

NOTES ON BASE
This is one map in a series of topographic map sheets covering the entire surface of Mars at nominal scales of 1:25,000,000 and 1:5,000,000 (Olson, 1973, 1976). The major sources of map data were the Mariner 9 television experiment (Mausury and others, 1970) and Viking Orbiter pictures.

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 3393.8 km and a polar radius of 3375.7 km.

PROJECTION
The Lambert conformal conic projection is used for this sheet with standard parallels at -35° and -52°. A scale of 1:5,000,000 at lat -30° was chosen to match the scale at lat -30° of the adjacent Mercator projections. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1973). Latitudes are areographic (de Vaucouleurs and others, 1973).

CONTROL
Planimetric control is provided by photogrammetric triangulation using Mariner 9 pictures (Davies, 1973; Davies and Arthur, 1973) and the radiometric position of the spacecraft. The first meridian passes through the crater Atrio-O (lat -10°) within the crater Atrio. No simple statement is possible for the precision, but local consistency is about 10 km.

MAPPING TECHNIQUE
A series of mosaics of Mariner 9 pictures was assembled at 1:5,000,000, on Lambert conformal conic projection.

Shaded relief was portrayed with uniform illumination with the sun to the west, using airbrush techniques described by Inge (1972), and Inge and Bridges (1976). Size, shape, and position of features were taken from the base mosaic. Computer enhancements of many Mariner 9 and Viking Orbiter pictures besides those in the base mosaic were examined in an attempt to portray the surface as accurately as possible. (Computer enhancement of Mariner 9 pictures is described by Levinthal and others, 1973, and Green and others, 1973.)

Shaded relief analysis and representation were made by Patricia M. Bridges.

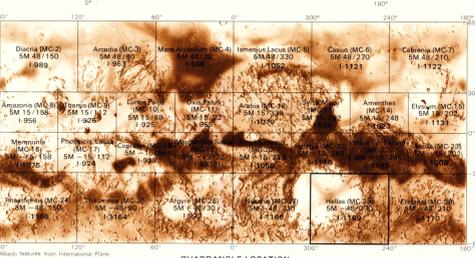
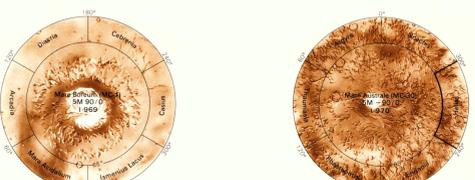
COLOR
No attempt was made on the map to duplicate precisely the color of the Martian surface, although the color used does approximate it.

NOMENCLATURE
All names on this sheet are approved by the International Astronomical Union (IAU, 1974, 1980). Double and triple letter designations for craters refer to position on the map and are derived from a grid based on equidistant meridians and parallels, the alphabet (I and O omitted) runs in the direction of increasing longitude (W) and latitude (N). The complete designation of a crater is the name of the quadrangle followed by double or triple letters. The prefix HEL (identifying the Hellas quadrangle) is part of the complete designation but, for brevity, is not shown on most craters. Some craters have commemorative names; letter designations for these craters are shown in parentheses. Where craters lie exactly on the boundary of two maps, their letters are derived from the eastern or southern map.

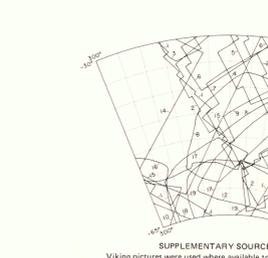
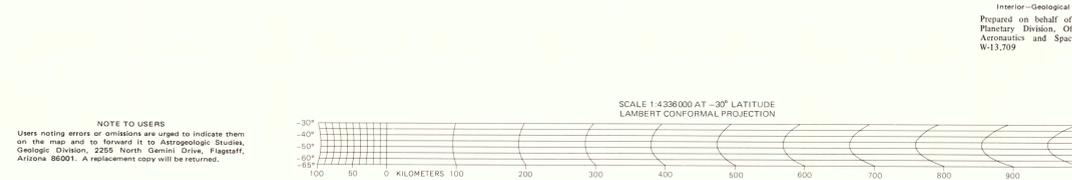
MC-28 Abbreviation for Mars Chart
M 5M-48/270 R Abbreviation for Mars 1:5,000,000 series; center of sheet, lat -48°, long 270°; shaded-relief map, R.

REFERENCES

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QUADRANGLE LOCATION
Number preceded by 1 refers to published shaded relief map.



