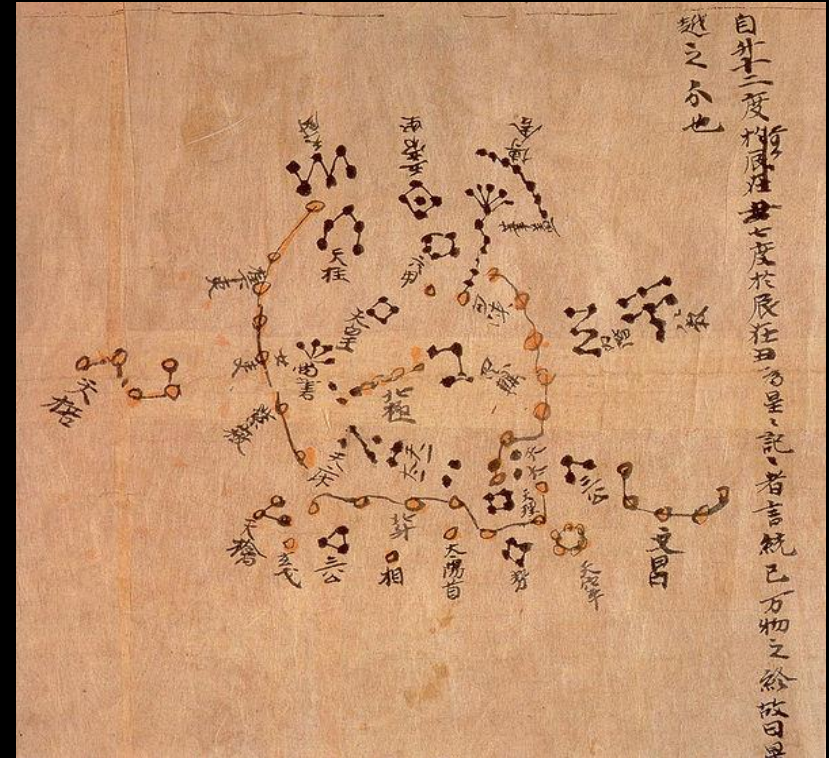


# HISTÓRIA DA OBSERVAÇÃO DE MARTE

## ASTRONOMIA ANTIGA

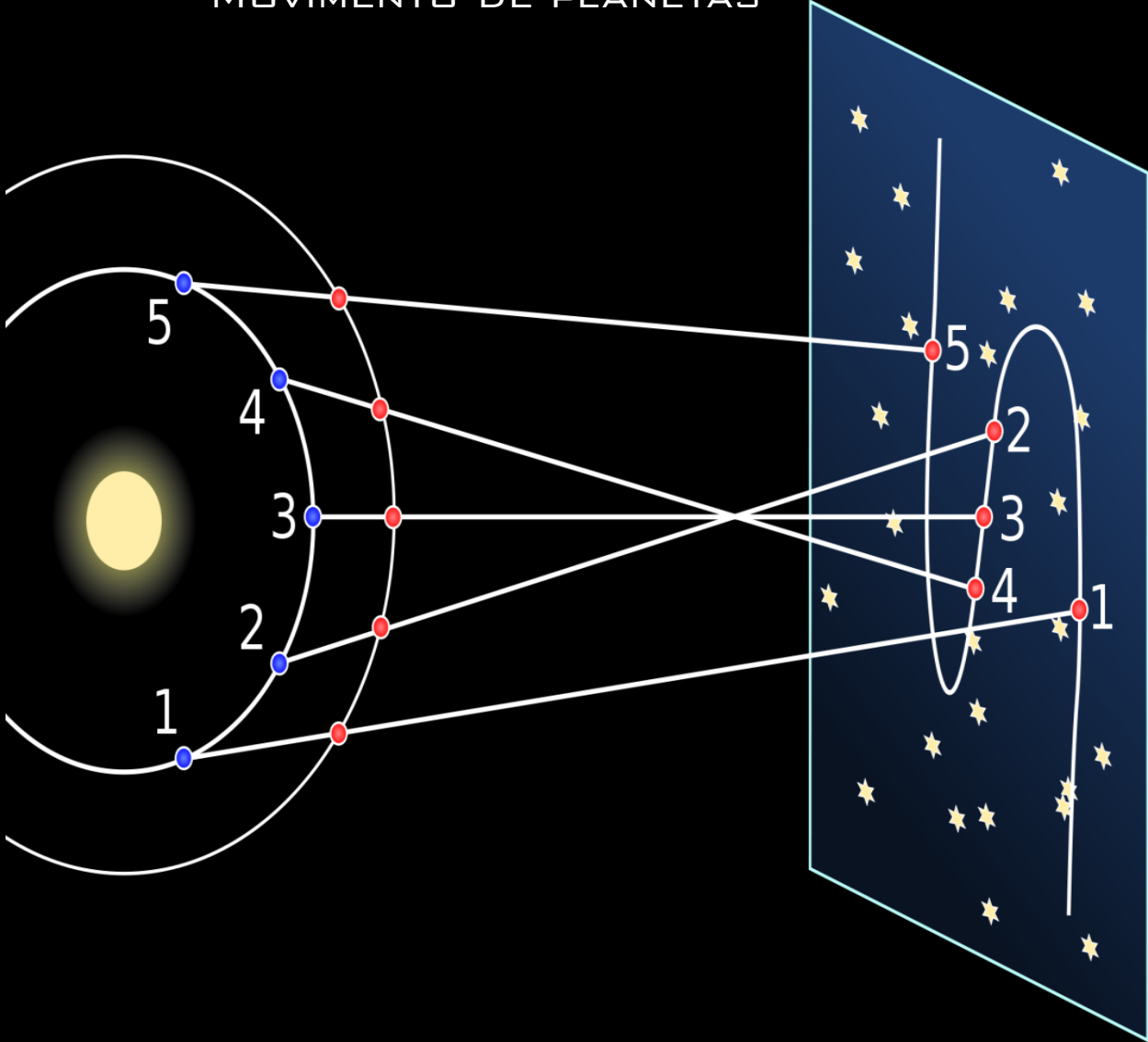


EGITO ~2000 A.C.  
PRIMEIROS RELATOS  
DE OBSERVAÇÕES



CHINA ~1045 A.C.  
RELATO DE POSIÇÕES DE  
MARTE ANTES DA  
DINASTIA DE ZHOU

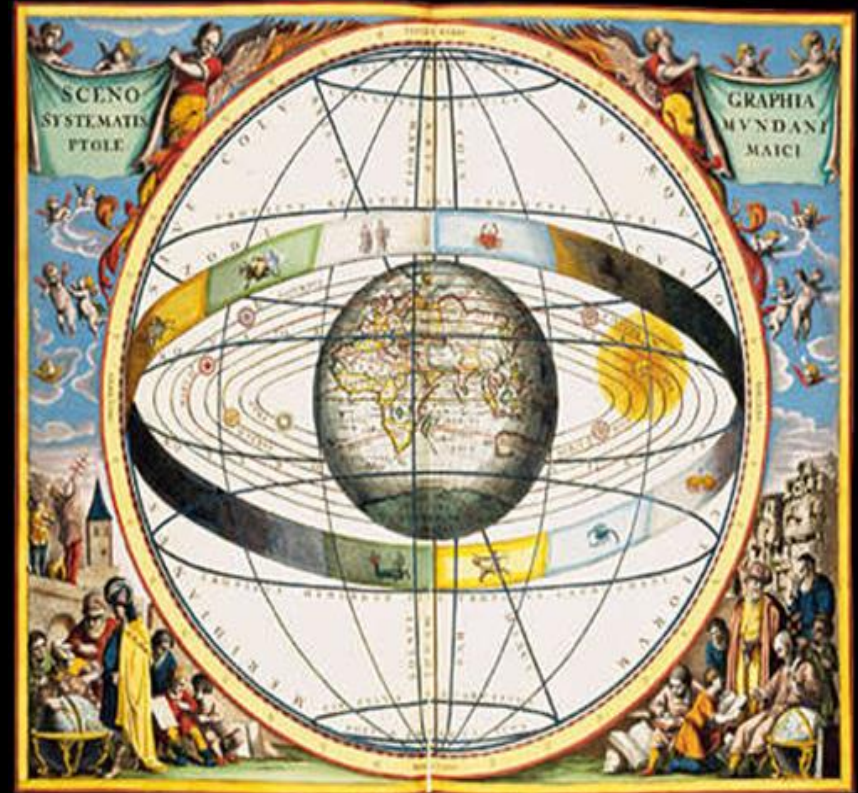
MOVIMENTO DE PLANETAS



## ASTRONOMIA ANTIGA



ASTRÔNOMOS BABILÔNICOS  
DETALHARAM POSIÇÕES DE  
MARTE COM DESENVOLVIMENTO  
DA ARITMÉTICA



PENSADORES E ASTRÔNOMOS  
GREGOS/HELÊNICOS  
DESENVOLVERAM MODELO  
GEOCÊNTRICO PARA EXPLICAR  
MOVIMENTO DE PLANETAS

# ASTRONOMIA ANTIGA



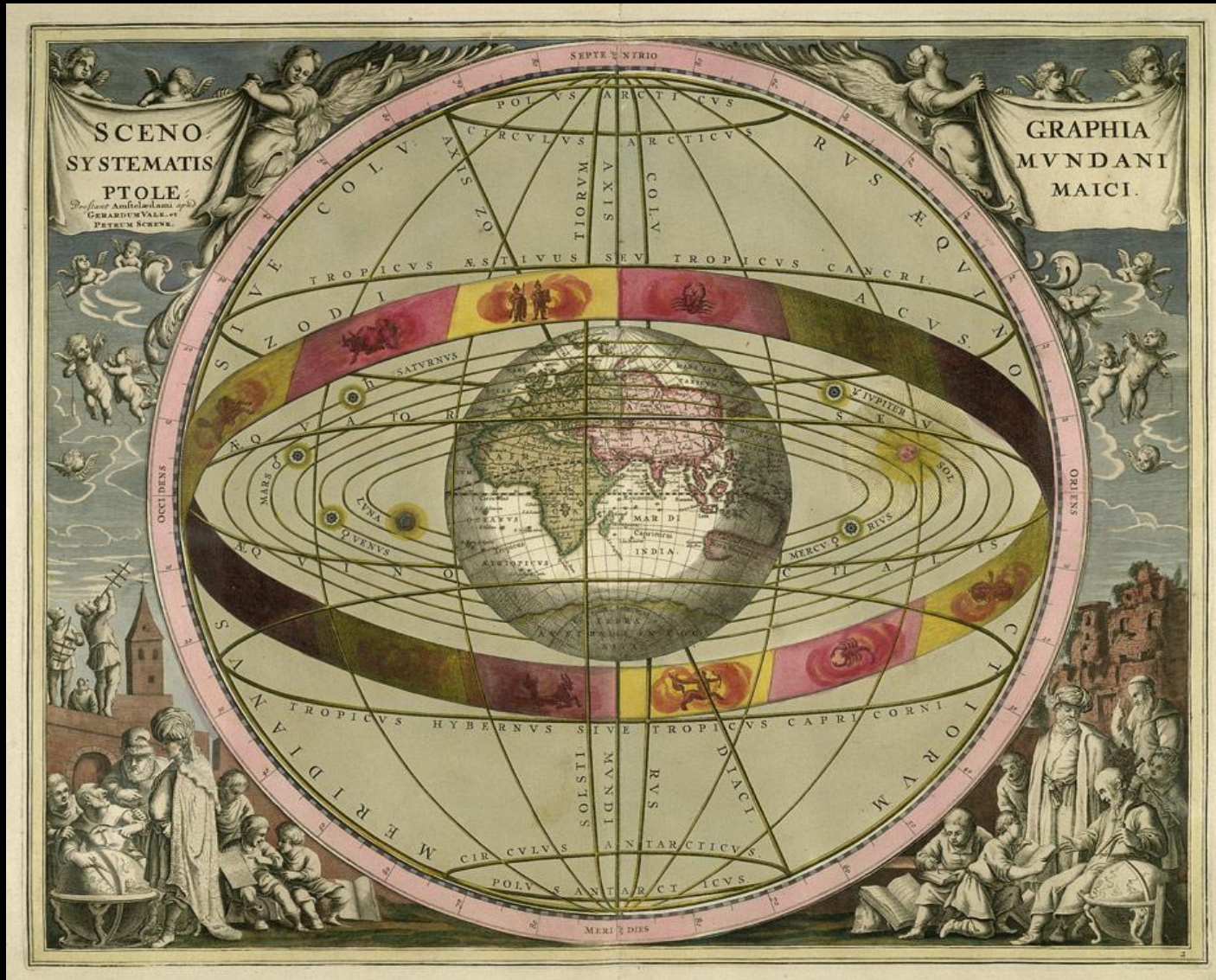
نصف القطر فانزلنا منه خطا حتى نروي القطر الى مركزه ثم  
 نركب على ذلك النصف قسيديا بنسبة زودور كراهة ونخرج اذ  
