

NOTES ON BASE

This map is one in a series covering the entire surface of Mars at a nominal scale of 1:5,000,000. The series was originally compiled from Mariner 9 data (Bates and others, 1979). The original shaded relief base was revised and augmented with image data from Viking Orbiter, but feature positions were not shifted to fit controls derived from Viking.

ADOPTED FIGURE

The figure of Mars used for the computation of the map projection is an oblate spheroid (flattening of 1/192) with an equatorial radius of 3,393.4 km and a polar radius of 3,375.7 km.

PROJECTION

The Mercator, Lambert Conformal Conic, and Polar Stereographic projections are used for this map series. The scale of the series is 1:5,000,000 at the equator. The projections have common scales of 1:4,336,000 at lat 120° and 1:4,336,000 at lat 165°. Standard parallels for the Lambert Conformal Conic projection are at lat ±35.8° and ±59.2°. Longitude increases to the west in accordance with astronomical convention for Mars. Latitude is geocentric.

CONTROL

Planimetric control of the shaded relief is provided by photogrammetric integration using Mariner 9 images (Davies, 1973; Davies and Arthur, 1978) and the radio-tracked position of the Mariner 9 spacecraft. The first meridian passes through the center of a small crater, Any-O (lat 5.1° S, long 0°), within the crater Any. Primary controls used in the network include the Viking Orbiter Secondary Experiment Data Record, radio-occultation measurements from both Mariner 9 and Viking Missions (Lundell and others, 1972; Khore and others, 1973; Lundell and others, 1971; Downs and others, 1975), and the Mars primary control network of the Rand Corporation (Davies and others, 1978).

MAPPING TECHNIQUE

Shaded relief was portrayed by photointerpretive methods described by Inge and Bridges (1976). Uniform sun illumination from the west was used throughout. The original rendition of feature positions, sizes, and shapes was taken from a controlled base mosaic of Mariner 9 images. Various computer enhancements of many Mariner 9 and Viking Orbiter images besides those in the base mosaic were examined in an attempt to portray the surface as accurately as possible. Initial shaded relief analysis and representation based on Viking Orbiter data were made by Patricia M. Bridges; revisions were made by Barbara J. Hall.

COLOR

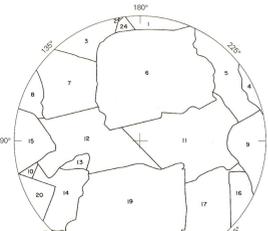
No attempt was made on the map to duplicate precisely the color of the martian surface, although the color used may approximate it.

NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (IAU), 1974, 1977, 1986, 1990, 1992. MC-1, Abbreviation for Mars Chart 1. M 5M 90/0 RN, Abbreviation for Mars 1:5,000,000 series; center of sheet, lat 90° N, long 0°; shaded relief map (R) with nomenclature (N).