SUPPLEMENTARY SOURCE INDEX
Viking pictures were used where available to clarify Mariner 9 data. The outline for each sequence of pictures is shown.

SCALE 1:4,336,000 AT -30° LATITUDE
LAMBERT CONFORMAL PROJECTION

VIKING 1		VIKING 2	
Index No.	Picture No.	Index No.	Picture No.
1	95A29	1	172B10
1	95A30	2	172B11
1	95A31	3	172B12
1	95A32	4	172B13
1	95A33	5	172B14
1	95A34	6	172B15
1	95A35	7	172B16
1	95A36	8	172B17
1	95A37	9	172B18
1	95A38	10	172B19
1	95A39	11	172B20
1	95A40	12	172B21
1	95A41	13	172B22
1	95A42	14	172B23
1	95A43	15	172B24
1	95A44	16	172B25
1	95A45	17	172B26
1	95A46	18	172B27
1	95A47	19	172B28
1	95A48	20	172B29
1	95A49	21	172B30
1	95A50	22	172B31
1	95A51	23	172B32
1	95A52	24	172B33
1	95A53	25	172B34
1	95A54	26	172B35
1	95A55	27	172B36
1	95A56	28	172B37
1	95A57	29	172B38
1	95A58	30	172B39
1	95A59	31	172B40
1	95A60	32	172B41
1	95A61	33	172B42
1	95A62	34	172B43
1	95A63	35	172B44
1	95A64	36	172B45
1	95A65	37	172B46
1	95A66	38	172B47
1	95A67	39	172B48
1	95A68	40	172B49
1	95A69	41	172B50
1	95A70	42	172B51
1	95A71	43	172B52
1	95A72	44	172B53
1	95A73	45	172B54
1	95A74	46	172B55
1	95A75	47	172B56
1	95A76	48	172B57
1	95A77	49	172B58
1	95A78	50	172B59
1	95A79	51	172B60
1	95A80	52	172B61
1	95A81	53	172B62
1	95A82	54	172B63
1	95A83	55	172B64
1	95A84	56	172B65
1	95A85	57	172B66
1	95A86	58	172B67
1	95A87	59	172B68
1	95A88	60	172B69
1	95A89	61	172B70
1	95A90	62	172B71
1	95A91	63	172B72
1	95A92	64	172B73
1	95A93	65	172B74
1	95A94	66	172B75
1	95A95	67	172B76
1	95A96	68	172B77
1	95A97	69	172B78
1	95A98	70	172B79
1	95A99	71	172B80
1	95A00	72	172B81
1	95A01	73	172B82
1	95A02	74	172B83
1	95A03	75	172B84
1	95A04	76	172B85
1	95A05	77	172B86
1	95A06	78	172B87
1	95A07	79	172B88
1	95A08	80	172B89
1	95A09	81	172B90
1	95A10	82	172B91
1	95A11	83	172B92
1	95A12	84	172B93
1	95A13	85	172B94
1	95A14	86	172B95
1	95A15	87	172B96
1	95A16	88	172B97
1	95A17	89	172B98
1	95A18	90	172B99
1	95A19	91	172B00
1	95A20	92	172B01
1	95A21	93	172B02
1	95A22	94	172B03
1	95A23	95	172B04
1	95A24	96	172B05
1	95A25	97	172B06
1	95A26	98	172B07
1	95A27	99	172B08
1	95A28	100	172B09

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W-13,709

INDEX TO MARINER 9 PICTURES
The mosaic used to control the positioning of features on this map was made with the Mariner 9 A-camera pictures outlined above. Useful coverage is not available in the cross-hatched areas. The DAS number may vary slightly locally by 61 among various versions of the same picture.

Index No.	DAS No.	Index No.	DAS No.
1	5743360	25	5956548
2	6621244	26	6005084
3	6621245	27	6005085
4	6621246	28	6005086
5	6815358	29	6011188
6	6815359	30	6011189
7	6815360	31	6011190
8	6815361	32	6011191
9	6815362	33	6011192
10	6815363	34	6011193
11	6815364	35	6011194
12	6815365	36	6011195
13	6815366	37	6011196
14	6815367	38	6011197
15	6815368	39	6011198
16	6815369	40	6011199
17	6815370	41	6011200
18	6815371	42	6011201
19	6815372	43	6011202
20	6815373	44	6011203
21	6815374	45	6011204
22	6815375	46	6011205
23	6815376	47	6011206
24	6815377	48	6011207

SHADED RELIEF MAP OF THE HELLAS QUADRANGLE OF MARS

MC-28
M 5M-48/270 R
1979



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