 يتقاطعان على اذنا فانهم يخرجون ربعا يكون نسبة  
 اليه كسبة ربع الامة ونخرج عمودي كراهة طرسم ونتم سطح اذ  
 بعد ان جعلنا خطا تم مثل آه فلان نسبة آه الى ا كسبة فان  
 الامة و طرسم مثل آه يكون نسبة طرسم الى ا كسبة ربع الامة و  
 بينة الهندسية في توفرت الاصول و ضرب طرسم في ربع ا كسبة ربع الامة  
 ما في فكريه سطح ا كسبة ربع الامة و سطح ا كسبة ربع الامة  
 شرا كما يكون سطح ا كسبة ربع الامة فان علمنا قطرا ا كسبة  
 الابعاد و خطا طرسم و ربع على نقطة كما بينه الجوريس  
 في نظر القائل الاولي من كتاب الخوطات والشكل و  
 وة من المقالة الثانية من هذا الكتاب اذ هذا العلم يتم بهذا

INDIANOS E ISLÂMICOS ANTIGOS ESTIMARAM O TAMANHO DE MARTE E SUA DISTÂNCIA DA TERRA

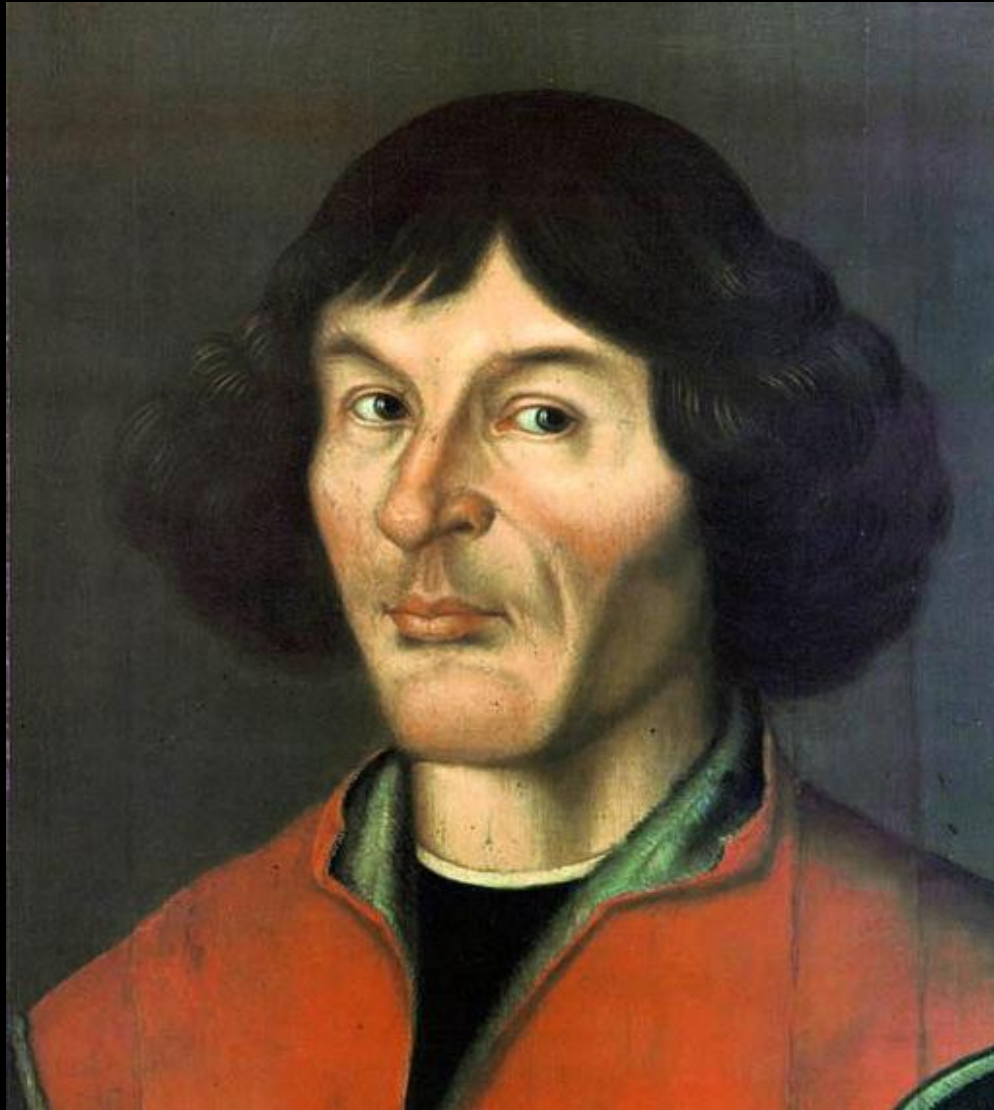
PTOLEMEU – ALEXANDRIA,  
EGITO ~70 D.C.



