Changes near Sinus Margaritifer

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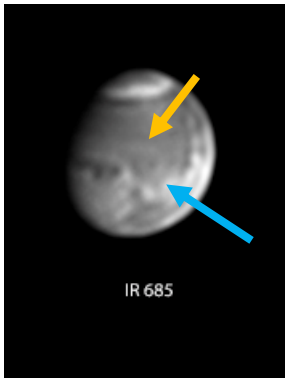
2020, May 03

I traced the state of Sinus Margaritifer for a while, based on the indication that the state on the south side of Sinus Margaritifer resembles that of Mars. The dust storm that occurred in April 2020 seems to have changed the appearance of this area, so I will report it.

1 State of 2020

The situation around this area during the 2020 season is shown on the right. It is recorded that the area on the south side of Sinus Margaritifer (between Mare Erythraeum) is fading from east to west. (Orange arrow)There is also a dark part in Chryse (blue arrow).



2020, Apr. 30 03h43.2mUT
Image; Clyde Foster

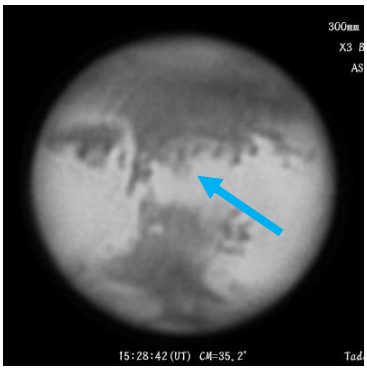
The Mars map created by Dr. Shiro Ebisawa in Japan looks like the figure, and is in the same state as the Mars image above. There is also a dim area in the northwestern area adjacent to Sinus Margaritifer. (Blue arrow of Chryse)

Looking at what this area looked like based on the images reported to ALPO Japan, the results were as follows.

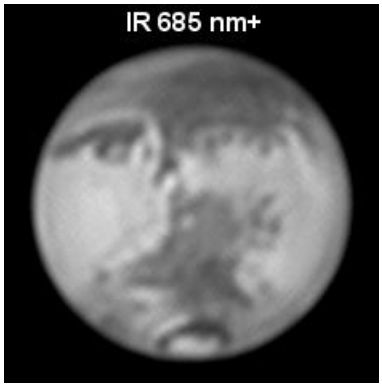
2 From IR images near Sinus Margaritifer

2018,May, 05 19h00m48sUT
IR 685
image; Ryuichi Iwamasa

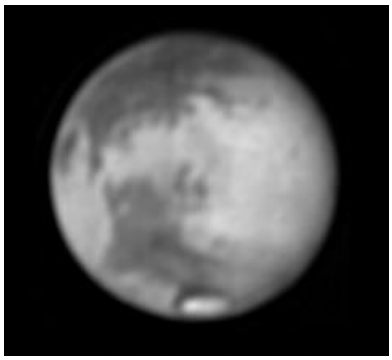
To the south of Sinus Margaritifer,can not see. On the Chryse side, the darkness on the Ebisawa map. The shapes of the map and the image are almost the same.It is also different from the shape of 2020.



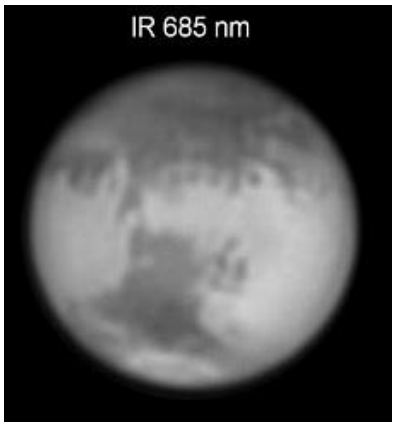
2016 年
2016, May, 23 15h26m15sUT
IR 685
image; Tadashi Horiuchi
It will be dark in 2016 and no bright part can be seen.Chryse's dark area is smaller than 2018.



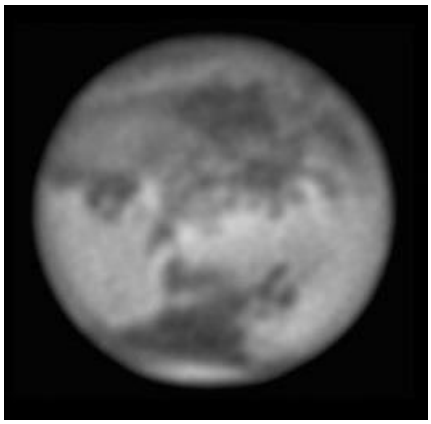
2014 年
2014, Apr. 14 00h00mUT
IR 685
image; Christophe Pellier
The situation is the same as in 2016.



