NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Technical Memorandum 33-585

Volume I, Addendum 1

Mariner Mars 1971 Television Picture Catalog

Experiment Design and Picture Data

Dennis Crosby

JET PROPULSION LABORATORY

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA

August 15, 1974

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 33-585, Vol. I Addendum 1	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle MARINER MARS 1971 TELEVISION PICTURE CATALOG EXPERIMENT DESIGN AND PICTURE DATA		5. Report Date August 15, 1974 6. Performing Organization Code
7. Author(s) Dennis Crosby		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered Technical Memorandum
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code
15. Supplementary Notes		

16. Abstract

This addendum to the Mariner Mars 1971 Television Picture Catalog, Volume I, comprises footprint plots of the Mariner 9 television mapping of the Martian surface from Rev 100 through Rev 676 and catalogs of the pictures and their quadrangle locations.

17. Key Words (Selected by Author(s))	18. Distribution Statement		
Mariner Mars 1971 Project Planetary Exploration, Advanced Planetary Surfaces Planetary Mapping	Unclassified -- Unlimited		
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 49	22. Price

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7. Author(s). Include corresponding information from the report cover. In addition, list the affiliation of an author if it differs from that of the performing organization.

8. Performing Organization Report No. Insert if performing organization wishes to assign this number.

10. Work Unit No. Use the agency-wide code (for example, 923-50-10-06-72), which uniquely identifies the work unit under which the work was authorized. Non-NASA performing organizations will leave this blank.

11. Insert the number of the contract or grant under which the report was prepared.

15. Supplementary Notes. Enter information not included elsewhere but useful, such as: Prepared in cooperation with... Translation of (or by)... Presented at conference of... To be published in...

16. Abstract. Include a brief (not to exceed 200 words) factual summary of the most significant information contained in the report. If possible, the abstract of a classified report should be unclassified. If the report contains a significant bibliography or literature survey, mention it here.

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TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 33-681	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle MARINER MARS 1971 ATTITUDE CONTROL SUBSYSTEM		5. Report Date September 15, 1974 6. Performing Organization Code
7. Author(s) Rance S. Edmunds		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered Technical Memorandum
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

The Mariner Mars 1971 attitude control subsystem (ACS) is a three-axis stabilized system that evolved from the Ranger and early Mariner designs. It is comprised of a Sun sensor set, a Canopus tracker, an inertial reference unit, two Cold Gas Reaction Control Assemblies, two rocket engine gimbal actuators, and an attitude control electronics unit. The subsystem has the following eight operating modes: launch, Sun acquisition, roll search, celestial cruise, all-axes inertial, roll inertial, commanded turn, and thrust vector control.

In the celestial cruise mode, the position control is held to ±0.25 deg. Commanded turn rates are ±0.18 deg/s. The attitude control logic in conjunction with command inputs from other spacecraft subsystems establishes the ACS operating mode. The logic utilizes Sun and Canopus acquisition signals generated within the ACS to perform automatic mode switching so that dependence of ground control is minimized when operating in the Sun acquisition, roll search, and celestial cruise modes. The total ACS weight is 29.8 kg (65.7 lb), and includes 2.4 kg (5.4 lb) of nitrogen gas. Total power requirements vary from 9 W for the celestial cruise mode to 54 W for the commanded turn mode.

17. Key Words (Selected by Author(s))	18. Distribution Statement
Mariner Mars 1971 Project Planetary Spacecraft, Advanced	Unclassified -- Unlimited

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TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 33-703	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle VIKING ORBITER 1975 THRUST VECTOR CONTROL SYSTEM ACCURACY		5. Report Date October 15, 1974 6. Performing Organization Code
7. Author(s) L. F. McGlinchey		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered Technical Memorandum
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

The purpose of the Thrust Vector Control (TVC) System is to point the engine thrust at the vehicle center of mass and thus maintain attitude stability during propulsive maneuvers. This is accomplished by mounting the engine in a two-axis gimbal system. The TVC system then controls the pointing of the engine by closed loop control of two linear actuators which extend or retract and rotate the engine in its gimbal system.

The velocity vector (ΔV) pointing error incurred during a propulsive maneuver is made up of several parts, and the TVC system error is one of these. This error arises because the center of mass and engine thrust are not perfectly aligned.

It is the purpose of this memorandum to assess the magnitude of the TVC system portion of the ΔV pointing error and to provide simplified and linearized models for predicting its magnitude for the various propulsive maneuvers. The accuracy of the linearized analysis is verified using a detailed nonlinear six-degree-of-freedom computer simulation.

The Jet Propulsion Laboratory is responsible for the Viking Orbiter System, which is part of the overall Viking Project managed by the Viking Project

17. Key Words (Selected by Author(s))	18. Distribution Statement
Control and Guidance Planetary Spacecraft, Advanced Propulsion, Liquid Viking Project	Unclassified -- Unlimited

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12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code
15. Supplementary Notes		

16. Abstract

Office at Langley Research Center for NASA. The spacecraft will be launched on a Titan III-E/Centaur launch vehicle in August 1975.

17. Key Words (Selected by Author(s))	18. Distribution Statement		
19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price

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TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 33-706	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle TRAJECTORY SELECTION FOR THE MARINER JUPITER/SATURN 1977 PROJECT		5. Report Date October 15, 1974 6. Performing Organization Code
7. Author(s) James S. Dyer, Ralph F. Miles, Jr.		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered Technical Memorandum
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15. Supplementary Notes

16. Abstract

This article describes the use of decision analysis to facilitate a group decision-making problem in the selection of trajectories for the two Spacecraft of the Mariner Jupiter/Saturn 1977 Project. This NASA project includes the participation of some 80 scientists divided by specialization among 11 science teams. A set of 32 candidate trajectory pairs was developed by the Project in collaboration with the science teams. Each science team then ordinally ranked and assigned cardinal utility function values to the trajectory pairs. The data and statistics derived from collective choice rules were used by the scientists in selecting the science-preferred trajectory pair.

17. Key Words (Selected by Author(s))	18. Distribution Statement
Mariner Jupiter-Saturn 1977 Project Orbits and Trajectories	Unclassified -- Unlimited

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Unclassified	Unclassified	42	

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1. Report No. 33-713	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle SYMBOLIC INTEGRATION OF A CLASS OF ALGEBRAIC FUNCTIONS		5. Report Date October 15, 1974 6. Performing Organization Code
7. Author(s) Edward W. Ng		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered Technical Memorandum
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

An algorithm, based on a series of analyses by Carlson, is presented for the symbolic integration of a class of algebraic functions. This class consists of functions made up of rational expressions of an integration variable x and square roots of polynomials, trigonometric and hyperbolic functions of x. The algorithm is constituted of four major components, viz., (i) reduction of input integrand to canonical form, (ii) intermediate internal representation of integral, (iii) classification of output, and (iv) reduction and simplification of output to well-known functions. In the oral presentation, the algorithmic outline as well as some simple examples will be described.