# MODELO GEOCÊNTRICO

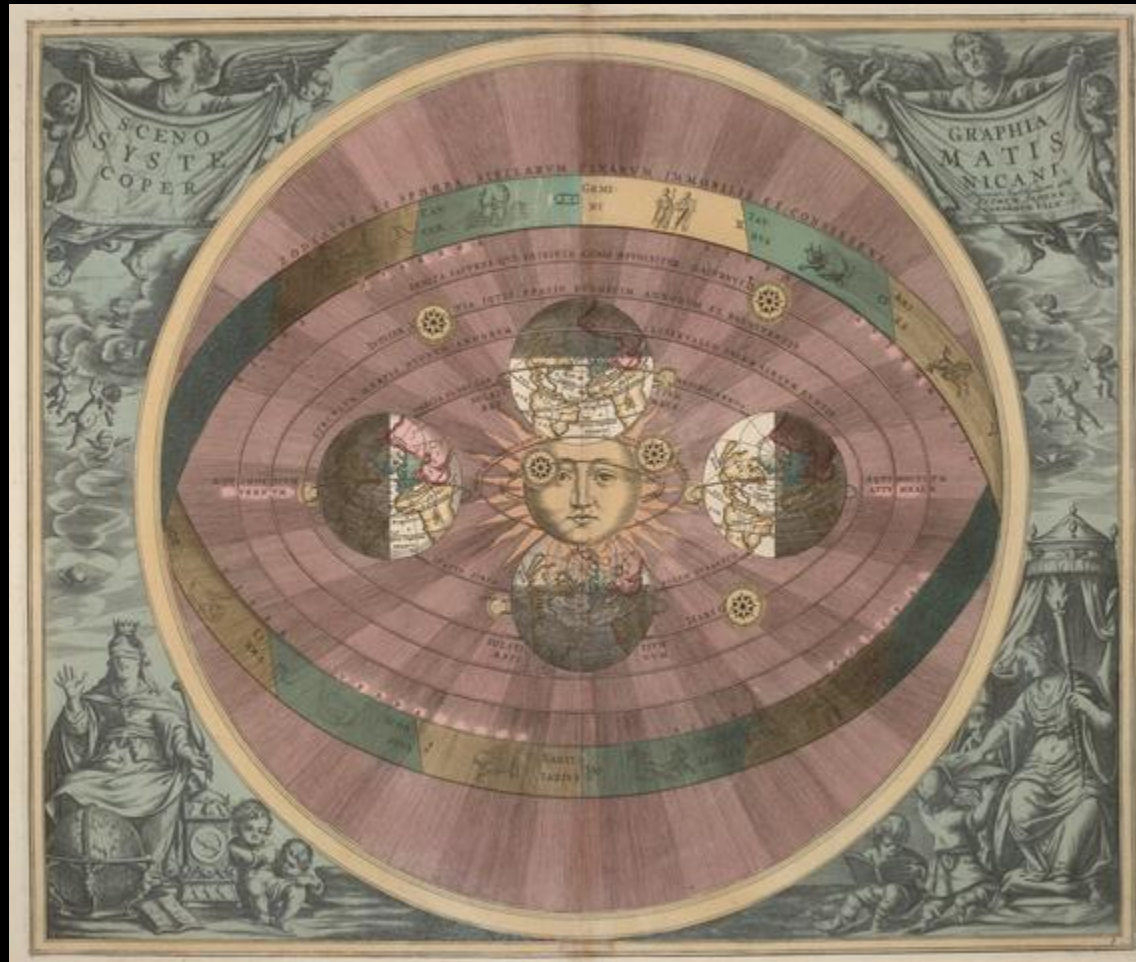


NICOLAU COPÉRNICO – POLÔNIA-1473-1543





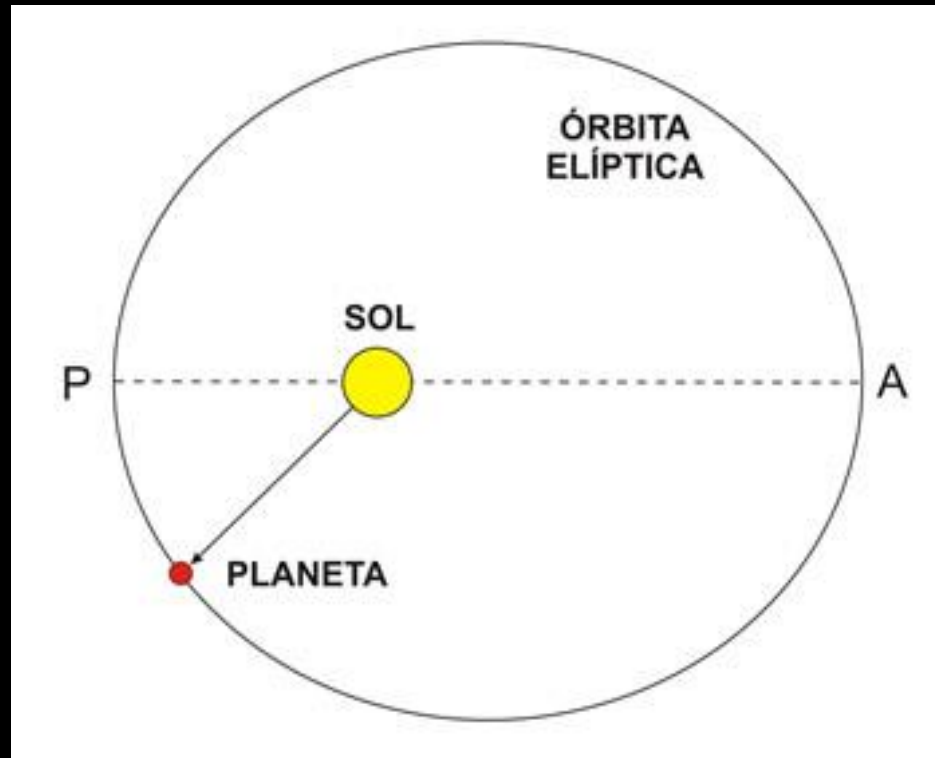
# MODELO HELIOCÊNTRICO



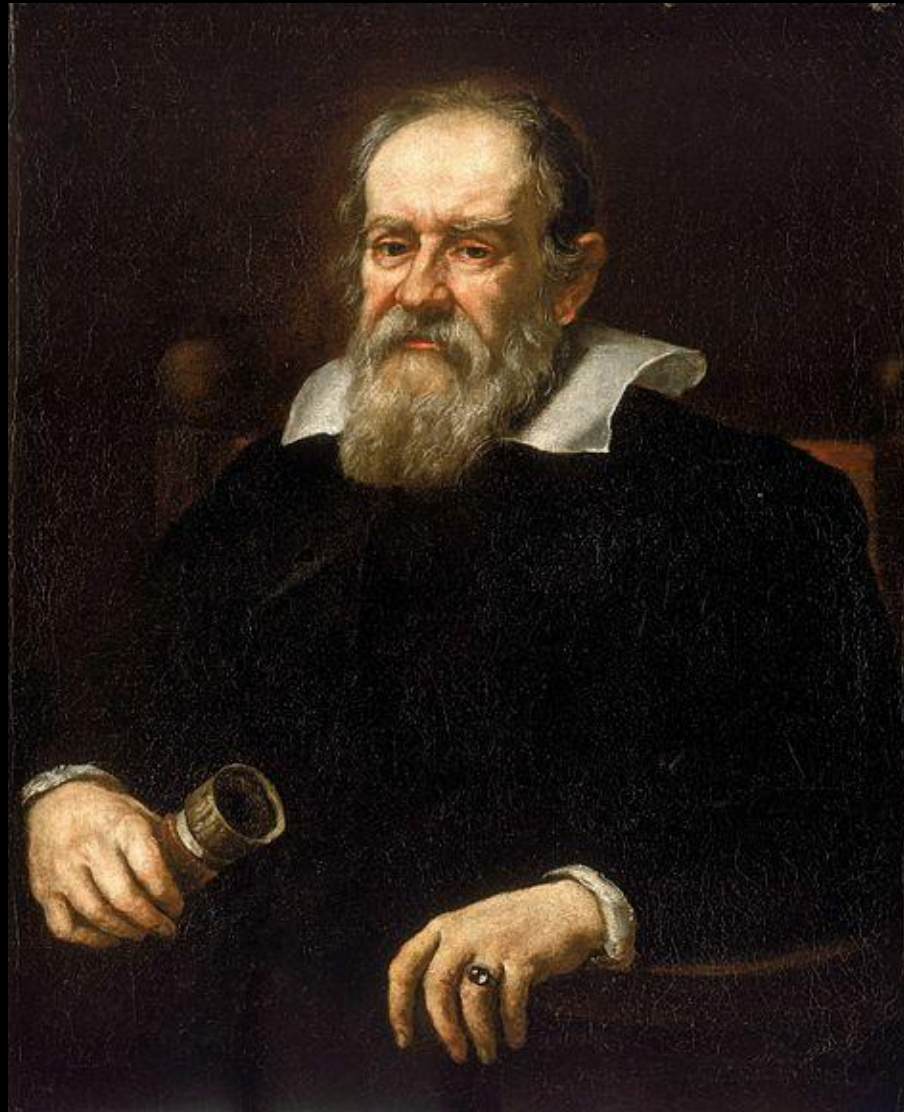
JOHANNES KEPLER – ALEMANHA - 1571 - 1630



