MARS SECTION E. H. COLLINSON, *Director*

SECTION REPORT—MARS IN 1965

The apparition of 1965 was the third of the present series of aphelic and therefore unfavourable apparitions of the planet. The northern hemisphere of Mars was turned towards the Earth, the tilt of the north pole being +21° at opposition which occurred on March 9. The diameter of the planet at opposition was only 14″ of arc, making observations of minor features difficult.

The names of members who contributed observations with particulars of their location and telescopes used are as follows:

Observer	*Location*	*Instruments*
D. Allen	Cambridge	12-inch (30 cm) O.G.
J. Bartram	Kimbolton	8½-inch (21 cm) spec.
K. Bispham	Manchester	8-inch (20 cm) spec.
R. A. Blackett	Newcastle	8½-inch (21 cm) cassegrain
M. Blosfelds	Doncaster	8-inch (20 cm) spec.
J. H. Botham	Johannesburg	6-inch (15 cm) O.G.
I. R. H. Brickett	Johannesburg	6-inch (15 cm) O.G.
B. Burrell	Doncaster	10-inch (25 cm) spec.
B. A. Carter	Birmingham	12½-inc (31 cm) spec.
W. B. Caunter	Billinghurst	6-inch (15 cm) O.G.
E. H. Collinson	Ipswich	10-inch (25 cm) spec.
H. E. Dall	Luton	15½-inch (39 cm) cassegrain
K. J. Delano	New Bedford, Mass., U.S.A.	12½-inch (31 cm) cassegrain
J. Dragesco	Gabon, Africa	175 m.m. spec.
M. Duckworth	Stalybridge	8½-inch (21 cm) spec.
W. E. Fox	Newark	10-inch (25 cm) spec.
R. Gibbons	Chesterfield	18-inch (45 cm) spec.
A. W. Heath	Long Eaton	8-inch (20 cm) spec.
J. Hollingsworth	Chesterfield	18-inch (45 cm) spec.
H. C. Hunt	Aylesbury	12-inch (30 cm) spec.
M. V. Jones	Maryborough, Queensland	8-inch (20 cm) spec.
K. Lingley	Harlow	4-inch (10 cm) O.G.
P. A. Moore	E. Grinstead	12½-inch (31 cm) spec.
J. B. Murray	Cambridge	12-inch (30 cm) O.G.
R. Newport	Harlow	4-inch (10 cm) O.G.
J. Olivarez	Mission Texas, U.S.A.	12½-inch (31 cm) spec.
C. Osborne	Plymouth	10-inch (25 cm) spec.
K. J. H. Phillips	Ashford	8½-inch (21 cm) spec.
W. J. Rippengale	Luton	10-inch (25 cm) spec.
T. A. Robinson	Kilwinning, Ayrshire	6-inch (15 cm) (spec.
J. Rustige	Manchester	8-inch (20 cm) spec.
B. Sims	Birmingham	12½-inch (31 cm) spec.
H. Sykes	Kuala Lumpur, Malaya	12-inch (30 cm) spec.

As in recent apparitions, observations were made with a view to detecting any changes in the shape and intensity of the surface features and the presence of clouds.

Intensity observations were made by Caunter, Dragesco and Heath and are given in Table I.

Filter observations were made by Heath and Delano. Heath's general remarks on the appearance of the planet using various filters are given in Table II, and a selection of his drawings in Figure 15.

Some photographs of the planet were obtained by Dall, Hollingsworth, Rippengale and Sykes.

The principal features of the planet are described under the three regions of the planet as in previous reports.

Region I: ω 250°–10°

The appearance of Syrtis Major and Sinus Sabaeus was normal. Heath's filter observations suggest that Syrtis Major has a strong green-blue content. Hellas was frequently noted as being very bright. Heath described it as being as bright as the polar cap when observed with no filter, as light but not bright with a Dufay red filter, brilliant with Ilford green and blue and as a diffused light region with Dufay blue. Ismenius Lacus was conspicuous consisting of two components (see drawings by Burrell and Dragesco on April 13 and 12 respectively). The 'canals' Protonilus and Deuteronilus were fairly conspicuous and Pierius and Callirohae were visible to Burrell on March 13. Moeris L. was conspicuous. Nilosyrtis 'canal' was seen by Caunter, Burrell, Brickett and Dragesco. Aeria and Isidis-Neith regions were frequently seen bright, possibly due to white cloud (see drawings by Dragesco, Fox and Heath).

Region II: ω 10°–130°

Aurorae S. and Solis Lacus were too far south for useful observation. Margaritifer S. appeared normal, at its northern end Oxia Palus was seen by Burrell on May 12.