17. Key Words (Selected by Author(s))	18. Distribution Statement
Computer Programs Mathematical Sciences	Unclassified -- Unlimited

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4. Title and Subtitle THE DEEP SPACE NETWORK PROGRESS REPORT JULY AND AUGUST 1974		5. Report Date October 15, 1974 6. Performing Organization Code
7. Author(s) JPL Staff		8. Performing Organization Report No.
9. Performing Organization Name and Address JET PROPULSION LABORATORY California Institute of Technology 4800 Oak Grove Drive Pasadena, California 91103		10. Work Unit No. 11. Contract or Grant No. NAS 7-100 13. Type of Report and Period Covered DSN Progress Report
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Washington, D.C. 20546		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

This report describes work performed for the JPL/NASA Deep Space Network (DSN). Progress is presented on DSN supporting research and technology, advanced development and engineering, and implementation, and DSN operations which pertain to mission-independent or multiple-mission development as well as to support of flight projects. Each issue contains a description of the functions and facilities of the DSN.

17. Key Words (Selected by Author(s))	18. Distribution Statement
Antennas and Transmission Lines Information Theory Telemetry and Command Tracking	Unclassified -- Unlimited

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Unclassified	Unclassified	151	

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Volume I, Addendum 1

Mariner Mars 1971 Television Picture Catalog

Experiment Design and Picture Data

Dennis Crosby

JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA

August 15, 1974

Prepared Under Contract No. NAS 7-100
National Aeronautics and Space Administration

Preface

The work described in this report was performed by the Space Sciences Division of the Jet Propulsion Laboratory, under the cognizance of the Mariner Mars 1971 Project.

Contents

Contents (contd)

Polar Stereographic Projections of the South Pole: Narrow-Angle Camera Coverage

Polar Stereographic Projections of the North Pole: Wide-Angle Camera Coverage

Polar Stereographic Projections of the North Pole: Narrow-Angle Camera Coverage

Abstract

This addendum to the *Mariner Mars 1971 Television Picture Catalog, Volume I*, comprises footprint plots of the Mariner 9 television mapping of the Martian surface from Rev 100 through Rev 676 and catalogs of the pictures and their quadrangle locations.

I. Introduction

The air-brushed relief maps included in this addendum to the *Mariner Mars 1971 Television Picture Catalog, Vol. I,* show a portion of the Mariner 9 television coverage of the surface of Mars. The footprint plots are Mercator projections in the interval 70°S to 70°N latitude, polar stereographic projections in the interval 65°S to 90°S latitude for the south pole, and 65°N to 90°N latitude for the north pole. The footprint outlines are rectified, and the planet limb is shown as a jagged line.

The footprints are identified either by the data automation subsystem (DAS) time or by the revolution number followed by the last four digits of the DAS time. These identifiers appear at reticle 1 (upper left hand corner of the picture), unless this corner is outside the plot area. In this case, they are located at the first corner (rotated clockwise) that appears within the plot area.

Because the Martian surface was obscured by dust during the first 100 revolutions of Mariner 9, the footprint plots for the pictures taken during this period were not generated.

The pictures are subdivided into combinations of the following science cycles and science sequences:

A. Science Cycles

(1) Mapping cycle I, Revs 100-138.

(2) Mapping cycle II, Revs 139-177.

(3) Mapping cycle III, Revs 178-217.

(4) Extended mission, Phase I, Revs 218-262.

(5) Extended mission, Phase II, Revs 416-676.

B. Science Sequences

(1) Mapping.

(2) Geodesy.

(3) Global and/or atmospheric.

(4) Targeted (all those not listed above).

Each map in this document may be obtained from the National Space Science Data Center (NSSDC) at larger scales (1:25,000,000 for Mercator and 1:5,000,000 for stereographic) as line drawings without surface features. A reference set of positive transparencies of these maps is filed in the Science Data Library at the Jet Propulsion Laboratory.

Figure 1 is an index map of the quadrangle locations. Locations of the surface features are listed in Table 1.

