MEC-1 PROTOTYPE

MARS

NOTES

This chart was prepared with the advisory assistance of E. C. Slipher of the Lowell Observatory, Flagstaff, Arizona.

CONTROL

The principal sources for establishing positions on the Martian surface have been E. C. Slipher and Gerard de Vaucouleurs. The Slipher positions were derived from the Mars Globes of the Lowell Observatory. These globes incorporate the observations of Percival Lowell, as well as those of E. C. Slipher. The de Vaucouleurs material is a compilation of positions of features as reduced from 32 drawings made in 1958.

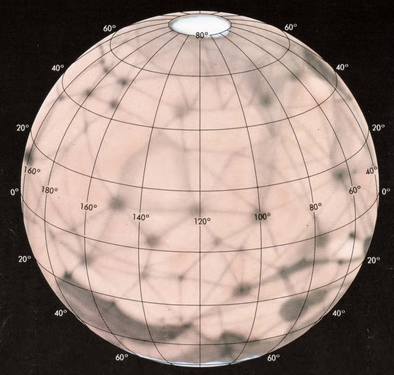
NOMENCLATURE

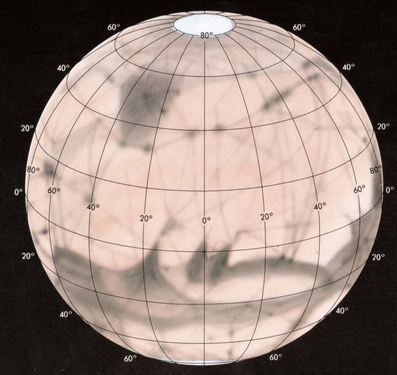
Feature names are selected from the standard Maps of Mars and the list of nomenclature as prepared and approved by the International Astronomical Union.

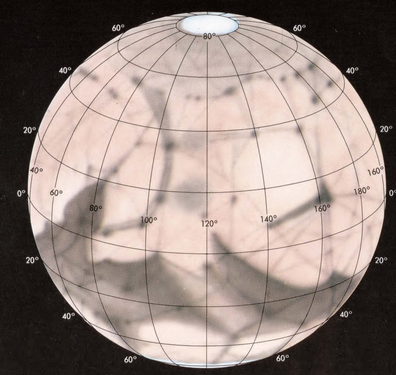
ORIENTATION

The orientation of cardinal directions is in agreement with the precedent established by the International Astronomical Union for Lunar cartography, that is viewed from above the North pole of rotation, the planet would have a counter-clockwise sense of rotation, points moving west to east.

