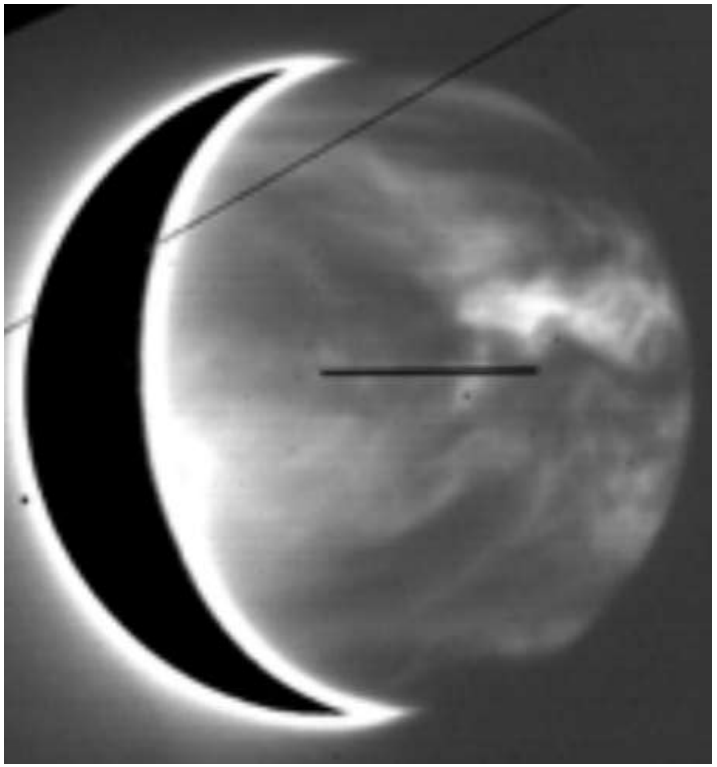


# Dynamical night side

- 2.3 μm atmospheric window of Venus atmosphere

IR2/Akatsuki, processed by Damia Bouic

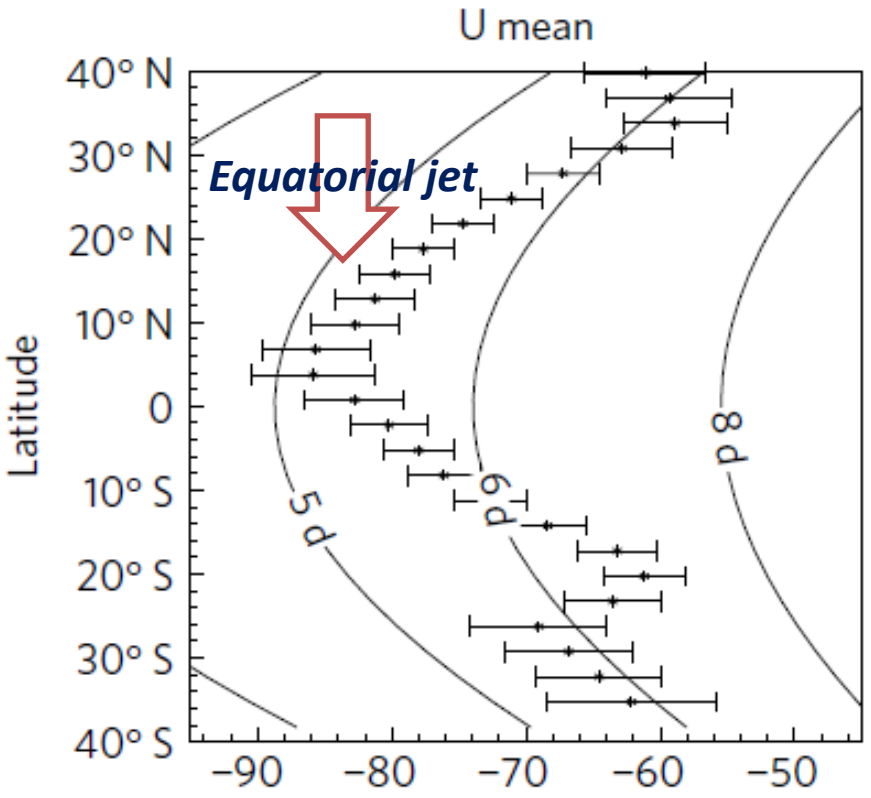
Apr-May 2017



SpeX guide [Young et al.]