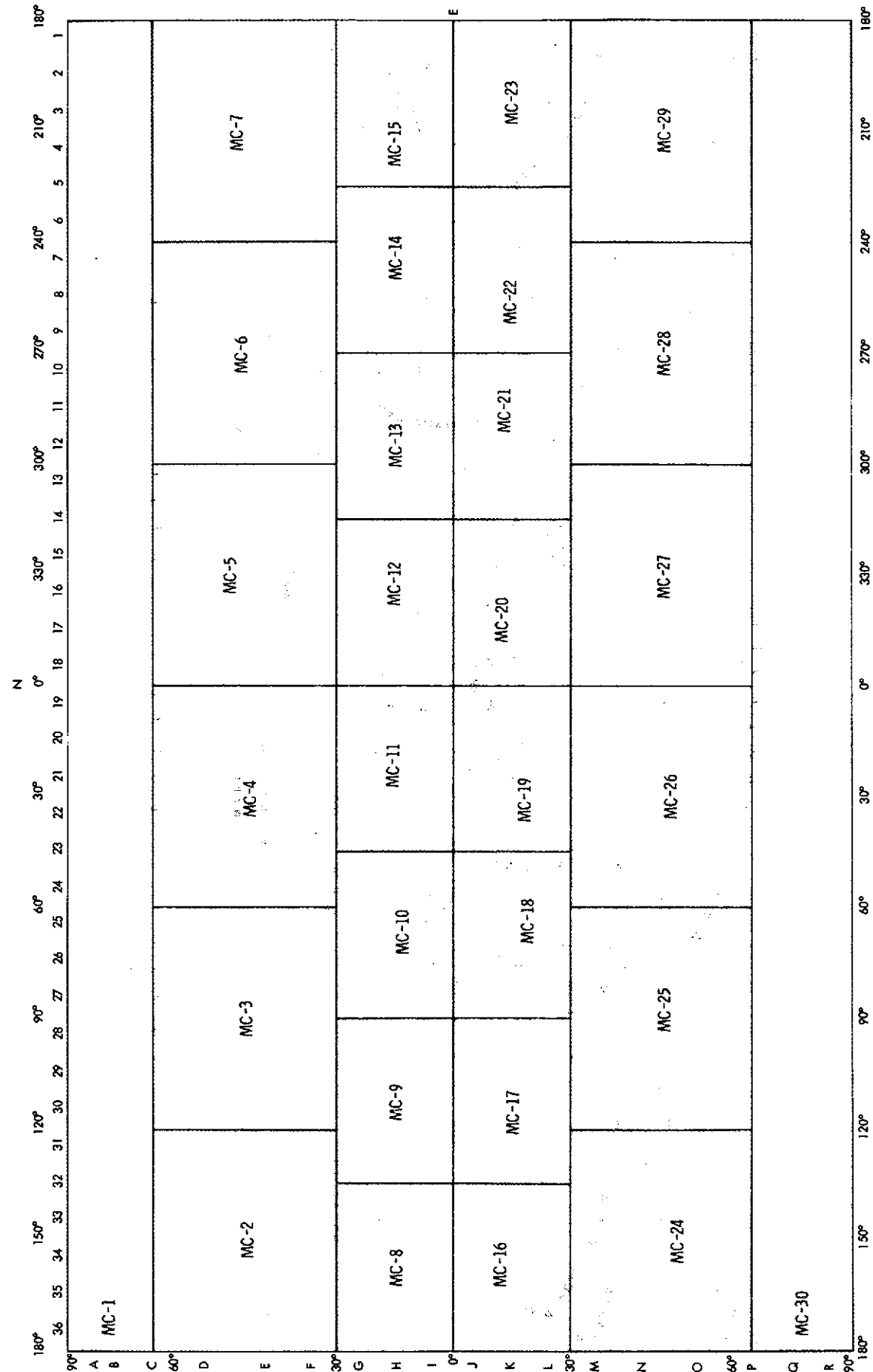
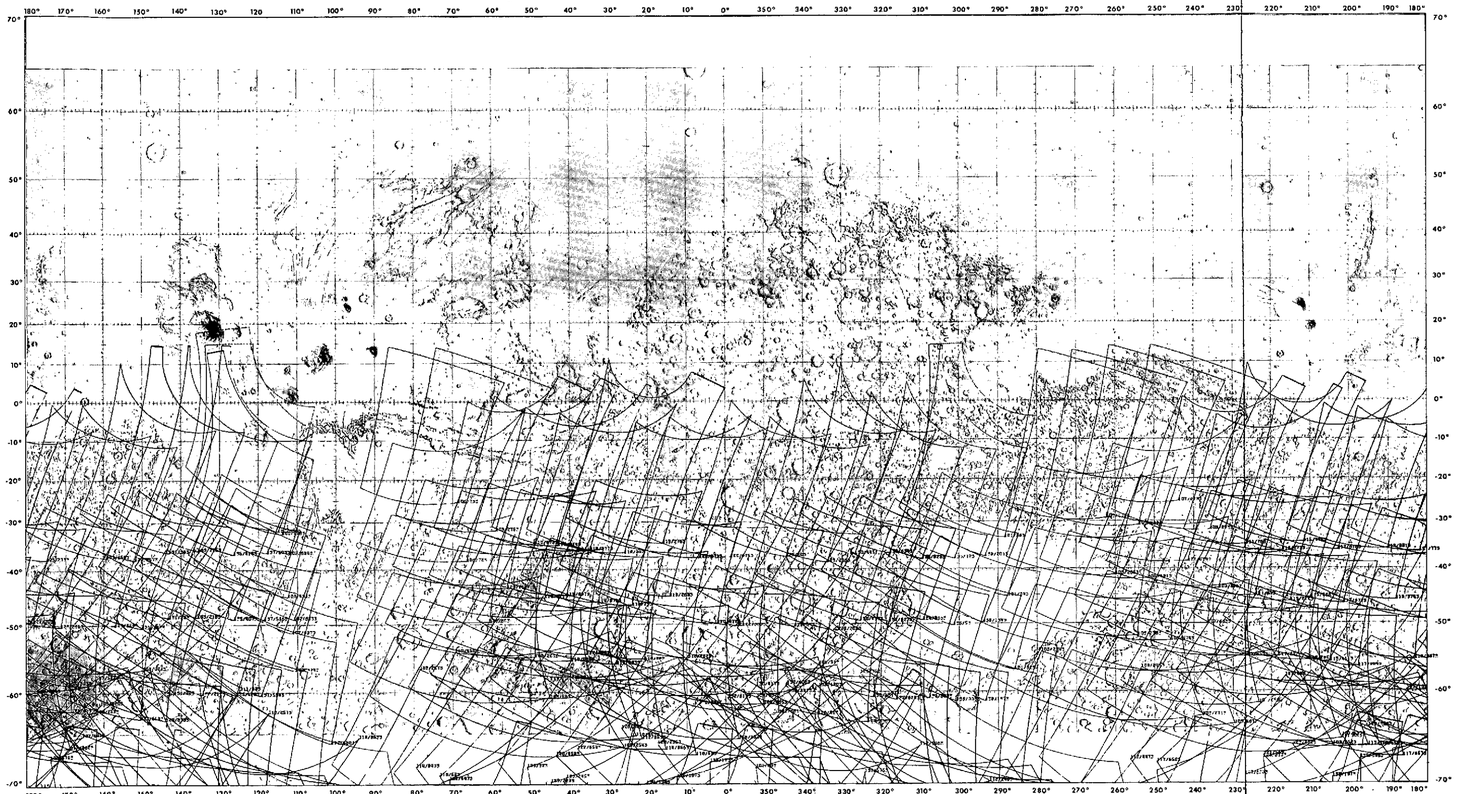


Fig. 1. Index map.

Table 1. Surface feature locations.

