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OBSERVATIONS

PLANET MARS IN 1967

by

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(USSR)

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OBSERVATIONS

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V. A. Zinov'yev

SUMMARY

Results are given of visual Mars observations in 1966-1967 with the aid of the 30-cm refractor of the Volgograd Observatory Planetarium. By comparison with 1965, a high transmittance of planet atmosphere, the absence of clouds and certain changes in color and detail visibility are noted. A series of drawings are presented.

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\* \*

The observations of planet Mars were conducted in the Peoples' Observatory of the Volgograd Planetarium using a 30-cm Zeiss refractor with magnifications 200, 312, 500  $\times$  through light filters. The general conditions of observations were less favorable than in 1965.

The observations started in September 1966 and completed in July 1967. The Mars' disk was seldom depicted [1], so that on the highly-sensitive film only a few decent negatives and 14 drawings were obtained in all. Some of the drawings are presented in the attached plate.

The peculiarity of the visibility period consisted in the high Mars atmosphere transparency, a practical absence of cloud formations and a substantial coloring of the details of the disk (on 30 March and 23 April 1967). The observations coincided with the peak of the summer on Mars; the coloring of details was reddish with low contrast against the surrounding background.

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(\*) NABIYUDENIYA. MARS V 1967 G.

Following was the noted latitude distribution of Mars disk's coloring: South was clear; North was neutral; the southern maria showed greenish tones, the equator was orange and the belt to the north of the equator was brown. Real "greenish" tones were noted in the region of SYRTIS MAJOR area adjacent to LYBIA (Fig.2).

By comparison with 1965 the variation of details on Mars in 1967 was expressed as follows:

1. SYRTIS MAJOR, NILOSYRTIS, OSMENIUS LACUS, NILOCERAS, SINUS SABAEUS (3 March), TRIVIUM CHARONIS (30 April) had an increased intensity.
2. HYPERBOREUS LACUS and an area of SYRTIS MAJOR (30 April) showed a decreased intensity.
3. ISIDIS REGIO (2 May), AERIA and MEROE had increased brightness.
4. ELYSIUM, ARCADIA, AMAZONIS, DIACRIA had a decreased brightness.
5. An improved visibility corresponded to: a) the Southern maria (up to high contrast); b) the details of MARE ACIDALIUM; c) the details of the disk through blue light-filter (11 April and 8 June); d) the "canals" in the desert region ( $\lambda = 200-260^\circ$ ) (improved contrast with brown-greyish coloring).
6. A deteriorated visibility corresponded to: a) canals and other tiny details in northern deserts (because of color uniformity); the northern cap was invisible through red light-filter (8 June).
7. Observed white regions: a) northern cap (together with OLYMPIA and other separated parts); b) AUSONIA, HELLAS (30 March, 26 April, 17 July); c) a narrow band of the southern limb (26 April, 17 July).

No white clouds were observed. The partition of the polar cap was repeated on 30 April in the same regions. No brightness or intensity variations in the details were noted.

#### CONCLUSION

The Mars' disk coloring was conditioned in 1967 by the seasonal variation of detail contrast and the influence of atmospheric dispersion on account of the low position of the planet above horizon. A true color change took place

only in the central part of SYRTIS MAJOR. A certain blur of Mars atmosphere apparently took place in the AMENTHES, MOERIS LACUS, LYBIA a portion of SYRTIS MAJOR. adjacent to JAPIGIA.

\*\*\*\* T H E E N D \*\*\*\*

VOLGOGRAD DIVISION OF VAGO

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23 July 1968

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Plate attached.../..