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A camera pictures

Index No.	DAS No.
1	12126807
2	8011803
3	1220606
4	1180211
5	1180551
6	1187149
7	1202279
8	1182314
9	1182210
10	1023227
11	1182270
12	1182292
13	1181074
14	1182321
15	1182880
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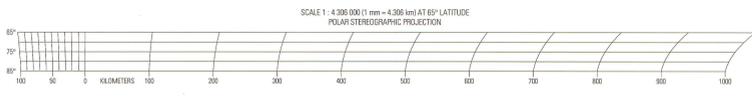
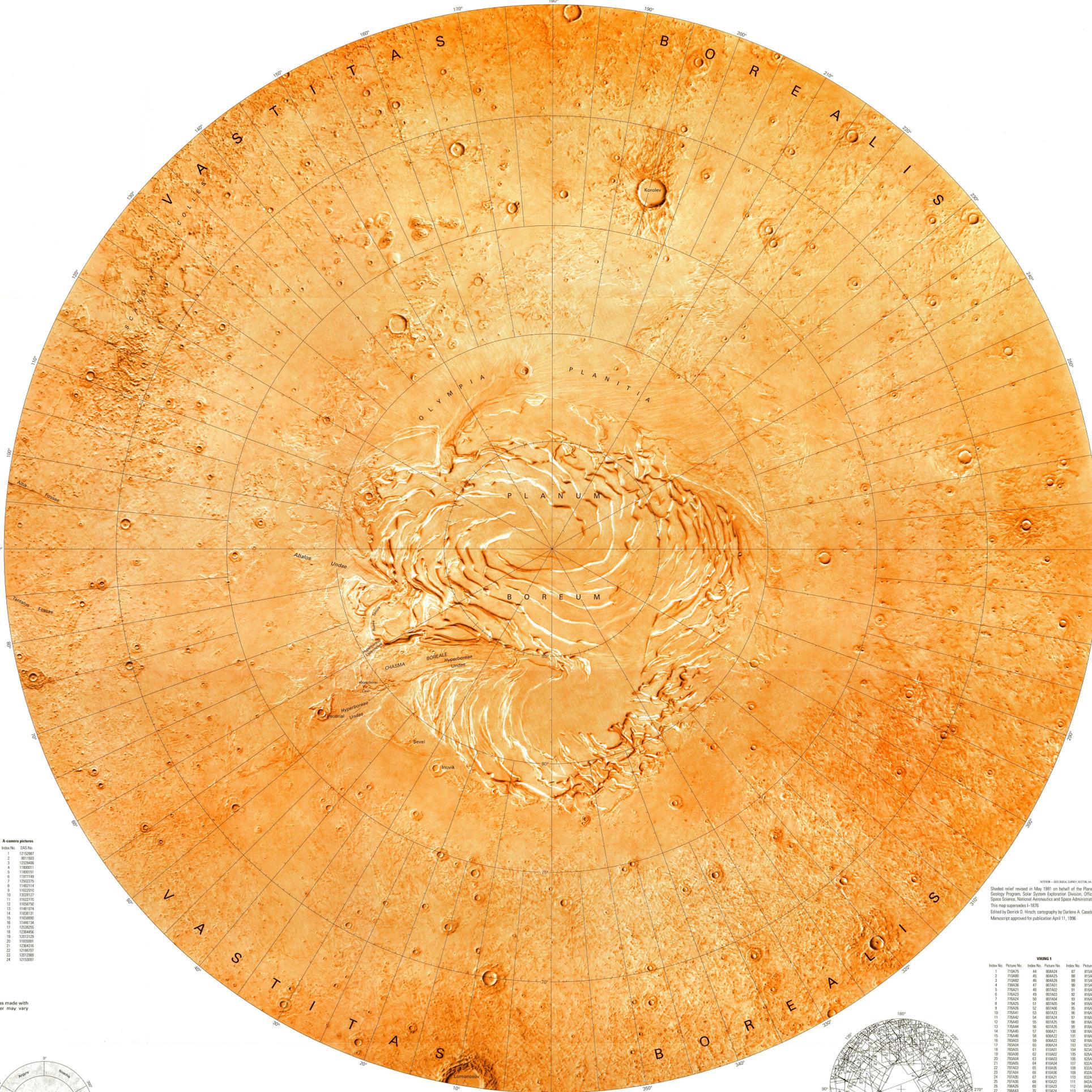
The mosaic used to control the positioning of features on this map was made with the Mariner 9 A-camera pictures outlined above. The DAS number may vary slightly (usually by 5) among different versions of the same picture.