AREA	LAT	LONG	AREA	LAT	LONG	AREA	LAT	LONG	AREA	LAT	
ACHILLIS PONS	39	30	DELTOTON SINUS	- 7	305	MEMNONIA	-20	145	RIMA AUGUSTA	-73	50
ACIDALIUM, MARE	48	30	DEUCALIONIS REGIO	-16	344	MERIDIANI SINUS	- 8	0	RIMA AUSTRALIS	-73	335
ACIDALIUS FONS	50	73	DEUTHERONILUS	35	359	MEROE	34	291	RIMA BREVIS	-72	292
AEOLIS	- 5	210	DIA	-61	84	MESOGAEA	0	180	SABAEUS SINUS	-11	328
AERIA	15	309	DIACRIA	47	164	MOAB	18	340	SCAMANDER	-49	196
AETHERIA	35	240	DIOSCURIA	49	319	MOERIS LACUS	9	271	SCANDIA	62	150
AETHIOPIS	5	238	EDEN	18	351	MONS ARGENTINA	-70	30	SERPENTIS, MARE	-25	321
ALBA	41	107	EDOM	- 3	345	MORPHEOS LACUS	35	230	SILOE FONS	35	5
AMAZONIS	3	154	ELECTRIS	-45	180	NECTAR	-28	65	SIMOIS	-48	161
AMENTHES	9	256	ELYSIUM	23	216	NEITH REGIO	35	272	SINAI (THAUMASIA)	-17	75
AONIUS SINUS	-51	115	EOS	-15	36	NEPENTHES	17	265	SIRENUM, MARE	-32	154
ARABIA	22	324	ERIDANIA	-46	220	NEREIDUM FRETUM	-43	51	SIRENUM SINUS	-35	131
ARAM	- 3	14	ERYTHRAEUM, MARE	-33	25	NILIACUS LACUS	34	33	SITHONIUS LACUS	53	237
ARAXES	-27	125	EUNOSTOS	12	225	NILOKERAS	35	58	SOLIS LACUS	-27	85
ARCADIA	49	125	EUPHRATES	15	334	NILOSYRTIS	39	280	SOUTH POLAR CAP CENTER	-84	30
ARETHUSA LACUS	59	338	EUXINUS LACUS	44	157	NIX OLYMPICA	20	138	STYX	28	202
ARGYRE I	-45	30	GANGES	8	63	NOACHIS	-43	350	SYRIA	-20	97
ARGYRE II	-68	72	GEHON	15	358	NOCTIS LACUS	-10	95	SYRTIS MAJOR	10	289
ARNON	50	335	GOMER SINUS	- 5	225	NODUS ALCYONIUS	32	256	SYRTIS MINOR	-10	261
ASCRAEUS LACUS	19	105	GORGONUM SINUS	-30	149	NODUS GORDII	- 5	129	TANAIS	50	57
ATLANTIS	-33	166	GYNDES	55	215	NODUS LAOCOONTIS	20	248	TEMPE	45	65
AURORAE SINUS	-12	49	HADRIACUM, MARE	-35	275	NORTH POLAR CAP CENTER	89	290	THARSIS	- 2	105
AUSONIA	-37	247	HAMMONIS CORNU	- 5	320	NOTI SINUS	-63	204	THAUMASIA	-36	84
AUSTRALE, MARE	-63	26	HEBES LACUS	- 1	83	NOTUS	-71	212	THOANA PALUS	29	248
BATHYS PORTUS	-41	110	HECATES LACUS	38	205	NOVISSIMA THYLE	-72	314	THOTH	33	255
BIBLIS FONS	17	133	HELLAS	-47	295	NOVUS MONS	-70	320	THYLE I	-68	152
BOREOSYRTIS	55	300	HELLESPONTICA, DEPRESSIO	-60	344	NUBIS LACUS	20	260	THYLE II	-66	225
BOREUM, MARE	57	90	HELLESPONTUS	-40	322	OENOTRIA	- 2	298	THYLES COLLIS	-71	232
BOSPOROS	-41	75	HEPHAESTUS	21	240	OGYGIS REGIO	-40	60	THYLES MONS	-73	154
CANDOR	5	74	HERCULIS PONS	50	180	OLYMPIA	80	210	THYMIAMATA	15	6
CAPRI CORNU	-20	50	HESPERIA	-19	240	OPHIR	- 9	66	TIPHYS FRETUM	-56	210
CARALIS FONS	-42	155	HIDDEKEL	15	346	ORTYGIA	61	350	TITANUM SINUS	-20	169
CASIUS	40	264	HOUGERIA	31	139	OXIA	21	16	TITHONIUS LACUS	- 2	85
CASTORIUS LACUS	54	155	HOUGERIUS LACUS	20	125	OXIA PALUS	11	18	TRACTUS ALBUS (AUSTRALIS)	- 5	100
CEBRENIA	47	215	HYBLAEUS	26	233	OXUS	10	21	TRACTUS ALBUS (BOREALIS)	25	275
CECROPIA	65	310	HYPERBOREUS LACUS	75	60	PALINURI FRETUM	-59	146	TRINACRIA (AUSONIA BOREALIS)	-20	275
CERAUNIUS	25	95	HYPERNOTIUS MONS	-66	28	PAMBOTIS LACUS	7	218	TRITONIS SINUS	- 6	245
CERBERUS	10	200	IAPYGIA	-16	298	PANCHAIA	62	210	TRIVIUM CHARONTIS	15	200
CHALCE	-48	0	ICARIA	-40	122	PANDORAE FRETUM	-25	345	TYRRHENUM, MARE	-22	252
CHAOS	39	215	IDAEUS FON	30	52	PARVA, DEPRESSIO	-72	175	UCHRONIA	70	260
CHERSONESUS	-54	261	ISIDIS REGIO	20	275	PAVONIS LACUS	1	120	ULTIMUM PROM.	-73	179
CHRONIUM, MARE	-60	180	ISMENIUS LACUS	40	334	PENEUS	-48	280	ULYXIS FRETUM	-73	195
CHRYSE	9	35	JAMUNA	15	35	PHAETHONTIS	-47	139	UMBRA	49	287
CHRYSOKERAS	-55	99	JUVENTAE FONS	- 5	62	PHISON	15	320	UTOPIA	53	244
CIMMERIUM, MARE	-32	207	LAESTRYGON	- 5	198	PHLEGRA	31	191	VULCANI PELAGUS	-35	15
CLARITAS	-32	102	LAESTRYGONUM SINUS	-32	200	PHOLNICIS LACUS	-15	108	XANTHE	14	52
COLOE PALUS	43	297	LEMURIA	65	210	PROMETHEI SINUS	-64	262	XANTHUS	-45	230
COPAIS PALUS	56	275	LIBYA	- 1	270	PROPONTIS I	45	180	YAONIS FRETUM	-34	310
COPRATES	-15	61	LUNAE PALUS	20	65	PROPONTIS II	54	180	YAONIS REGIO	-35	315
CROCEA	- 5	285	MAEOTIS PALUS	51	124	PROTEI REGIO	-23	50	ZEA LACUS	-47	289
CYCLOPIA	- 2	225	MAGNA, DEPRESSIO	-79	270	PROTONILUS	42	313	ZEPHYRIA	-10	180
CYCLOPUM SINUS	-10	227	MAREOTIS LACUS	32	92	PRUMETHEI SINUS	-63	259			
CYDONIA	46	356	MARGARITIFER SINUS	-13	22	PYRRHAE REGIO	-25	22			
DAEDALIA	-25	120	MELAS LACUS	-13	74	RASENA	-26	191			