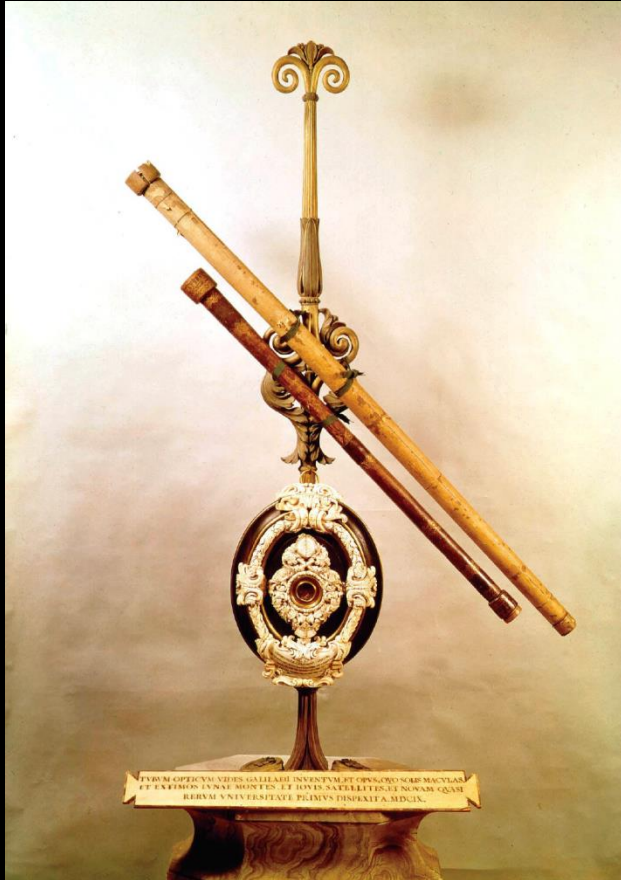
## ÓRBITA ELÍPTICA



GALILEU GALILEI – ITÁLIA - 1564 - 1642



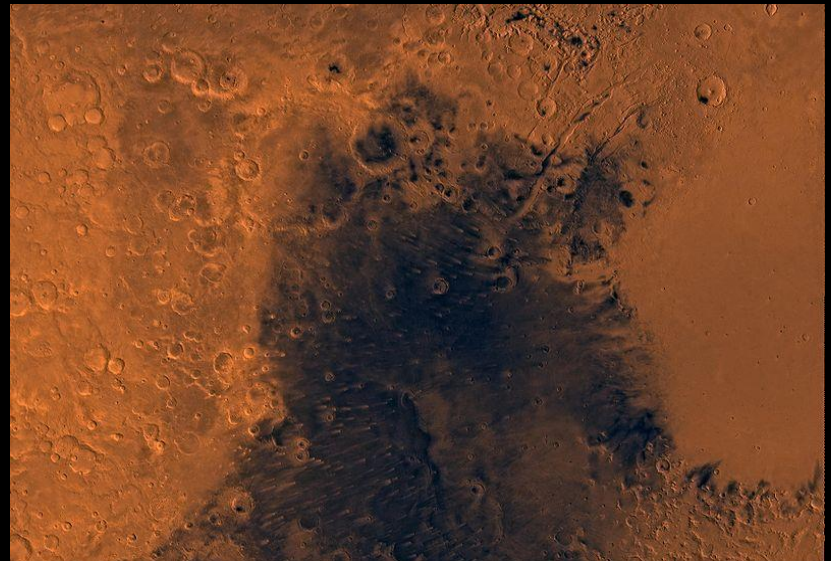
## OBSERVAÇÕES COM TELESCÓPIO



LUNETTA DE GALILEU



FORMAÇÕES DE ALBEDO E CALOTAS POLARES

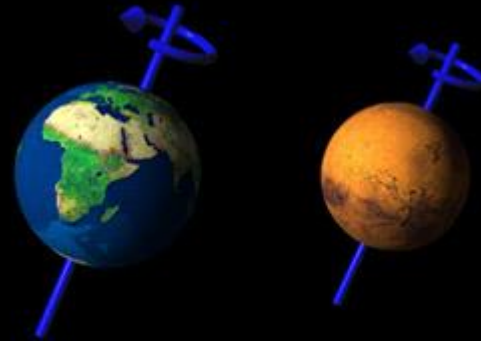


PLANÍCIE SYRTIS MAJOR

# OBSERVAÇÕES COM TELESCÓPIO



ROTAÇÃO DE MARTE



Earth  
23°

Mars  
25°

EIXO INCLINADO



MARTE EM FASE

GIOVANNI SCHIAPARELLI - 1835 - 1910



# OBSERVAÇÕES

164.12

VII

19° 25' M  
248.94

Carla nelle  
l'istmo sopra  
pare abbassato  
ha visibile il  
mare come è  
il suo estremo



in a si vede  
un campo di  
bianco  
(ellade)  
in e d mappa  
l'istmo

F di soliti 2 zone nell'ora a 135°

1941

Σ 2548	70° 3'	76' 480	27' 250	20' 15"
59022	70.5	70.40	440	240
37954		172.15		227
969.80		101.73		

Σ 2656 dpl non indetenu Diavolo: il compagno è 11.7

1942

Σ 2708	157.6	25' 968	27' 772	20' 35"
147.95	158.1	934	740	95549
532.15				27954
334.25				33503

1943

Σ Sulph	260.75	26' 401	27' 345	20' 30"
	260.79	368	302	67164
				37954
				05102
				20.30
				26.77
				532.15
				671.56

Σ 2734 non inventa. Di San niccolo, caso mio.

♂ 22° 20" 261.32

piccola fitta esattamente nel diametro della calotta

pop. qui di questa	W = 15° 4'	42.15
dpl. dff della par. fitta	16.1	172.15
dal centro della calotta	26° 120 27' 482	15.75
	001	156.39
		64
		83.90
		57.954
		21.827

Diavolo ♂	25° 733	27° 833	02192
pal	720	327	27954
			40150

22° 40" 267.19

passa al merid. l'istmo dell'Uade, nel quale passate la mezza fitta.

e passa quel punto della costa Adria-  
tica dell'Uade, che si trova al centro  
del rigo opposto

22 45 268.40

Passo dell'Uade merid. del Timon  
e dell'Adria merid. W = 375° 2'

376.00	326.8
532.15	
206.15	

22° 50" 269.62

P. dell'Uade inf. W = 30° 2'

30.2	1.10
532.15	172.15
206.15	150.15

22° 57" 270.11

Pop. della calotta W = 16° 2'

16.0	172.15
	150.15



# MARES, CONTINENTES E CANAIS DE MARTE

Atti de' Lincei Mem. Cl. sc. fis. mat. Serie 5<sup>a</sup> Vol. II

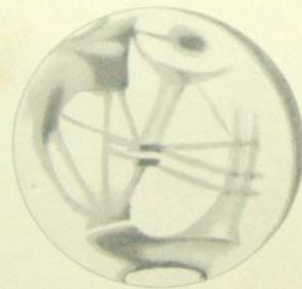
Schiaparelli - Osservazioni su Marte Tav. II