2012 年
2012, Mar. 19 21h00mUT
IR 685
Image; Jean Jacques POUPEAU
The situation is the same as in 2016.



2010 年
2010, Jan. 30 00h13mUT
IR 685
Image: Jean Jacques POUPEAU
The situation is the same as in 2016.



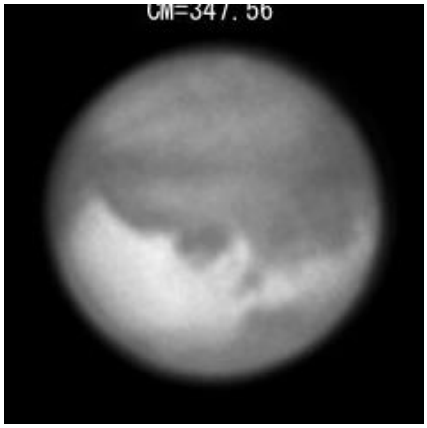
2007 年

2007, Dec. 29 14h21m39sUT

IR 60

Image; Kenkichi Yunoki

This year, the area is faint, but the basic pattern The pattern of has not changed from 2016.



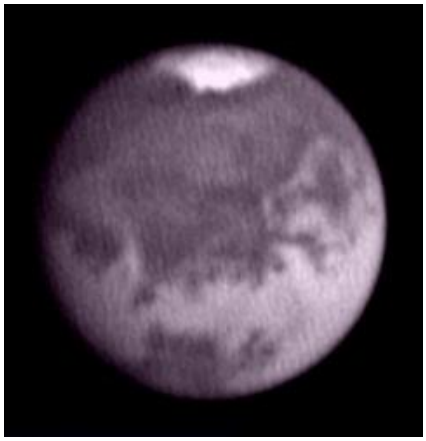
2005 年

2005, Nov. 07 13h26m52sUT

IR 60

Image; kenkichi Yunoki

The same trend as in 2007.



2003 年

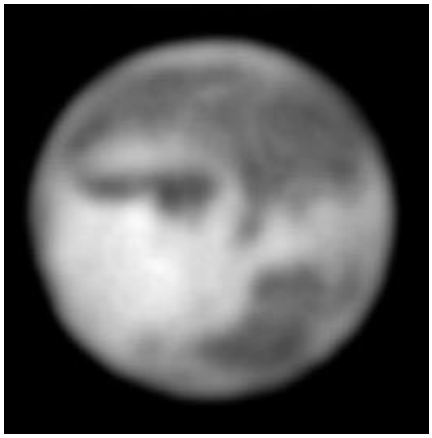
2003, Aug. 06 15h48m00sUT

IR 800nm-1000nm

Image; Akitoshi Hatanaka

2003 Pass over Sinus Margaritifer in August. Dust Storm occurred. Rocal Dust Storm,There was no change in the pattern.

In June 2001, the Encircling Dust Storm occurred and the ground surface was invisible.

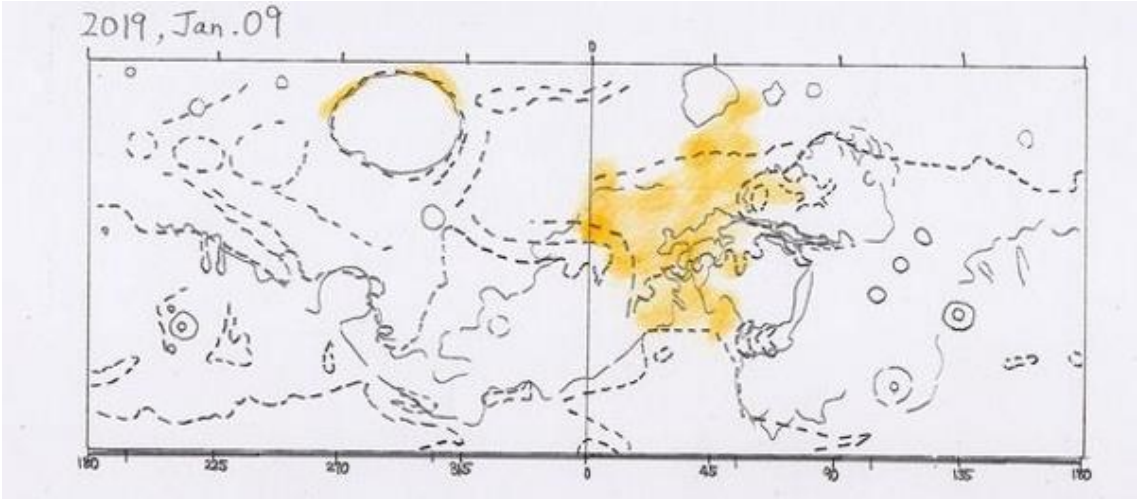


2001 年
2001, Jan.17 16h04m38sUT
IR 640nm-1000nm
Image; Masahito Niikawa
Encircling Dust Storm occurred in June 2001.Then, the surface of the earth became invisible. This image shows the state before it happened.