II. Mercator Projections: Wide-Angle Camera Coverage



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Rev	DAS-Time	Quad
100	5164733	MC-30
100	5164773	MC-24
100	5164843	MC-24
100	5164913	MC-24
100	5164983	MC-17
101	5205683	MC-30
101	5205753	MC-28
101	5205823	MC-28
101	5205893	MC-28
101	5205963	MC-21
102	5236663	MC-17
102	5236733	MC-25
102	5236803	MC-25
102	5236873	MC-25
102	5236943	MC-17
103	5272643	MC-30
103	5272713	MC-28
103	5272783	MC-28
103	5272853	MC-25
103	5272923	MC-21
105	5344603	MC-30
105	5344673	MC-28
105	5344743	MC-28
105	5344813	MC-28
105	5344883	MC-22
106	5380513	MC-25
106	5380583	MC-25
106	5380653	MC-25
106	5380723	MC-18
106	5380793	MC-18
107	5416493	MC-28
107	5416563	MC-25
107	5416633	MC-28
107	5416703	MC-22
107	5416773	MC-22
108	5452573	MC-30
108	5452643	MC-25
108	5452713	MC-25
108	5452683	MC-25
108	5452753	MC-18
109	5488453	MC-30
109	5488523	MC-28
109	5488593	MC-28
109	5488663	MC-28
109	5488733	MC-22
110	5524503	MC-30
110	5524573	MC-26
110	5524643	MC-26
110	5524713	MC-26
110	5524783	MC-18
111	5560483	MC-30
111	5560553	MC-29
111	5560623	MC-29
111	5560691	MC-29
111	5560761	MC-22
112	5596461	MC-30
112	5596533	MC-26
112	5596603	MC-26
112	5596671	MC-26
112	5596741	MC-18
113	5632513	MC-30
113	5632583	MC-29
113	5632653	MC-29
113	5632723	MC-29
113	5632791	MC-22
114	5668493	MC-30
114	5668563	MC-24
114	5668633	MC-26
114	5668703	MC-26
114	5668773	MC-19
115	5704473	MC-30
115	5704543	MC-29
115	5704613	MC-29
115	5704683	MC-29
115	5704753	MC-23
116	5740523	MC-30
116	5740593	MC-26
116	5740663	MC-26
116	5740733	MC-26
116	5740803	MC-19
117	5776503	MC-30
117	5776573	MC-29
117	5776643	MC-29
117	5776713	MC-29
117	5776783	MC-23
118	5812483	MC-30
118	5812553	MC-26
118	5812623	MC-26
118	5812693	MC-26
118	5812763	MC-19
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119	5848673	MC-29
119	5848743	MC-29
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120	5884653	MC-26
120	5884723	MC-26
120	5884793	MC-19
121	5920693	MC-30
121	5920563	MC-30
121	5920633	MC-29
121	5920703	MC-29
121	5920773	MC-23
122	5956473	MC-30
122	5956543	MC-26
122	5956613	MC-26
122	5956683	MC-26
122	5956753	MC-19
123	5992453	MC-30
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127	6136373	MC-30
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127	6136511	MC-24
127	6136583	MC-16
128	6172283	MC-30
128	6172353	MC-30
128	6172423	MC-27
128	6172493	MC-27
128	6172563	MC-20
129	6208193	MC-30
129	6208263	MC-24
129	6208333	MC-24
129	6208403	MC-24
129	6208473	MC-16
130	6244173	MC-30
130	6244243	MC-27
130	6244313	MC-27
130	6244381	MC-27
130	6244453	MC-20
131	6280083	MC-30
131	6280153	MC-24
131	6280223	MC-24
131	6280293	MC-24
131	6280363	MC-16
132	6316063	MC-30
132	6316133	MC-27
132	6316203	MC-27
132	6316273	MC-27
132	6316343	MC-20
133	6351973	MC-30
133	6352043	MC-24
133	6352113	MC-24
133	6352183	MC-24
133	6352253	MC-16
134	6387953	MC-30
134	6388023	MC-27
134	6388093	MC-27
134	6388163	MC-27
134	6388233	MC-20
135	6423863	MC-30
135	6423933	MC-24
135	6424003	MC-24
135	6424073	MC-24
135	6424143	MC-17
136	6459843	MC-30
136	6459913	MC-27
136	6459983	MC-27
136	6460053	MC-27
136	6460123	MC-21
137	6495753	MC-30
137	6495823	MC-24
137	6495893	MC-24
137	6495963	MC-24
137	6496033	MC-17
138	6531733	MC-30
138	6531803	MC-27
138	6531873	MC-27
138	6531943	MC-27
138	6532013	MC-21

Fig. 2. Mapping Cycle I, Geodesy, Revs 100-138.