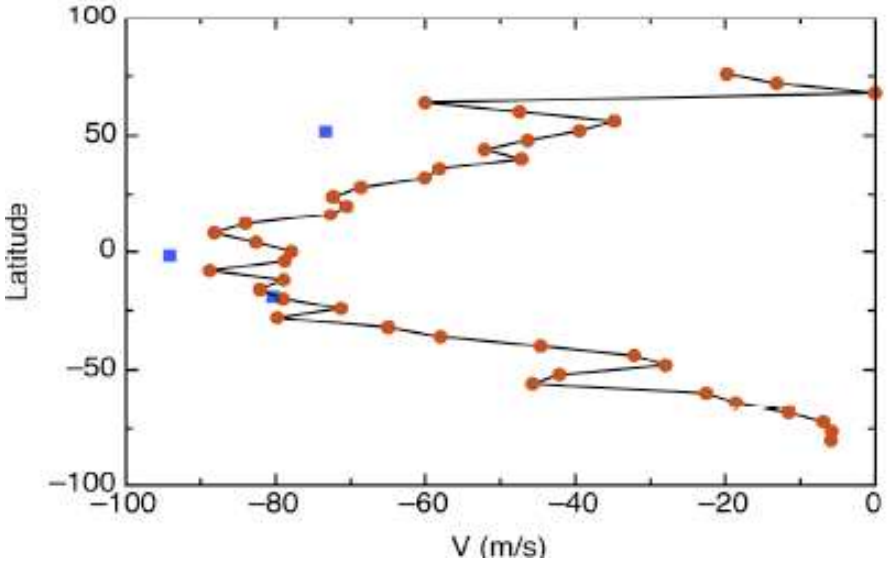
# Lower cloud level winds over nightside

- Discovery of equatorial jet




2.26 μm, IR2/Akatsuki [Horinouchi et al. 2017]