NORTHERN SUMMER - POLE TILTED 21° TO OBSERVER

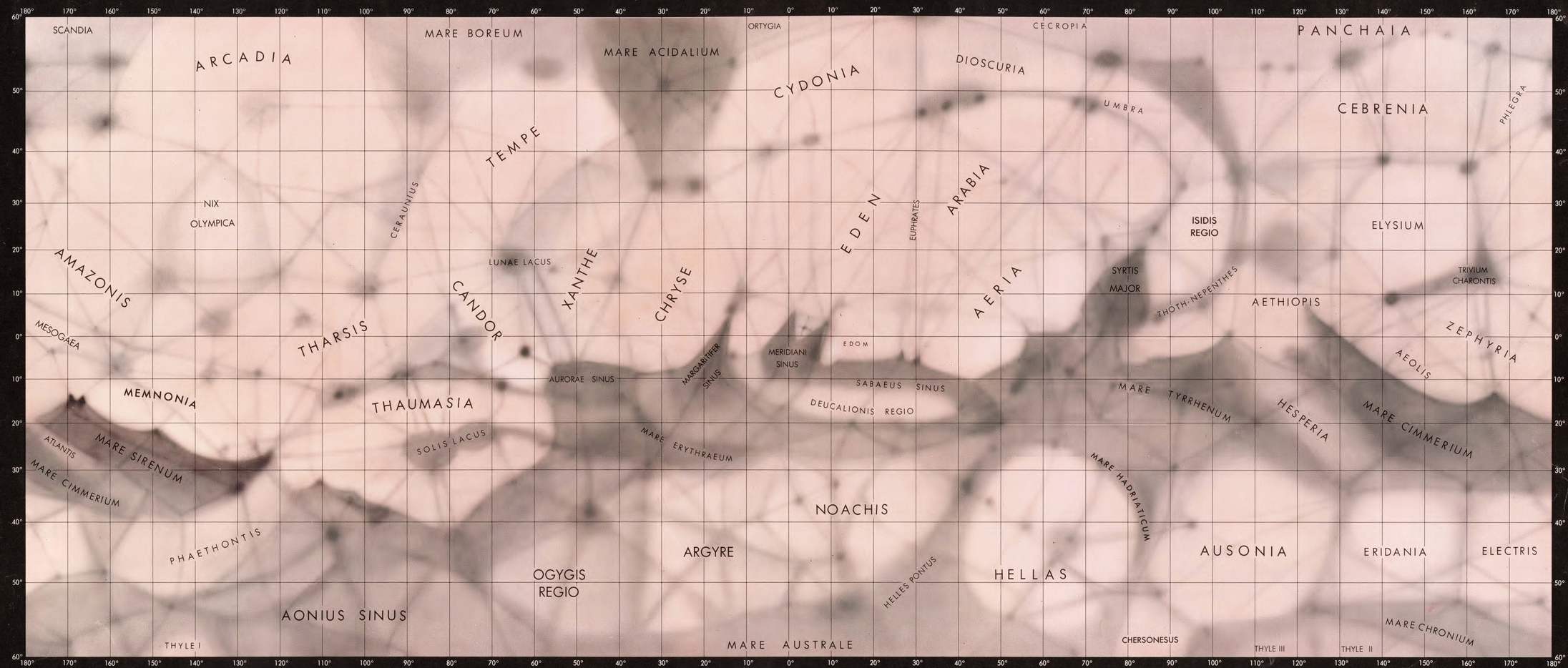


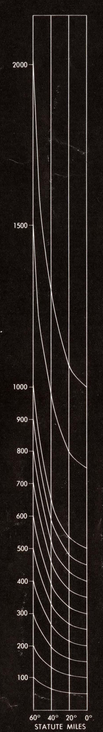




STATISTICAL DATA

Orbit:	Mean distance from sun	228 million km (141 million mi)
	Eccentricity	0.093
	Inclination of orbit with respect to invariant plane	1°51′
	Period of revolution about sun	686d 23h 30m 41s
Distance from Earth:		56 to 399 million km (35 to 248 million mi)
Maximum Apparent Visual Magnitude:		-2.8m
Rotation:	Inclination of rotational axis with respect to orbit plane	25°
	Period of rotation	24h 37m 22.6s
Physical:	Mean diameter	6780 km (4210 mi)
	Oblateness	0.0052
	Volume	0.15 (Earth = 1)
	Mass	0.1077 (Earth = 1)
	Density	3.96 g/cc
	Surface gravity	0.38 (Earth = 1)
	Velocity of escape	5.09 km/sec (3.16 mi/sec)





SURFACE FEATURES

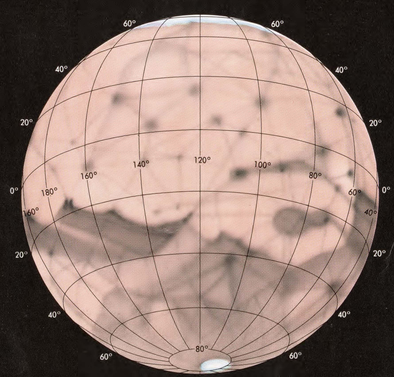
The surface of Mars is not constant in appearance but varies in several respects, both periodic and irregular. The inclination of the axis of rotation of about 25° presents changing direction of viewing from the Earth, as well as variable direction of illumination of the planet by the Sun. This produces Martian seasonal changes which include the change in colorations of surface features and the advance and recession of polar caps and clouds. The maximum extent of polar coverage is:

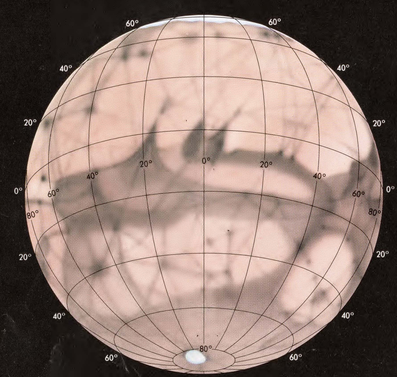
Northern Winter-Cap from pole to 64°N latitude, clouds to 40°N

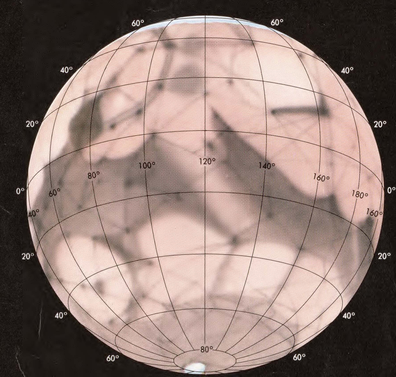
Southern Winter-Cap from pole to 55°S latitude, clouds to 40°S

The linear features are representative of the "canals" as they have been drawn by many prominent observers of Mars. Colors adopted are those derived from visual observations and tricolor photographs by E. C. Slipher.

Occasional dust storms occur which obscure much of the surface from observation.







SOUTHERN SUMMER - POLE TILTED 21° TO OBSERVER

SATELLITES

	Phobos	Deimos
Mean Distance from Mars	9,350 km (5,810 mi)	23,400 km (14,500 mi)
Orbital Eccentricity	0.017	0.003
Period of Revolution	7h 39m 13s	30h 17m 17s
Orbital Inclination to Mars Equator	1.0°	1.3°
Apparent Visual Magnitude at Mean Opposition	11.6 m	12.8 m
Color (B-V)	0.6	0.6
Diameter	19 km (12 mi)	10 km (6 mi)

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MEC-1 PROTOTYPE
Mercator Projection
Scale 1:35,000,000 at Equator