FOLDOUT FRAME

Rev	DAS-Time	Quad
139	6571843	MC-12
139	6571915	MC-12
140	6607823	MC- 8
140	6607893	MC- 8
141	6643963	MC- 8
141	6644033	MC-12
141	6644103	MC-12
142	6679173	MC- 8
142	6679243	MC- 8
143	6679313	MC-12
143	6715693	MC-12
144	6751763	MC-12
144	6751833	MC-12
144	6751973	MC- 8
145	6787643	MC-12
145	6787713	MC- 8
146	6823703	MC- 8
146	6823773	MC- 8
147	6859643	MC-12
147	6859783	MC-12
148	6895503	MC- 9
148	6895573	MC- 9
149	6931643	MC-13
149	6931713	MC-13
149	6931783	MC-13
150	6967623	MC- 9
150	6967693	MC- 9
150	6967763	MC- 9
151	7003603	MC-13
151	7003673	MC-13
151	7003743	MC-13
152	7039583	MC- 9
152	7039653	MC- 9
152	7039723	MC- 9
153	7075633	MC-13
153	7075703	MC-13
153	7075773	MC-13
154	7111613	MC- 9
154	7111683	MC- 9
154	7111753	MC- 9
155	7147663	MC-13
155	7147733	MC-13
155	7147803	MC-13
156	7183643	MC- 9
156	7183713	MC- 9
156	7183783	MC- 9
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157	7219693	MC-13
157	7219763	MC-13
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158	7255813	MC-10
159	7291653	MC-14
159	7291723	MC-14
159	7291793	MC-14
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160	7327703	MC-10
160	7327773	MC-10
161	7363613	MC-14
161	7363683	MC-14
161	7363753	MC-14
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162	7399663	MC-10
162	7399733	MC-10
163	7435573	MC-14
163	7435643	MC-14
163	7435713	MC-14
164	7471553	MC-10
164	7471623	MC-10
164	7471693	MC-10
165	7507563	MC-14
165	7507633	MC-14
165	7507703	MC-14
166	7543513	MC-10
166	7543583	MC-10
167	7579423	MC-14
167	7579493	MC-14
167	7579563	MC-14
168	7615333	MC-11
168	7615403	MC-11
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170	7687363	MC-11
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171	7723273	MC-15
171	7723343	MC-15
172	7759113	MC-11
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173	7795233	MC-15
174	7831003	MC-11
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174	7831143	MC-11
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177	7939013	MC- 8
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180	8045763	MC-20
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180	8047163	MC- 5
180	8047303	MC- 5
181	8081373	MC-23
181	8081393	MC-23
181	8081463	MC-16
181	8081533	MC-16
181	8081603	MC-16
181	8081673	MC-16
181	8082933	MC- 8
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182	8118913	MC-17
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185	8227139	MC- 2
185	8227349	MC- 2
185	8227419	MC- 2
186	8261229	MC-16
186	8261299	MC-20
186	8261369	MC-20
186	8261439	MC-20
186	8261509	MC-20
186	8261579	MC-20
186	8262839	MC-13
186	8262979	MC- 5
186	8263329	MC- 5
186	8263399	MC- 5
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187	8297349	MC-16
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188	8333399	MC-20
188	8333469	MC-20
188	8333539	MC-20
188	8333609	MC-20
188	8334869	MC- 3
188	8335009	MC- 6
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198	8369169	MC-16
198	8369239	MC-16
198	8369309	MC-16
189	8369379	MC-16
189	8369449	MC-16
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189	8371409	MC- 3
190	8405219	MC-20
190	8405289	MC-20
190	8405359	MC-20
190	8405429	MC-20
190	8405499	MC-20
191	8405569	MC-21
191	8407139	MC- 6
190	8407389	MC- 6
191	8441269	MC-16
191	8441339	MC-16
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191	8443159	MC- 3
191	8443369	MC- 3
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194	8551109	MC- 6
194	8551179	MC- 6
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195	8585389	MC-17
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195	8585599	MC-17
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196	8621309	MC-21
196	8621379	MC-21
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196	8621589	MC-21