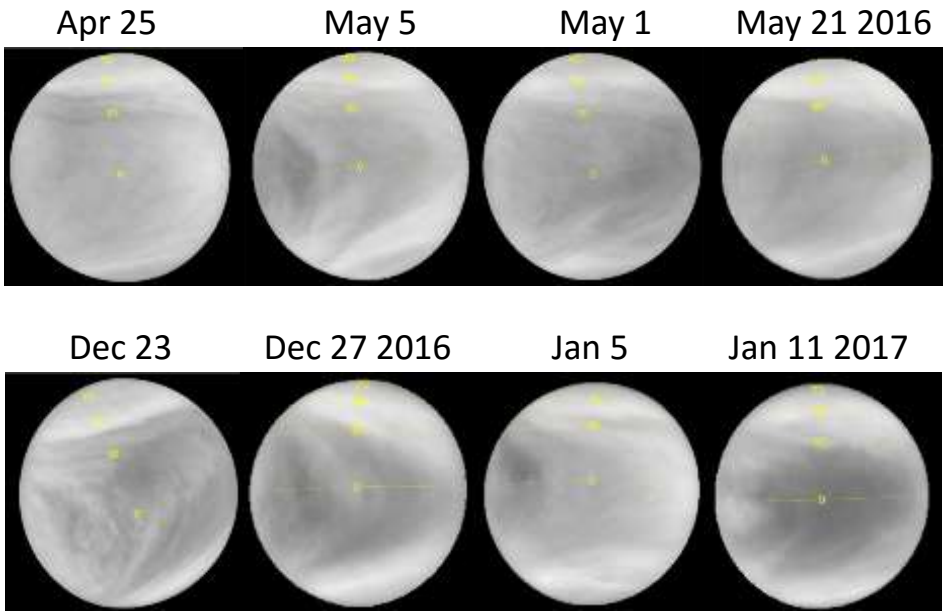
IRTF SpeX observation
on Sep 11 2007



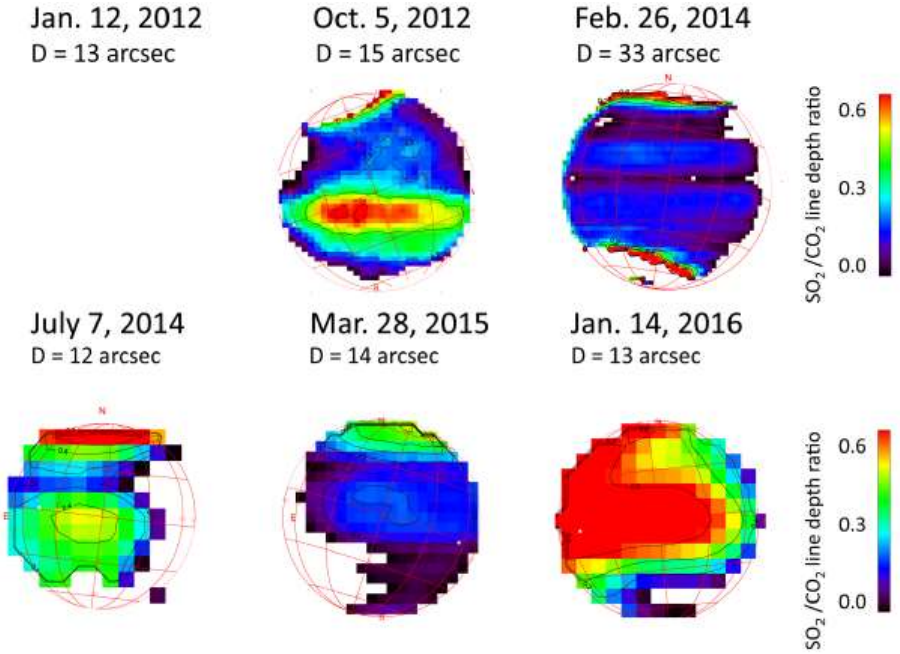

[Young et al.]

# $SO_2$, prime source of Venus' sulfuric acid clouds

- Observations at $SO_2$ bands in UV and IR




Albedo at ~20° phase angle
Dayside 0.283 µm, UVI/Akatsuki




19 µm, TEXES [Encrenaz et al. 2016]

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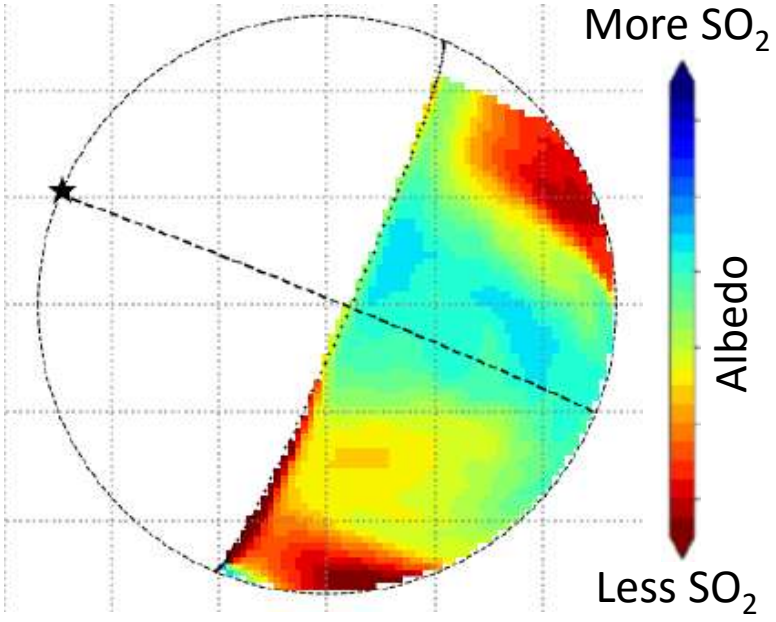
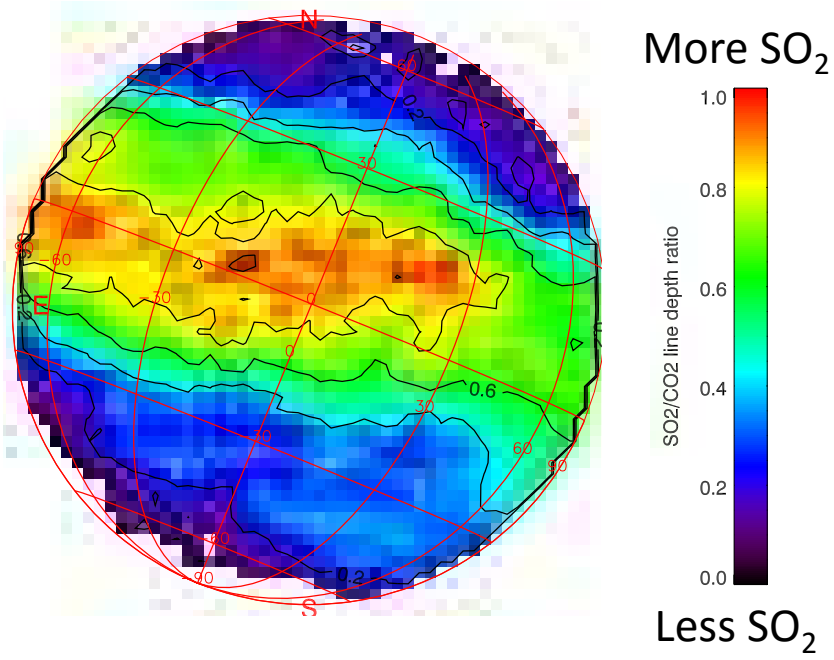
Jan 21 2017