M. Acidalium was well presented for observation. Niliacus L. was seen well separated from M. Acidalium by Achillis Pons, Burrell's drawings showing it to consist of two distinct components. Heath recorded that with a red filter

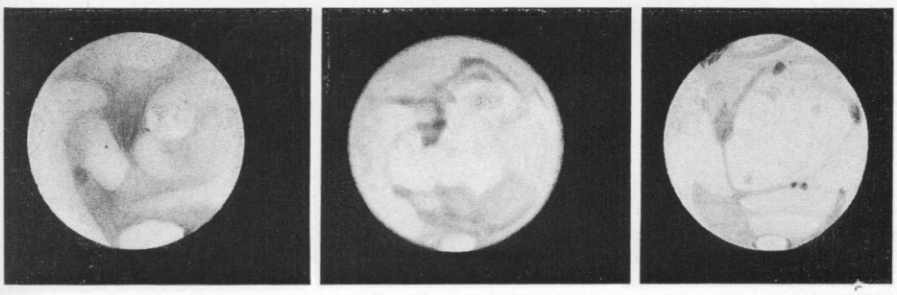

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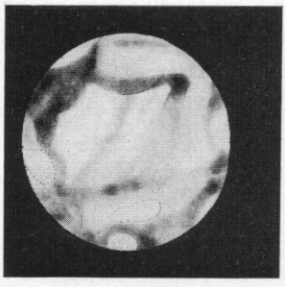
Figure 1. 1965 March 8d 22h 15m. $\omega = 285°$. 10-inch (25 cm) Spec. W. E. Fox.
Figure 2. 1965 March 6d 22h 15m. $\omega = 302°$. 12-inch (30 cm) O.G. J. Murray.
Figure 3. 1965 April 13d 22h 10m. $\omega = 326°$. 10-inch (25 cm) Spec. B. Burrell.

this mare is darker and of clearer outline and that it was fainter and more diffused in green and more so in Ilford blue.

Nilokeras which runs from M. Acidalium to Lunae Lacus was a conspicuous feature. Lunae Lacus was well seen, as was Ascreus Lacus which was at the junction of several dusky streaks identified as the canals Nilus, Iris and Ceranius, all being more conspicuous than as shown on the I.A.U. map (see Dragesco's drawing of March 30). Nix Tanaica was seen as a bright spot on the f. side of Tempe to Dragesco and Delano. It increased in brightness between April and May according to Delano.

REGION III: ω 130°–250°

Mare Sirenum and M. Cimmerium were close to the S. limb and consequently too foreshortened for useful observation. The region of Amazonis showed numerous faint shadings to Dragesco. Trivium Charontis and Cerberus I were generally conspicuous. Phlegra was seen as a dusky shading without detail. Propontis I and II were distinctly seen by Burrell on April 23 but they were generally indistinct.



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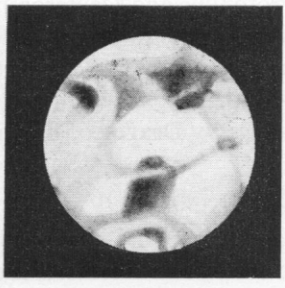

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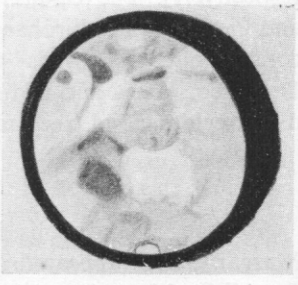

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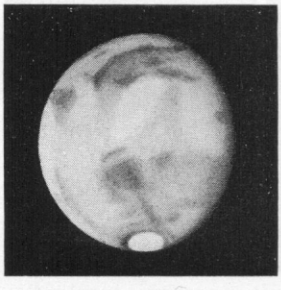
FIGURE 4. 1965 April 12d 22h 45m. $\omega = 337°$. 175 mm Spec. J. Dragesco.
FIGURE 5. 1965 April 4d 21h 0m. $\omega = 30°$. 175 mm Spec. J. Dragesco.
FIGURE 6. 1965 May 11d 21h 15m. $\omega = 51°$. 12½-inch (31 cm) Spec. B. A. Carter.