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196	8623129	MC- 6
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197	8657309	MC-17
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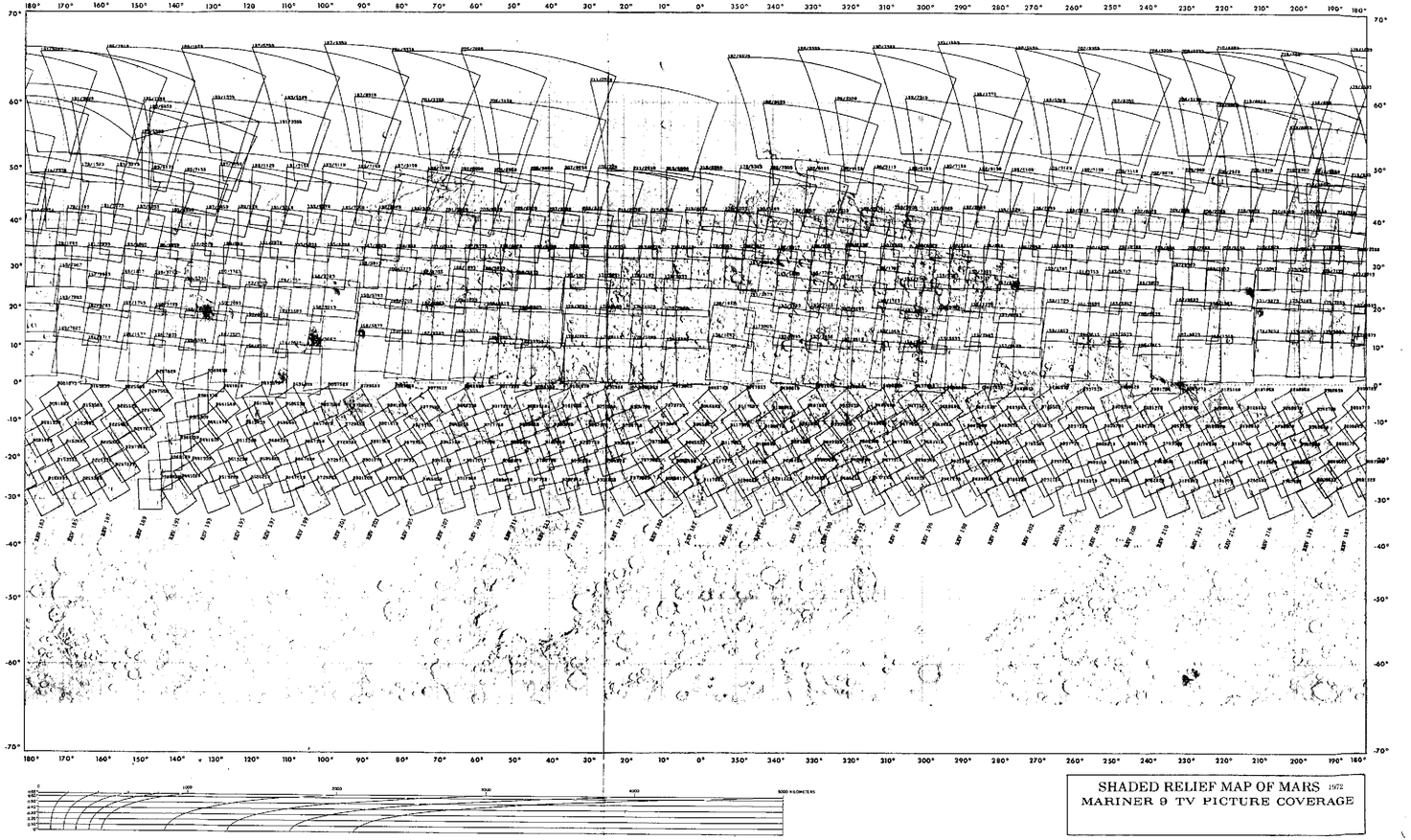
197	8657519	MC-17
197	8657589	MC-17
197	8658869	MC- 3
197	8659009	MC- 3
197	8659319	MC- 3
197	8659389	MC- 3
198	8693269	MC-21
198	8693339	MC-21
198	8693409	MC-21
198	8693479	MC-21
198	8693549	MC-21
198	8693619	MC-21
198	8694879	MC-14
198	8695019	MC- 6
198	8695159	MC- 6
198	8695369	MC- 6
198	8695579	MC- 6
199	8729249	MC-17
199	8729319	MC-17
199	8729389	MC-17
199	8729459	MC-17
199	8729529	MC-17
199	8729599	MC-17
199	8730859	MC-10
199	8730999	MC- 3
199	8731139	MC- 3
200	8765269	MC-21
200	8765299	MC-21
200	8765369	MC-21
200	8765509	MC-22
200	8765579	MC-22
200	8766839	MC-22
200	8766979	MC- 6
201	8767119	MC- 7
201	88C1209	MC-17
201	88C1279	MC-17
201	88C1349	MC-18
201	88C1419	MC-18
201	88C1489	MC-18
201	88C1559	MC-18
201	8802819	MC-10
201	8802959	MC- 4
201	8803099	MC- 4
201	8803329	MC- 4
201	8803379	MC- 3
202	8837189	MC-22
202	8837259	MC-22
202	8837329	MC-22
202	8837399	MC-22
202	8837469	MC-22
202	8837539	MC-22
202	8838769	MC- 4
202	8838939	MC- 7
202	8839079	MC- 7
202	8839289	MC- 7
202	8839359	MC- 7
203	8871169	MC-18
203	8873239	MC-18
203	8873309	MC-18
203	8873379	MC-18
203	8873449	MC-18
203	8873519	MC-18
204	8874719	MC- 4
203	8875059	MC- 4
204	8909079	MC-22
204	8909149	MC-22
204	8909219	MC-22
204	8909288	MC-22
204	8909359	MC-22
204	8909423	MC-22
204	8910689	MC-14
204	8910829	MC- 5
204	8910969	MC- 7
205	8945059	MC-18
205	8945129	MC-18
205	8945199	MC-18
205	8945269	MC-18
205	8945339	MC-18
205	8945409	MC-18
205	8946869	MC- 4
205	8946809	MC- 4
205	8946949	MC- 4
205	8947159	MC- 4
205	8947229	MC- 4
206	8981039	MC-22
206	8981109	MC-22
206	8981179	MC-22
206	8981249	MC-22
206	8981319	MC-22
206	8981389	MC-22
206	8982649	MC-15
206	8982789	MC- 7
206	8982929	MC- 7
206	8983139	MC- 7
206	8983209	MC- 7
207	9016949	MC- 3
207	9017019	MC-18
207	9017089	MC-18
207	9017159	MC-18
207	9017229	MC-18
207	9017299	MC-18
207	9318559	MC-11
207	9018699	MC- 4
207	9018839	MC- 4
208	9052929	MC-22
208	9052999	MC-22
208	9053069	MC-22
208	9053139	MC-22
208	9053209	MC-22
208	9053279	MC-22
208	9054539	MC-15
208	9054679	MC- 7
208	9054819	MC- 7
208	9054959	MC- 7
208	9055099	MC- 7
209	9088819	MC-18
209	9088969	MC-18
209	9088979	MC-18
209	9089049	MC-18
209	9089119	MC-18
209	9089189	MC-19
209	9090049	MC-11
209	9090589	MC- 4
209	9090729	MC- 4
210	9124819	MC-22
210	9124889	MC-22
210	9124959	MC-22
210	9125029	MC-23
210	9125799	MC-23
210	9125169	MC-23
210	9126429	MC-15
210	9126569	MC- 7
210	91267C9	MC- 7
210	9126919	MC- 7
210	9126989	MC- 7
211	9160729	MC-18
211	9160799	MC-18
211	9160869	MC-19
211	9160939	MC-19
211	9161009	MC-19
211	9161079	MC-19
211	9162139	MC-11
211	9162479	MC- 4
211	9162619	MC- 4
211	9162829	MC- 4
212	91967C9	MC-23
212	9196779	MC-23
212	9196849	MC-23
212	9196919	MC-23
212	9196989	MC-23
212	9197059	MC-23
212	9198319	MC-15
212	9198459	MC- 7
212	9198599	MC- 7
213	9232689	MC-19
213	9232759	MC-19
213	9232829	MC-19
213	9232899	MC-19
213	9232969	MC-19
213	9234229	MC-11
213	9234369	MC- 4
213	9234579	MC- 5
214	9268599	MC-23
214	9268665	MC-23
214	9268739	MC-23
214	9268809	MC-23
214	9268879	MC-23
214	9268949	MC-23
214	9270209	MC-19
214	9270349	MC- 7
214	9270489	MC- 2
214	9270699	MC- 2
214	9270769	MC- 7
215	9304509	MC-19
215	9304579	MC-19
215	9304649	MC-19
215	9304719	MC-19
215	9304789	MC-19
215	9304859	MC-19
215	9306119	MC-12
215	93C6259	MC- 5
215	9306399	MC- 5
216	9340489	MC-23
216	9340559	MC-23
216	9340629	MC-23
216	9340699	MC-23
216	9340769	MC-23
216	9340839	MC-23
216	9342099	MC- 8
216	9342239	MC- 2
216	9342379	MC- 2
212	9198809	MC- 7
212	9198879	MC- 7