1884 Marzo 14  
lat - 22°



1884 Febbrajo 4  
lat - 24°



1884 Marzo 9  
lat - 71°

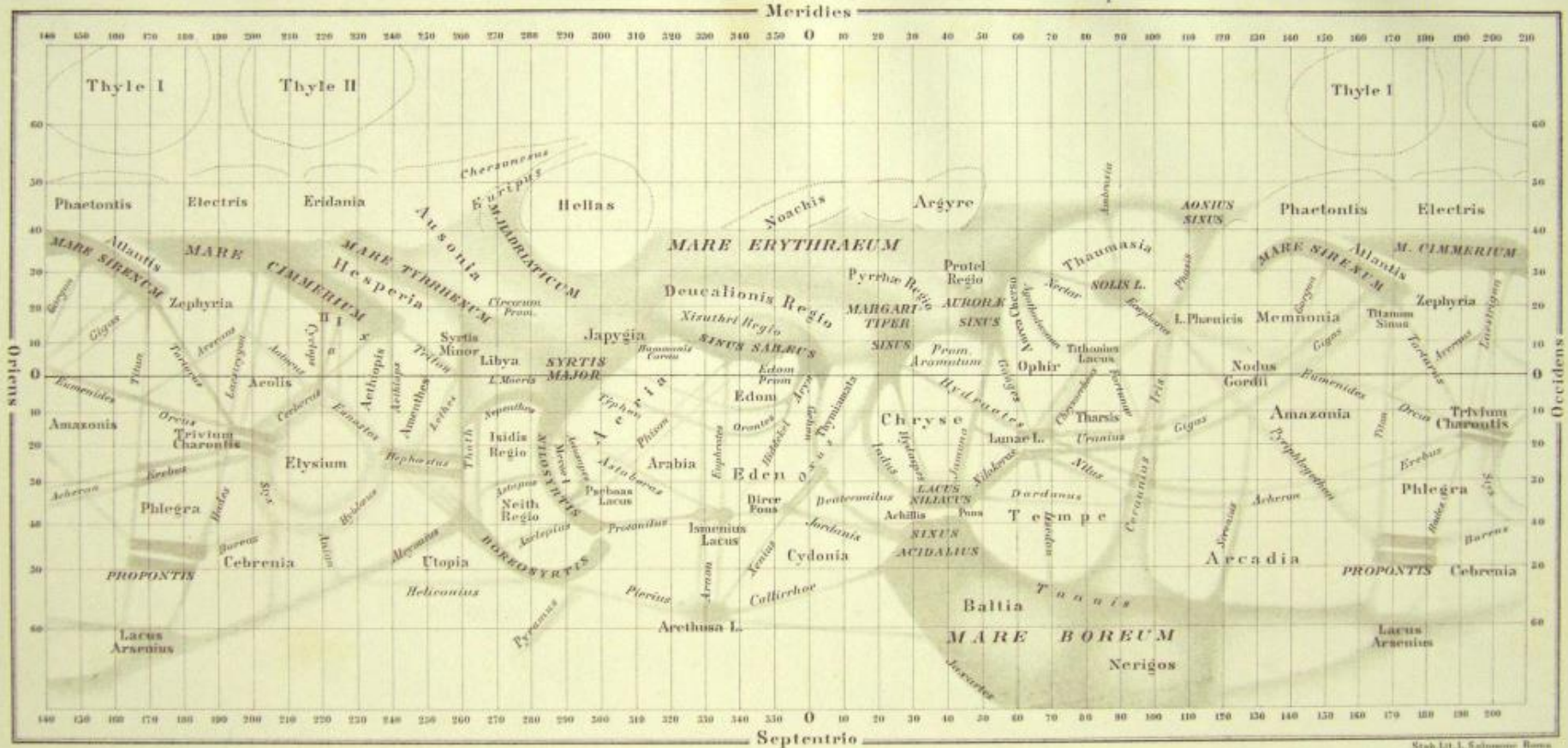


1884 Gennaio 25  
lat - 130°

# MAPA DE MARTE

Atti de' Lincei - Mem. Cl. sc. fis. ecc. Serie 5<sup>a</sup> Vol. II.

Schiaparelli - Osservazioni su Marte. Tav. I.



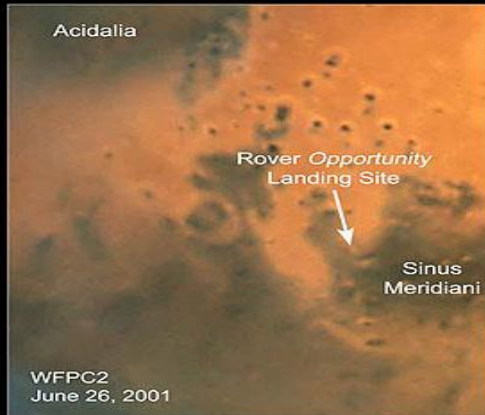
MARS 1883-84.

Stab. Lit. L. Salomonson Roma

# EUGÈNE M. ANTONIADI – GRÉCIA/FRANÇA - 1870 – 1944



Mars Dust Storm  
*Hubble Space Telescope*

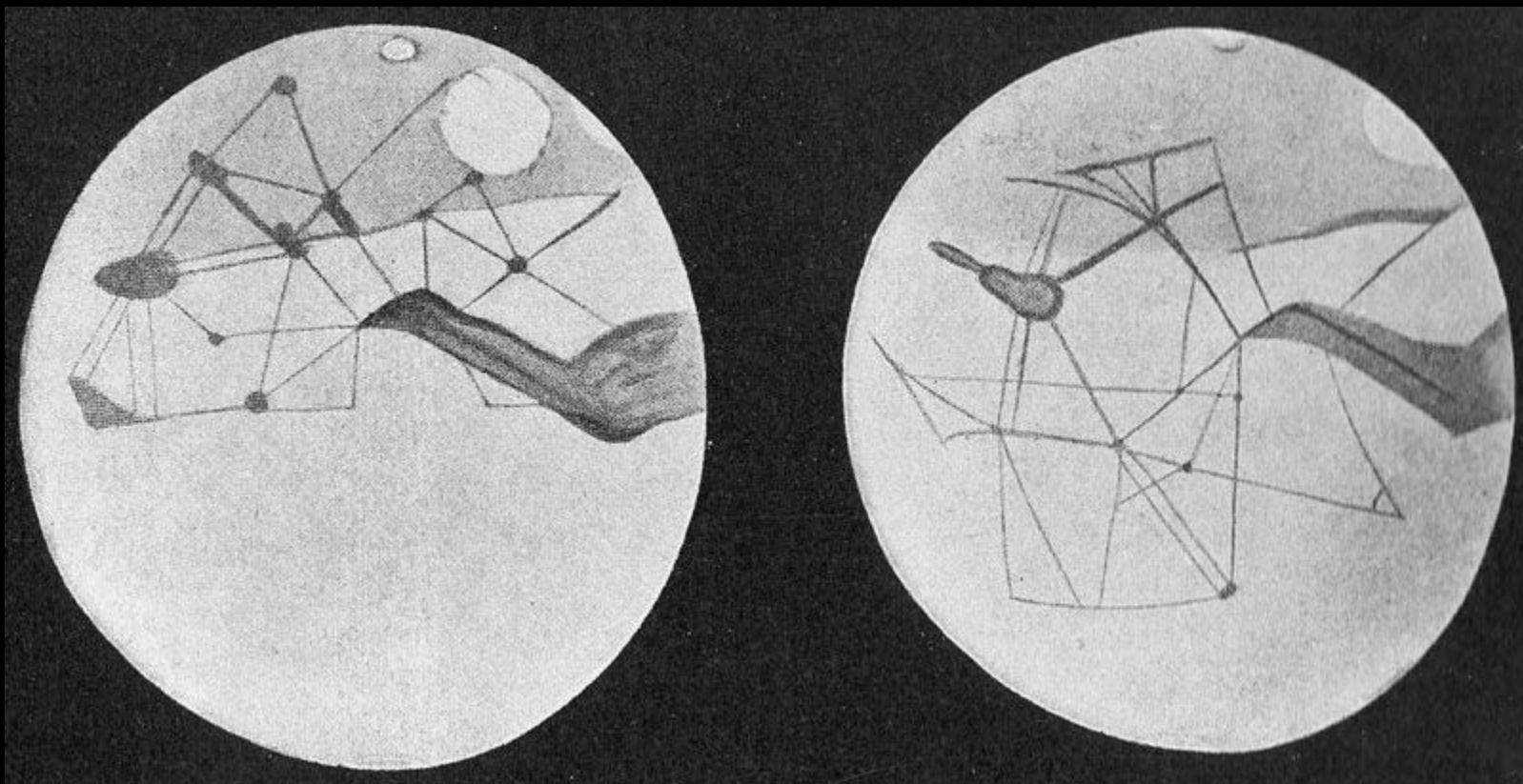


TEMPESTADES DE  
AREIA EM MARTE

PERCIVAL LOWELL - 1855 - 1916



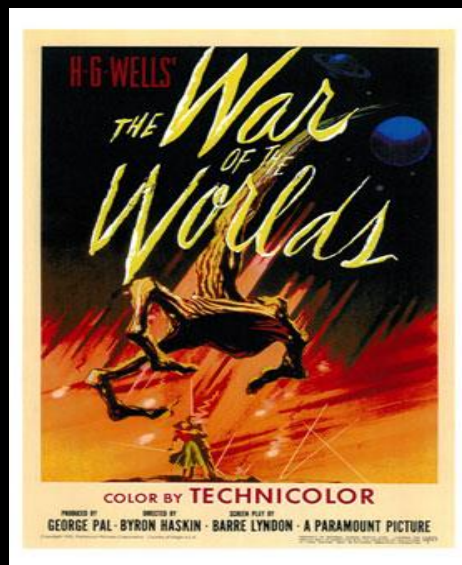
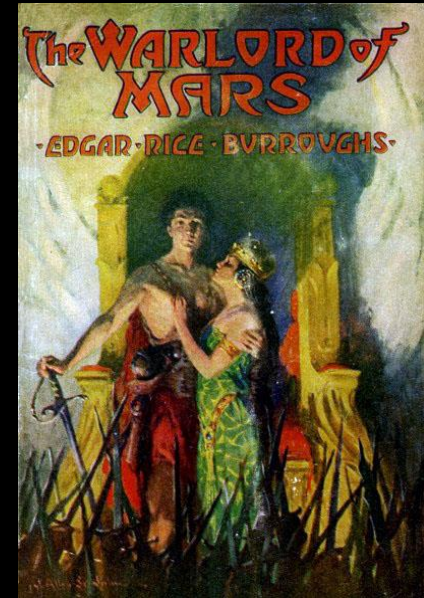
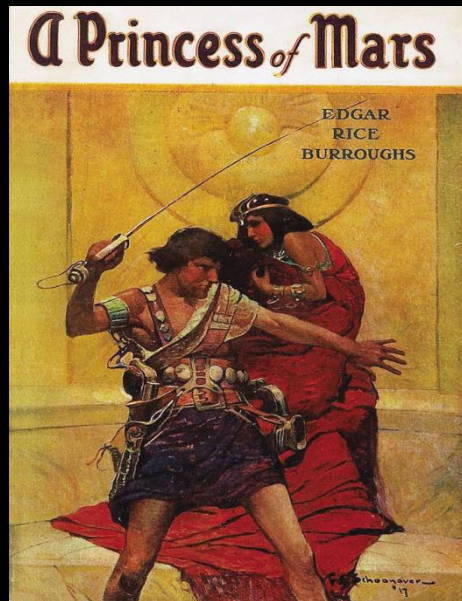
# CANAIS DE MARTE