Quadrangle	Scale	Center (Lat, Long)
Deimos (MC-2)	M 48710	(-8801) (-1382)
Ceres (MC-3)	M 48710	(-8801) (-1473)
Phobos (MC-4)	M 48710	(-8801) (-1574)
Phobos (MC-5)	M 48710	(-8801) (-1665)
Phobos (MC-6)	M 48710	(-8801) (-1756)
Phobos (MC-7)	M 48710	(-8801) (-1847)
Phobos (MC-8)	M 48710	(-8801) (-1938)
Phobos (MC-9)	M 48710	(-8801) (-2029)
Phobos (MC-10)	M 48710	(-8801) (-2120)
Phobos (MC-11)	M 48710	(-8801) (-2211)
Phobos (MC-12)	M 48710	(-8801) (-2302)
Phobos (MC-13)	M 48710	(-8801) (-2393)
Phobos (MC-14)	M 48710	(-8801) (-2484)
Phobos (MC-15)	M 48710	(-8801) (-2575)
Phobos (MC-16)	M 48710	(-8801) (-2666)
Phobos (MC-17)	M 48710	(-8801) (-2757)
Phobos (MC-18)	M 48710	(-8801) (-2848)
Phobos (MC-19)	M 48710	(-8801) (-2939)
Phobos (MC-20)	M 48710	(-8801) (-3030)
Phobos (MC-21)	M 48710	(-8801) (-3121)
Phobos (MC-22)	M 48710	(-8801) (-3212)
Phobos (MC-23)	M 48710	(-8801) (-3303)
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Phobos (MC-30)	M 48710	(-8801) (-3940)
Phobos (MC-31)	M 48710	(-8801) (-4031)
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Phobos (MC-33)	M 48710	(-8801) (-4213)
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Phobos (MC-40)	M 48710	(-8801) (-4850)
Phobos (MC-41)	M 48710	(-8801) (-4941)
Phobos (MC-42)	M 48710	(-8801) (-5032)
Phobos (MC-43)	M 48710	(-8801) (-5123)
Phobos (MC-44)	M 48710	(-8801) (-5214)
Phobos (MC-45)	M 48710	(-8801) (-5305)
Phobos (MC-46)	M 48710	(-8801) (-5396)
Phobos (MC-47)	M 48710	(-8801) (-5487)
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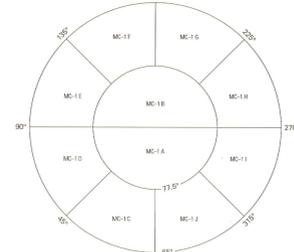
Number preceded by 1 refers to published shaded relief map. (Number in brackets refers to earlier map superseded by revised version.)

NOTE TO USERS
Users noting errors or omissions are urged to indicate them on this map. However it is U.S. Geological Survey, Reston, Virginia 20192. A replacement copy will be returned.



VIKING 1

Index No.	Picture No.	Index No.	Picture No.	Index No.	Picture No.
1	770476	44	80424	87	815423
2	770480	45	80425	88	815424
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4	770488	47	80427	90	815426
5	770492	48	80428	91	815427
6	770496	49	80429	92	815428
7	770500	50	80430	93	815429
8	770504	51	80431	94	815430
9	770508	52	80432	95	815431
10	770512	53	80433	96	815432
11	770516	54	80434	97	815433
12	770520	55	80435	98	815434
13	770524	56	80436	99	815435
14	770528	57	80437	100	815436
15	770532	58	80438	101	815437
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17	770540	60	80440	103	815439
18	770544	61	80441	104	815440
19	770548	62	80442	105	815441
20	770552	63	80443	106	815442
21	770556	64	80444	107	815443
22	770560	65	80445	108	815444
23	770564	66	80446	109	815445
24	770568	67	80447	110	815446
25	770572	68	80448	111	815447
26	770576	69	80449	112	815448
27	770580	70	80450	113	815449
28	770584	71	80451	114	815450
29	770588	72	80452	115	815451
30	770592	73	80453	116	815452
31	770596	74	80454	117	815453
32	770600	75	80455	118	815454
33	770604	76	80456	119	815455
34	770608	77	80457	120	815456
35	770612	78	80458	121	815457
36	770616	79	80459	122	815458
37	770620	80	80460	123	815459
38	770624	81	80461	124	815460
39	770628	82	80462	125	815461
40	770632	83	80463	126	815462
41	770636	84	80464	127	815463
42	770640	85	80465	128	815464



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1-110 MC-1-H
1-111 MC-1-I
1-112 MC-1-J
1-113 MC-1-K
1-114 MC-1-L

This shaded relief map has been revised by utilizing 1:2,000,000-scale controlled photogrammets and supplementary Viking pictures outlined above. Copies of various enhancements of these pictures are available from National Science Data Center, Code 601, Goddard Space Flight Center, Greenbelt, MD 20771.

REVISIED SHADED RELIEF MAP OF THE MARE BOREUM REGION (MC-1) OF MARS