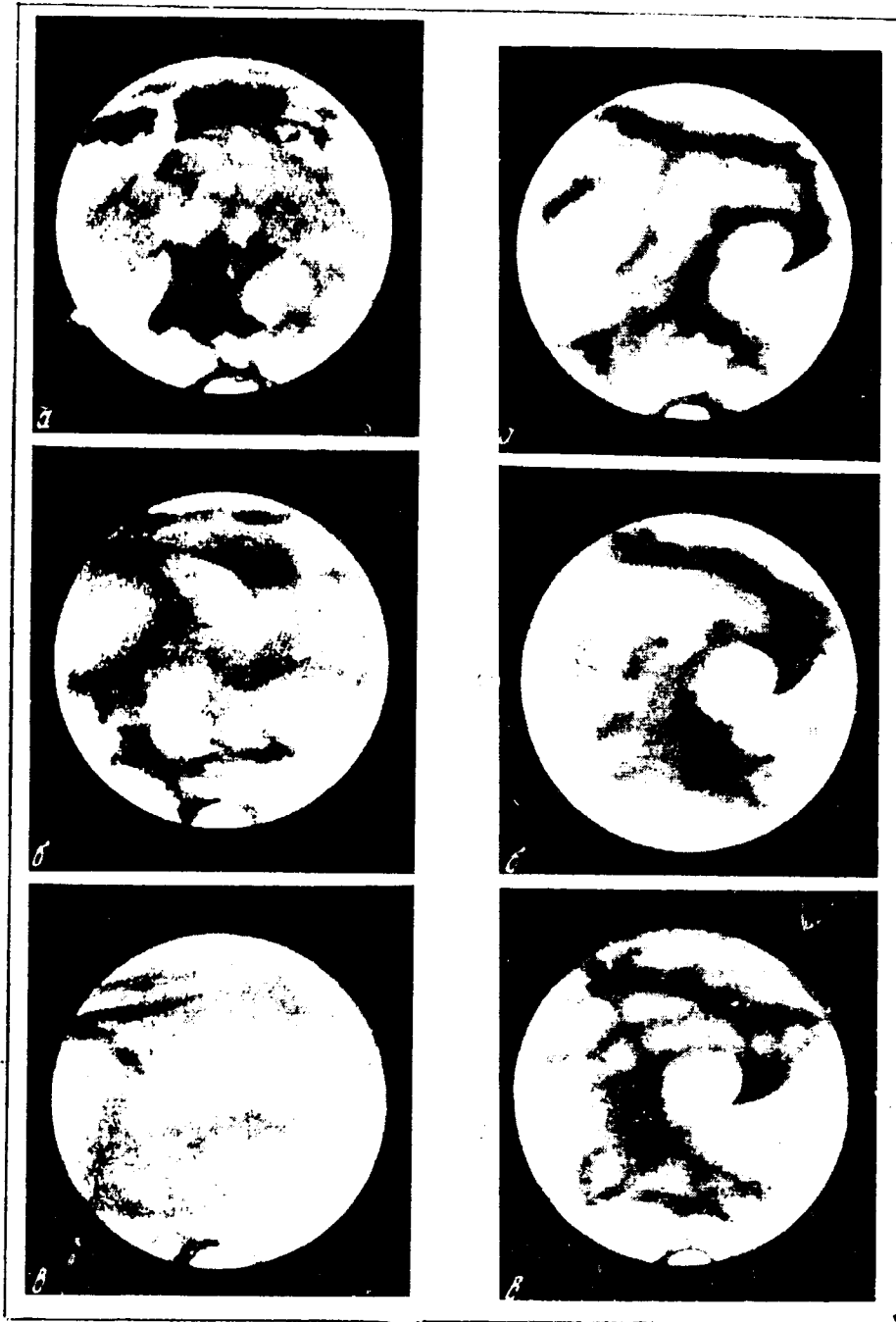


Fig.1

Drawings of Mars in 1967: a) 16 April 1930-2015 h.LT; 500 x; yellow filter;  $L_0 = 40^\circ$ ; б) 21 May 1000 h. 312 x; green filter;  $L_0 = 86.3^\circ$ ; B) 11 April 2000 h.; orange filter;  $L_0 = 93.5^\circ$

Fig.2

SYRTIS MAJOR region 8 June 1967: a) 1800 h. 200 x; without filter;  $L_0 = 50^\circ$ ; б) 1825 h. 311 x; red filter; B) 1840 h. 312 x; green filter