# VIDA EM MARTE?



# CULTURA POPULAR



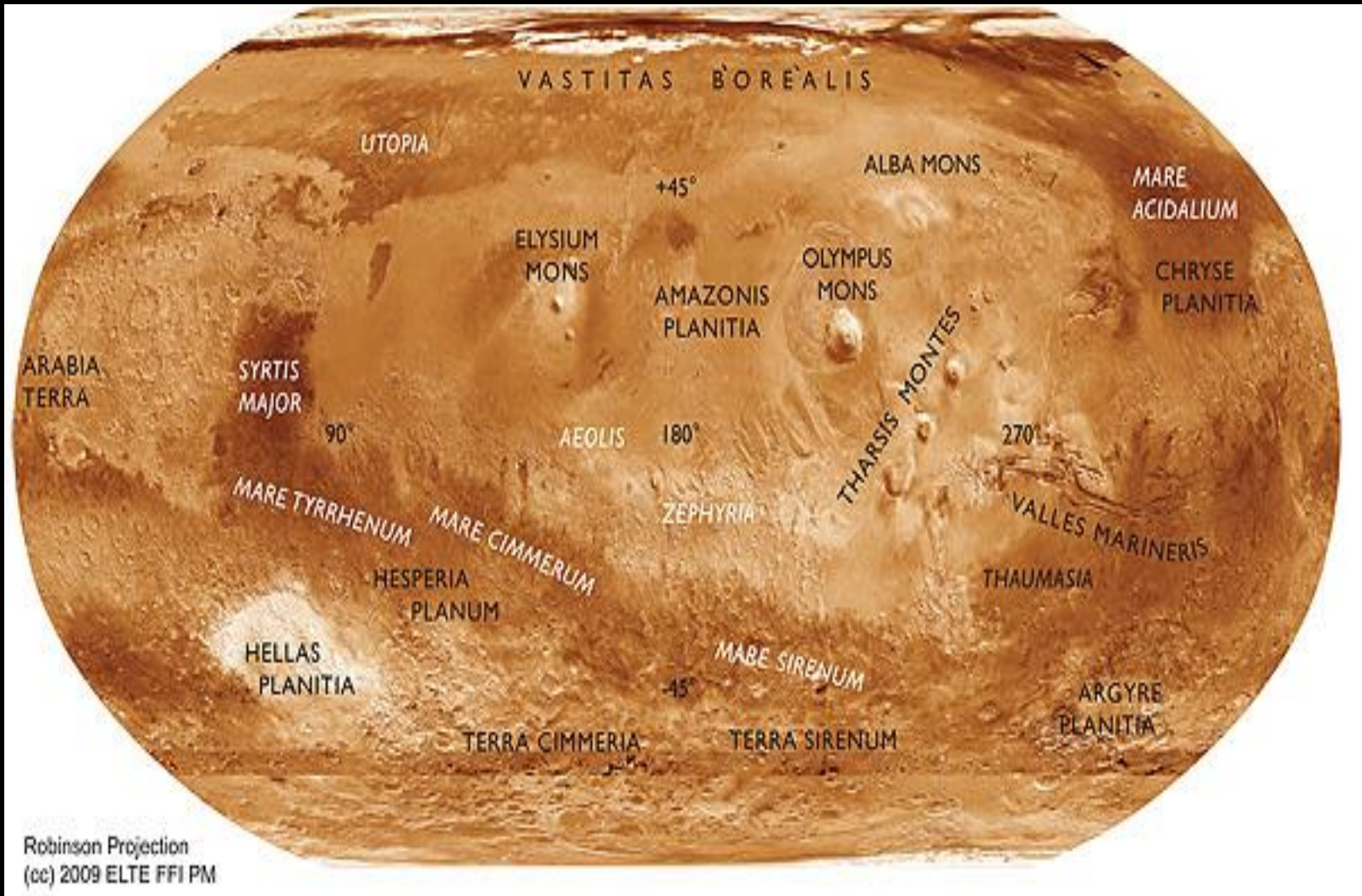
GERARD P. KUIPER - HOLANDA/MÉXICO  
1905 - 1973



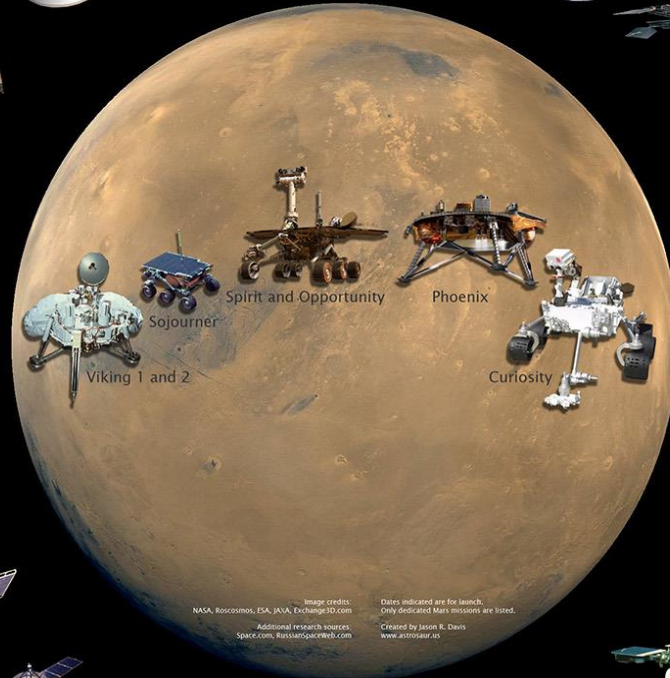
FINA CAMADA DE CO<sub>2</sub> NA  
ATMOSFERA



# DIVISÃO DAS FORMAÇÕES DE ALBEDO SEGUNDO A UNIÃO INTERNACIONAL DE ASTRONOMIA EM 1960



# Mars Exploration Family Portrait



40: Mars Science Laboratory Curiosity  
November 26, 2011   
Mission to Gale Crater

39: Phobos-Grunt  
November 8, 2011   
Stranded in Earth orbit

1, 2: MARS 1M No. 1 / MARS 1M No. 2  
October 10 / October 14, 1960   
Both destroyed during launch

38: Phoenix  
August 4, 2007   
Landed, dug for water

3, 4, 5, 8: MARS 2MV-4 No. 1 / Mars 1 / Mars 2MV-3 No. 1 / Zond 2  
October 24 / November 1 / November 4, 1962 / November 30, 1964   
Broke up in Earth orbit / Radio failure en route / Stranded in Earth orbit / Radio failure en route

37: Mars Reconnaissance Orbiter  
August 12, 2005   
Orbiting Mars

6, 7: Mariner 3 / Mariner 4  
November 5 / November 28, 1964   
Payload fairing failed to open / First flyby and picture return

35, 36: Mars Exploration Rovers Spirit and Opportunity  
June 10 / July 7, 2003   
Both landed on surface, Opportunity still in operation

9, 10: Mariner 6 / Mariner 7  
February 25 / March 27, 1969   
Both flew by, returned pictures

esa 34: Mars Express / Beagle 2 lander  
June 2, 2003  
Orbiting Mars, Beagle lost after separation

11, 12: Mars 1969 A / Mars 1969 B  
March 27 / April 2, 1969   
Both destroyed during launch

33: Mars Odyssey  
March 7, 2001   
Orbiting Mars

13, 17: Mariner 8 / Mariner 9  
May 8 / May 30, 1971   
Destroyed during launch / First probe to orbit Mars

32: Mars Polar Lander  
January 3, 1999   
Crashed on surface

14, 15, 16: Cosmos 419 / Mars 2 / Mars 3  
May 10 / May 19 / May 28, 1971   
Failed in Earth orbit / Lander crashed / Lander failed

31: Mars Climate Orbiter  
December 11, 1998   
Crashed due to imperial/metric unit mixup

18, 19, 20, 21: Mars 4 / Mars 5 / Mars 6 / Mars 7  
July 21 / July 25 / August 5 / August 9, 1973   
Missed planet / Orbed planet / Lander failed (6 and 7)

30: Nozomi  
July 4, 1998   
Missed planet

22, 23: Viking 1 / Viking 2  
August 20 / September 9, 1975   
Both landed on surface, returned data

29: Mars Pathfinder  
December 4, 1996   
Landed on surface, deployed Sojourner rover

24, 25: Phobos 1 / Phobos 2  
July 7 / July 12, 1988   
Lost communication en route / Lost communication near Phobos