0.283 µm UVI, Processed by H. Sagawa

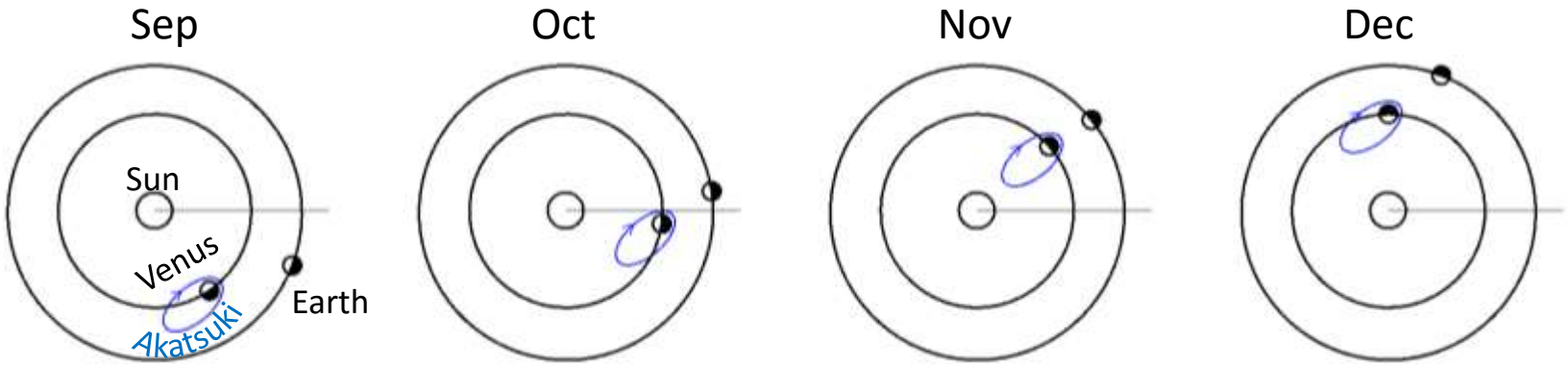
Jan 21 2017




TEXES [Encrenaz et al.]

# Venus observations in 2018-2020

- Around inferior conjunction (Sep-Dec 2018)
  Complementary observations between day and night sides



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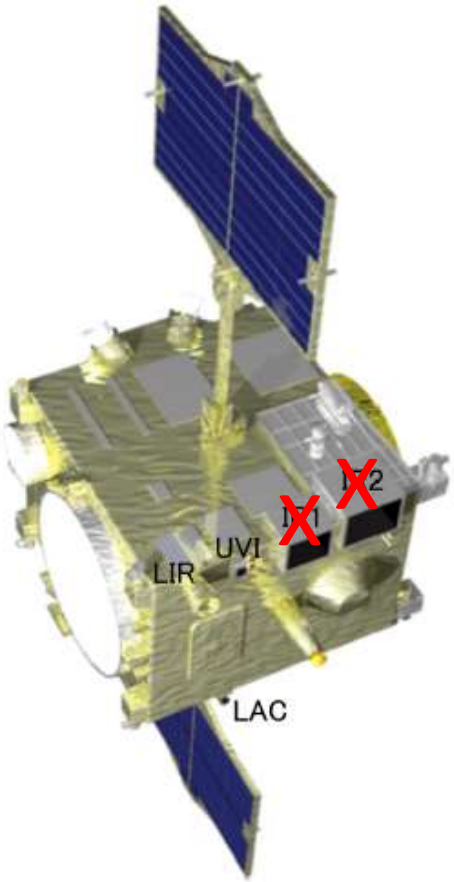


***IRTF's daytime observations can help Venus studies effectively!***

- 1-5 μm imaging, filling IR1/2's gaps
- Spectral data (1-20 μm)

***Akatsuki will continue until 2020!***

- 0.283, 0.365, 10 μm monitoring
- Temperature profiles
  (radio occultation measurement)