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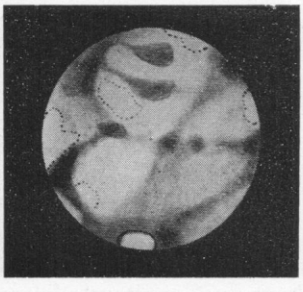

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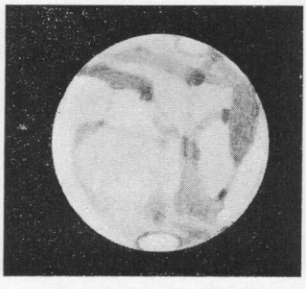

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FIGURE 7. 1965 May 12d 21h 30m. $\omega = 49°$. 12-inch (30 cm) O.G. J. Murray.
FIGURE 8. 1965 March 30d 22h 30m. $\omega = 88°$. 175 mm Spec. J. Dragesco.
FIGURE 9. 1965 March 12d 22h 0m. $\omega = 247°$. 10-inch (25 cm) Spec. B. Burrell.

No shading of the Aethiopis region, which was a feature of the 1958 and 1960 apparitions, was recorded and it seems that this region has now returned to its normal intensity.

North Polar Cap

Apart from the seasonal diminution in size, variations in the extent of the cap were observed, probably due to haze through which the true cap was occasionally observed as a bright central core.

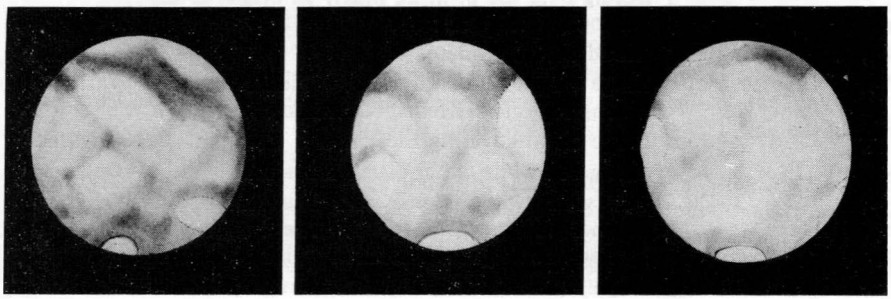

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FIGURE 10. 1965 March 16d 23h 15m. $\omega = 229°$. 175 mm Spec. J. Dragesco.
FIGURE 11. 1965 February 8d 2h 40m. $\omega = 244°$. 175 mm Spec. J. Dragesco.
FIGURE 12. 1965 February 18d 1h 10m. $\omega = 134°$. 175 mm Spec. J. Dragesco.

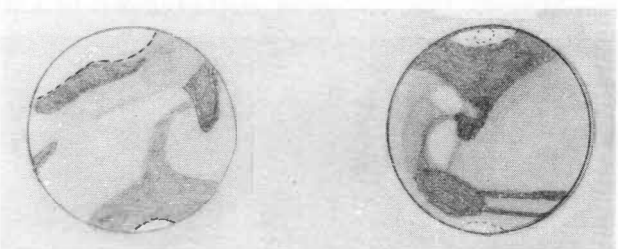

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FIGURE 13. 1965 April 27d 2h 15m. $\omega = 234°$. 17-inch (42 cm) Spec. J. Olivarez.
FIGURE 14. 1965 April 24d 2h 0m. $\omega = 262°$. 17-inch (52 cm) Spec. J. Olivarez.

Observations of Clouds

The following observations of clouds were made during the apparition:

Date and time 1965				*Position and description*	*Observers*
February	8d	2h	40m	Large cloud obscuring f. side of Syrtis M. and Aeria.	Dragesco
,,	18	1	0	Over Candor, projecting from the p. limb.	Dragesco
,,	27	0	5	Small well-defined white cloud over f. end of Deucalionis R.	Moore

Date and time 1965				*Position and description*	*Observers*
March	11	22	45	Yellow cloud over Nilosyrtis.	Dragesco
,,	15	22	30	Cloud over Neith R. also observed on March 16.	Dragesco
,,	15	2	0	Bright cloud on limb p. Casius.	Delano
,,	16	7	30	Small bright limb cloud over Ismenius Lacus.	Delano
,,	20	2	0	Cloud partially obscuring Syrtis Major which cleared at 3h 45m.	Delano
,,	28	1	45	Small cloud over part of Amazonis.	Delano
,,	29	1	0	Cloud over Amazonis, large and bright, projecting over the p. limb, nearly as bright as the polar cap with blue filter	Delano
,,	28	and 29		Cloud over Thymiamata.	Moore
April	23d to May 31d			Large bright white cloud over Hellas and adjoining regions of Hellispontus and Noachis.	Various
,,	27d	2h	15m	Large cloud covering Electria and Eridania.	Olivarez
May	13	1	15	Elongated white cloud over Memnonia.	Delano
,,	15	2	30	The same white cloud over Memnonia and another to the north of it. The two clouds formed one large cloud as seen with a blue filter.	Delano
,,	30	1	30	Bright white cloud south of S. Sabaeus probably an extension of the Hellas cloud.	Delano