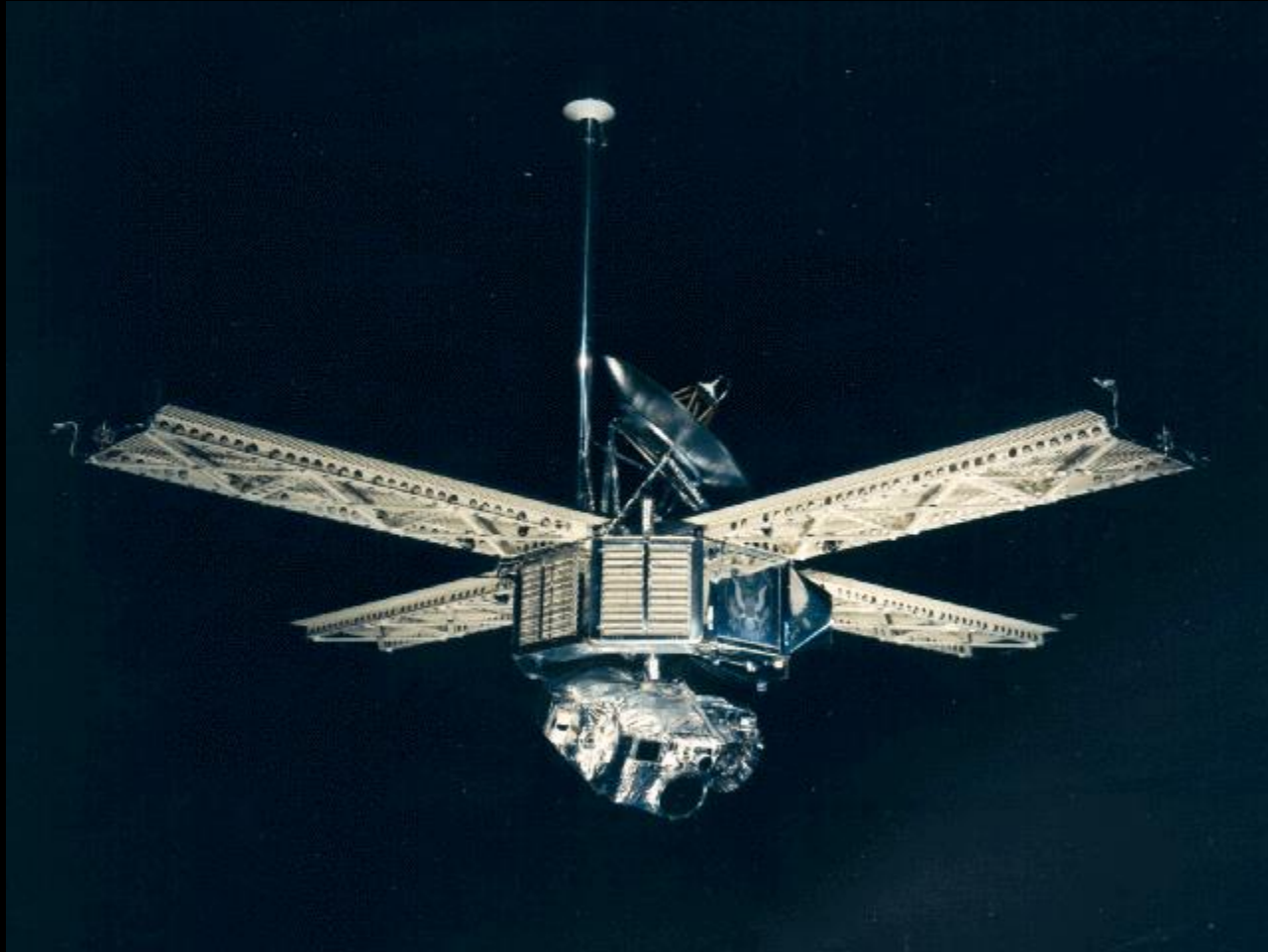
28: Mars 96  
November 16, 1996   
Destroyed during launch

26: Mars Observer  
September 25, 1992   
Lost communication near Mars

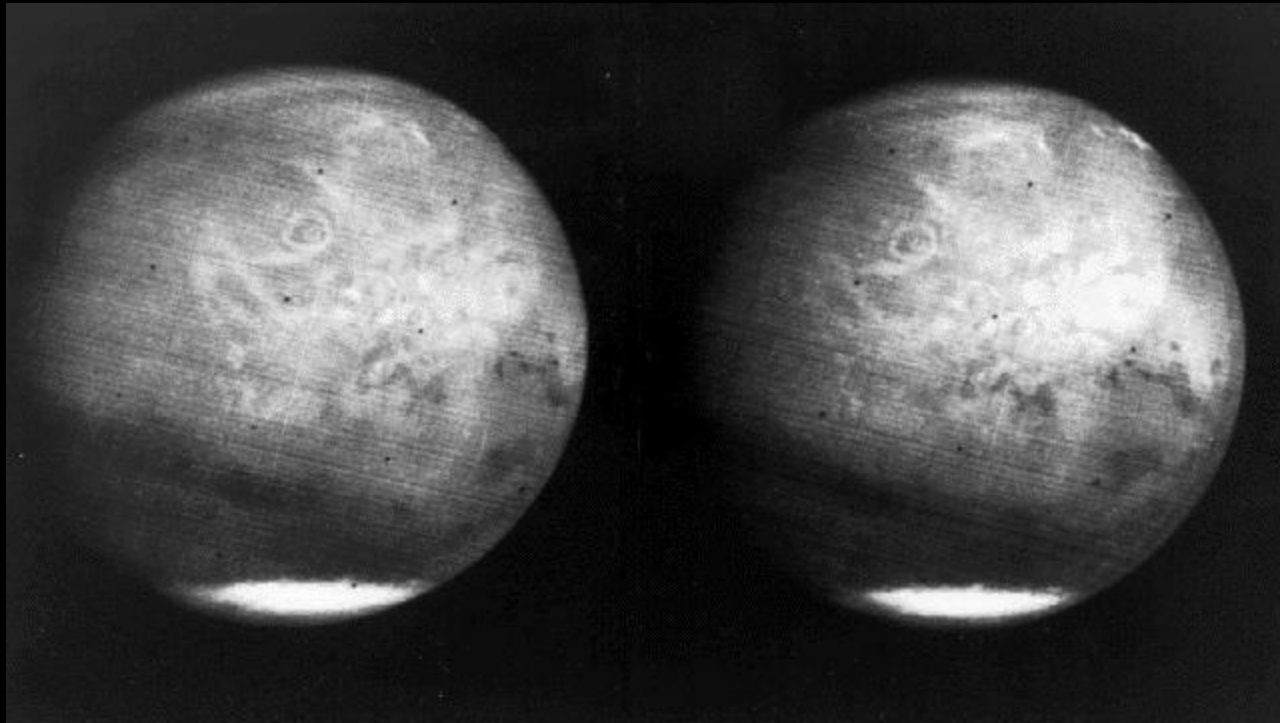
27: Mars Global Surveyor  
November 7, 1996   
Orbited and returned data

Image credits: NASA, Roscosmos, ESA, JAXA, Exchange3D.com  
Additional research sources: Space.com, RussianSpaceWeb.com  
Dates dedicated are for launch. Only dedicated Mars missions are listed.  
Created by Jason R. Davis  
www.astronautix.com

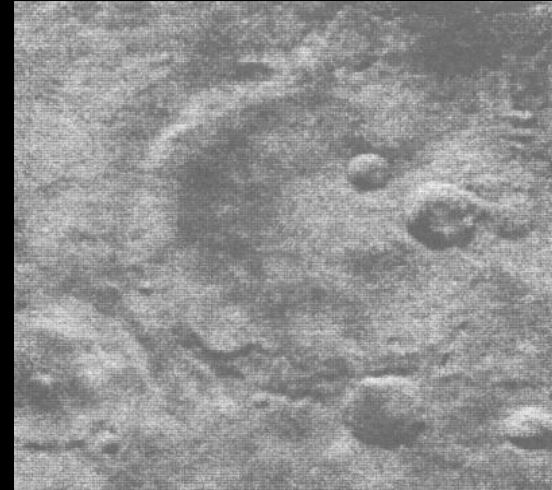
U.S. MARINER, MARS  
(NASA) DÉCADAS DE  
60 E 70



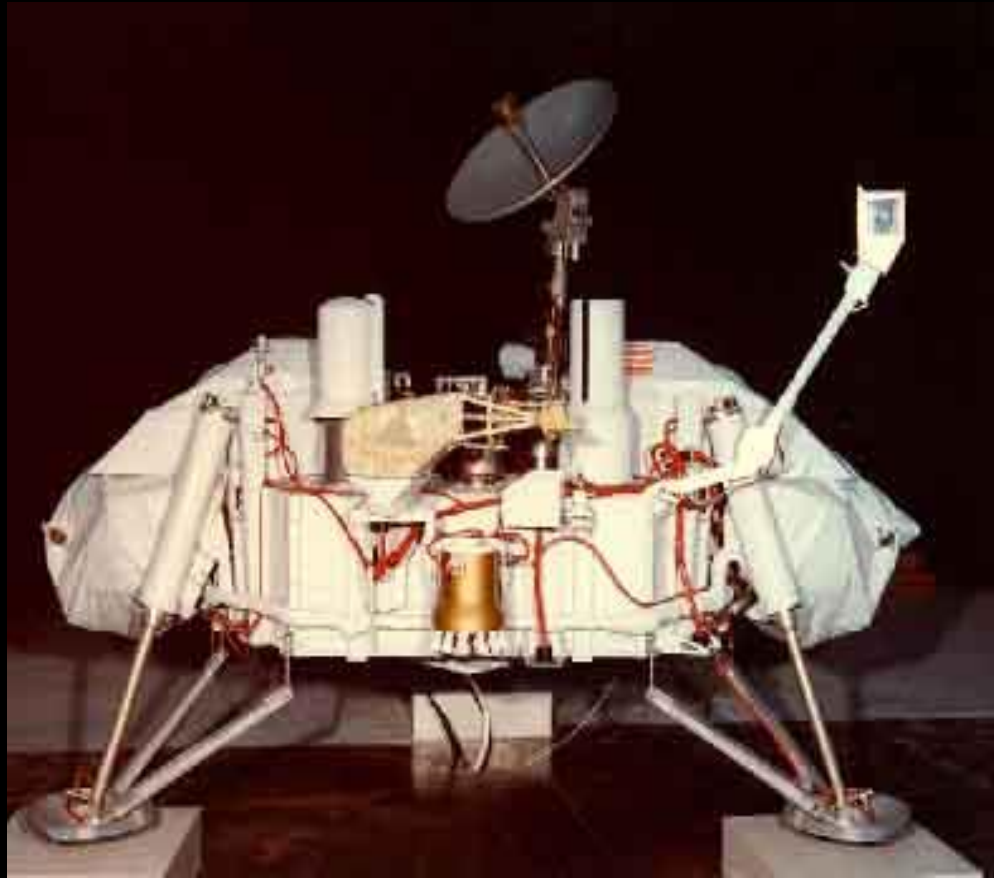
PRIMEIRAS IMAGENS DE MARTE OBTIDAS DO ESPAÇO