At least from 2001 to 2018, a dust storm had passed, but it turned out that it has not changed to the appearance of 2020. So why did 2020 change?

3　The reason for the change in pattern

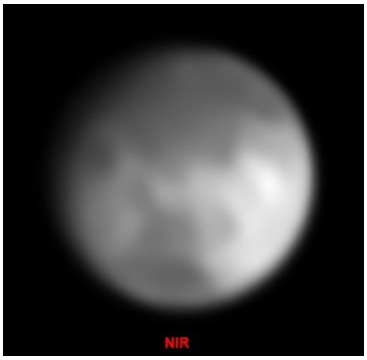
Around January 1, 2019, a severe Encircling Dust Storm occurred between Sinus Margaritifer and Aurorae Sinus.



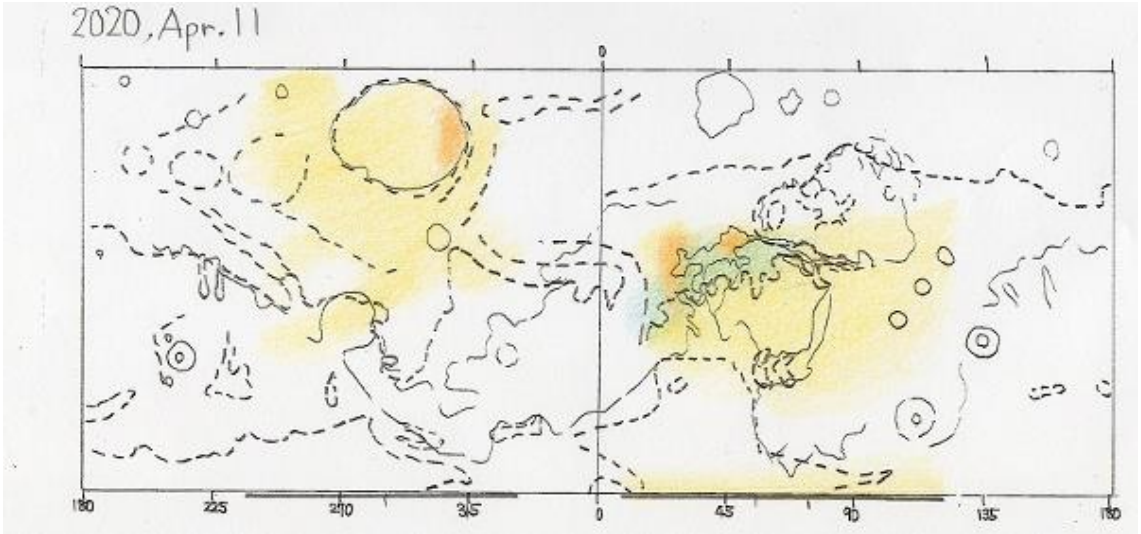
This figure was compiled by the author from the images reported to ALPO Japan, and the observation records of all holidays are available on this day. This figure shows that the area in question is covered by dust storms. When this dust storm developed and then declined, the area was as shown in the figure below. It seems that there were changes such as the sand on the ground surface being blown away, The pattern did not change.

The following image is from this time, but this dust storm may have triggered the change in 2020.

2019, Feb. 18 08h56m50sUT
IR 685
Image; Kenkichi Yunoki
There is no change.



2020 Jan. 30 18h42mUT
NIR
Image; Niall MacNeill
The southern bright part of Sinus Margaritifer is not visible.



4 月 11 日 Dust Storm occurred

Spread around the south of Sinus Margaritifer. Regional Dust Storm However, the bright part was formed after this. （imag 1）

4 Summary

The Dust Storm that occurred on April 11 created the southern part of Margaritifer Sinus. Probably sand was deposited on the surface. As a result, it looks like a map of Ebisawa. It is considered that the cause is that it was close to the source

and was affected by wind. It is not clear when the dark part that extends to Chryse is formed. It has been widely recorded since 2018. I don't know the cause.