TABLE I

INTENSITY ESTIMATES. SCALE: 0 = POLAR CAP, 10 = BACKGROUND OF NIGHT SKY

Feature	*Average Intensity*		
	Caunter	*Dragesco*	*Heath*
Acidalium M.	4	7	5
Aurorae S.		6	5
Boreosyrtis	3		6
Boreum M.			3·5
Casius	3	6·5	5
Ceraunius			2
Cimmerium M.	5	5	5
Deltoton S.	5	6·5	
Deucalionis R.			1
Deuteronilus	3		7
Erythraeum M.		7	5
Iapigia			5
Ismenius L.	3	4	2
Lunae L.		5	3·5
Margaritifer S.		6	5
Meridianni S.	5	7	6
Moeris L.		5·5	
Nepenthes		4	5
Niliacus L.	4	6	
Nilokeras	4		
Nilosyrtis	3		5
Pambotis L.		4	
Phoenicis L.		4·5	
Protonilus	3		
Sabaeus S.	5	6·5	6
Serpentis M.		7	

Feature	*Caunter*	*Dragesco*	*Heath*
Solis L.		5	6
Sirenum M.		6	
Syrtis Major	7	7	8
Thoth		4	
Thymiamata	1		1
Tithonius L.		4	
Trivium Charontis ..		5	4
Tyrrhenum M.	5		5

TABLE II: OBSERVATIONS WITH COLOUR FILTERS BY A. W. HEATH

Dufay RED	Dark regions appear about one point on intensity scale darker than with no filter, and the outline is usually clearer. Increase of contrast of general image. Polar cap dull.
Dufay YELLOW	Appearance and intensity similar to no filter, and polar cap also. The bright region of Hellas on April 11 was visible but not particularly bright.
Dufay GREEN	Dark areas are about the same intensity as no filter, but outline is frequently more diffused. Limb brightness is more evident, and the polar cap is brilliant.
Ilford BLUE	Dark areas very vague with shape hard to recognise. Limb brightness very apparent and polar cap bright and often diffused.
Dufay BLUE	Disc more or less blank. No real evidence of 'blue clearing' at all, but the atmosphere has been a little more transparent at times in the shorter wavelengths. A few variations have been seen on the disc at times but no recognisable features. Polar cap dull and vague, often hard to see. Limb frequently bright, and some light areas have been seen.
Wratten 47b (BLUE)	Similar to Dufay Blue.

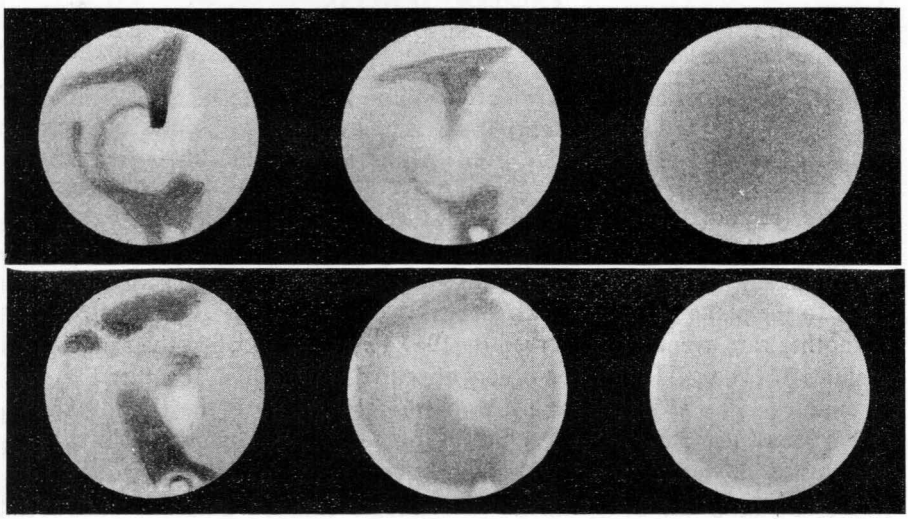

FIGURE 15. Mars through colour filters. (Top) 1965 March 9d 22h 0m. $\omega = 280°$. Filters (left to right): Dufay red, Dufay green, Dufay blue. (Below) 1965 April 2d 21h 15m. $\omega = 51°$. Filters (left to right): Dufay red, Ilford Micro blue, Dufay blue. All with 12-inch (30 cm) Spec. A. W. Heath.