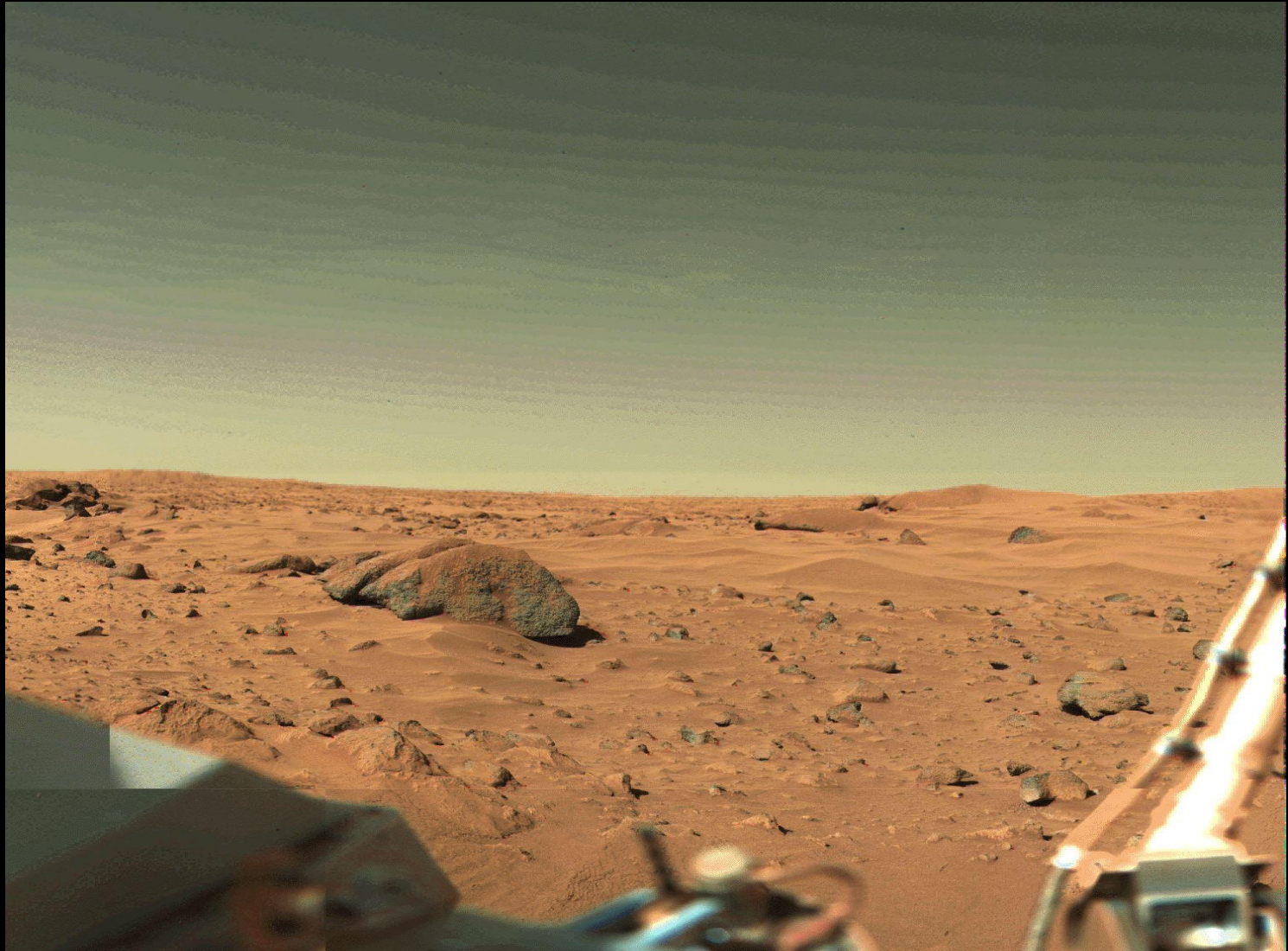
# PRIMEIROS DETALHES DA SUPERFÍCIE



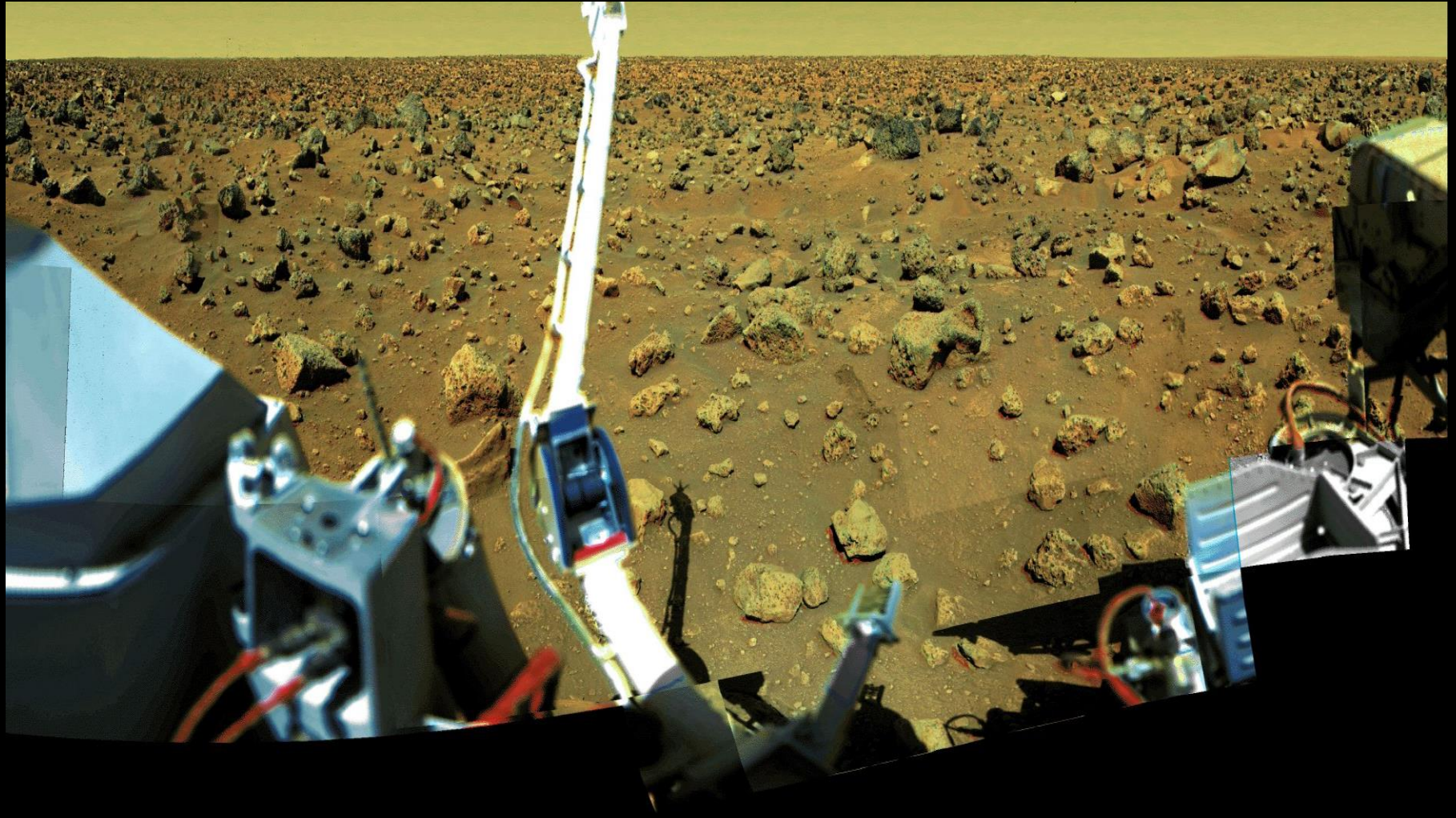
## VIKING 1 E 2- DÉCADA DE 70



# SUPERFÍCIE DE MARTE



# SUPERFÍCIE DE MARTE





# DÚVIDAS

?

CONTATO: [ROBSON.EGEA@GMAIL.COM](mailto:ROBSON.EGEA@GMAIL.COM)

FIM!