Fig. 3. Mapping Cycle II, Geodesy, Revs 139-177; Mapping Cycle III, Mapping, Revs 178-216.



SHADED RELIEF MAP OF MARS 1972
MARINER 9 TV PICTURE COVERAGE

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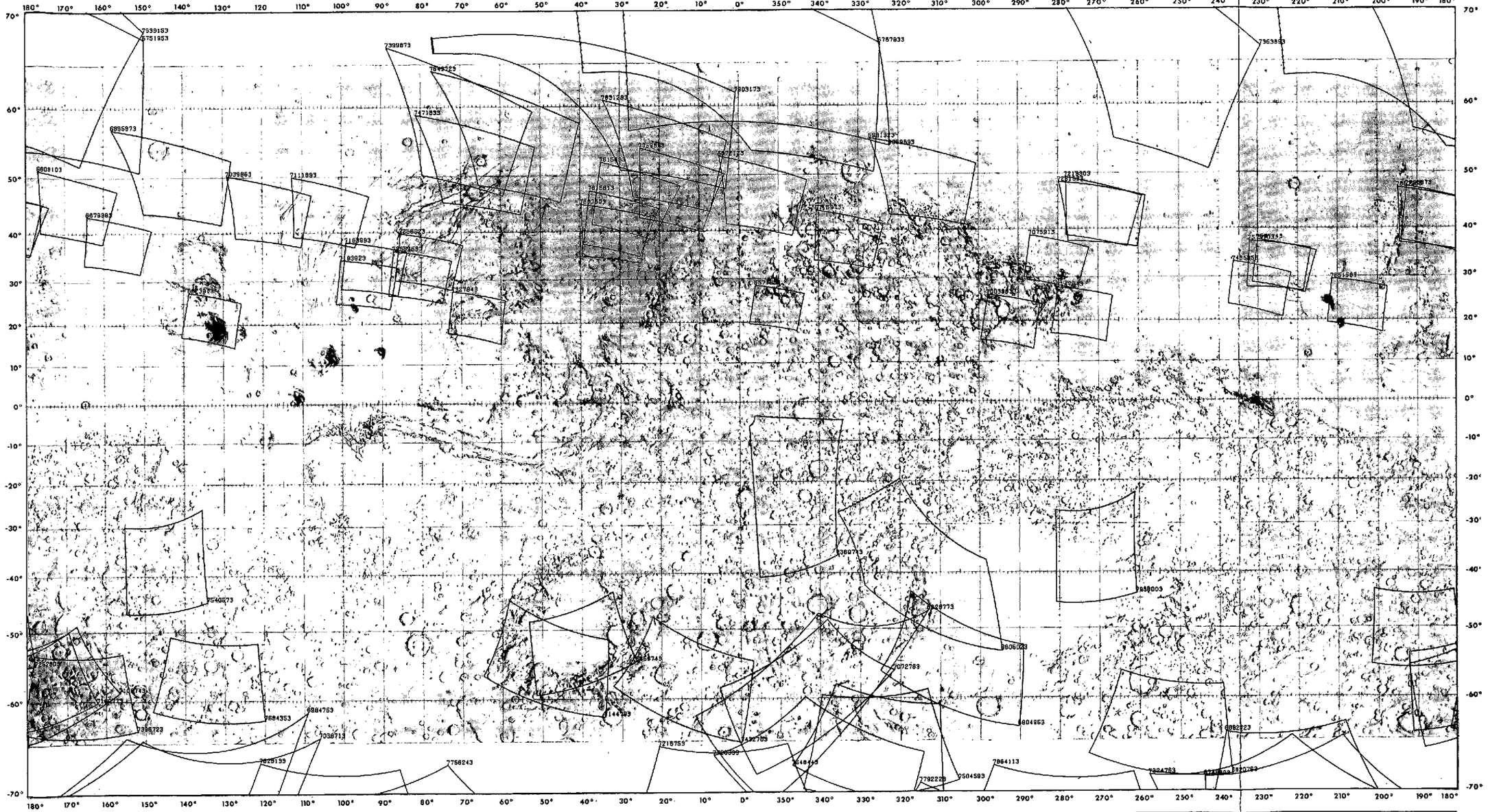
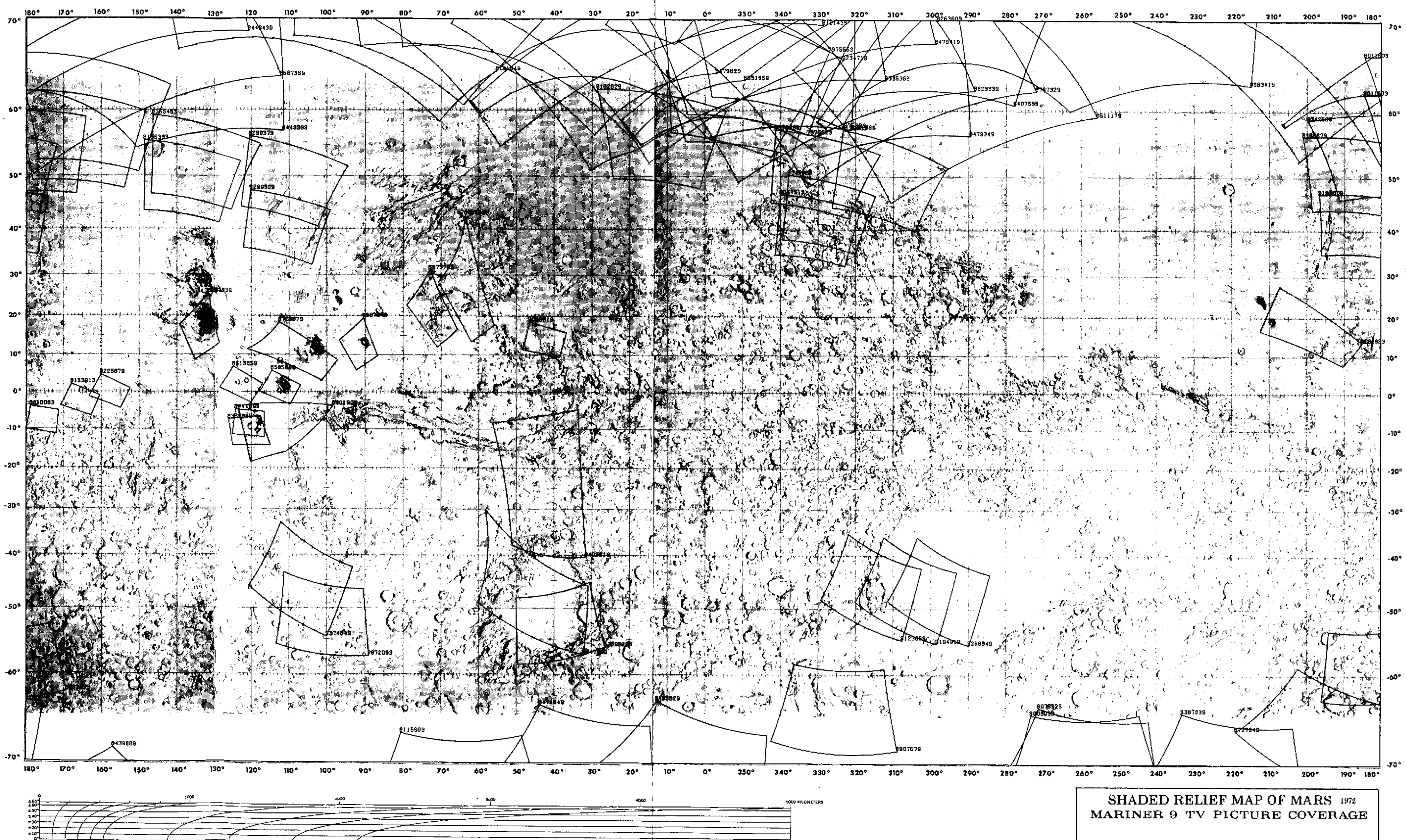


Rev	DAS-Time	Quad
139	6571983	MC-12
139	6572123	MC- 5
140	6604963	MC-27
140	6605023	MC-27
140	6608103	MC- 2
142	6679903	MC- 2
143	6715973	MC- 5
144	6748803	MC-30
144	6751963	MC- 1
145	6787923	MC- 1
146	6820763	MC-28
146	6823913	MC- 9
147	6856743	MC-26
147	6859903	MC- 1
148	6892723	MC-30
148	6895873	MC- 2
149	6928773	MC-27
149	6931923	MC- 5
150	6964753	MC-30
151	7063883	MC-13
152	7036713	MC-30
152	7039863	MC- 3
153	7072723	MC-27
153	7075913	MC- 6
154	7108743	MC-29
154	7111893	MC- 3
155	7144793	MC-26
155	7147943	MC-13
156	7180773	MC-29
156	7183923	MC- 9
156	7183993	MC- 3
157	7216753	MC-30
157	7219903	MC- 6
158	7252803	MC-29
158	7255953	MC- 3
158	7256023	MC- 3
159	7291933	MC- 6
160	7324763	MC-30
160	7327863	MC-10
161	7360743	MC-27
161	7363893	MC- 1
162	7396723	MC-25
162	7399873	MC- 3
163	7432703	MC-26
163	7435853	MC-19
164	7471833	MC- 3
165	7504593	MC-30
165	7507743	MC- 7
166	7540573	MC-24
166	7543723	MC- 9
167	7579703	MC- 7
168	7615413	MC- 9
168	7615483	MC- 9
169	7648943	MC-30
169	7651593	MC-15
170	7684353	MC-29
170	7687503	MC- 9
171	7720333	MC-30
172	7756243	MC-30
172	7759393	MC- 9
173	7792223	MC-30
173	7795373	MC- 7
174	7828133	MC-30
174	7831283	MC- 9
175	7864113	MC-30
175	7867263	MC- 7
176	7903173	MC- 9
177	7936003	MC-28
177	7939153	MC- 1

Fig. 6. Mapping Cycle II, Non-Mapping and Non-Geodesy, Revs 139-177.

Rev	DAS-Time	Quad
178	7972053	MC-26
178	7975553	MC- 1
178	7975623	MC- 1
178	7975833	MC- 1
179	8008033	MC-30
179	8010063	MC-16
179	8011533	MC- 2
179	8011603	MC- 2
180	8047613	MC- 5
180	8047583	MC- 6
181	8079923	MC-30
181	8081953	MC-15
182	8115903	MC-30
182	8119683	MC- 5
183	8153913	MC-16
183	8155383	MC- 2
183	8155453	MC- 2
184	8191369	MC- 1
184	8191939	MC- 1
184	8191649	MC- 1
185	8225879	MC-16
186	8259829	MC-26
186	8263609	MC- 1
187	8297839	MC- 9
187	8299309	MC- 3
187	8299379	MC- 3
188	8335369	MC- 1
189	8367839	MC-30
189	8369869	MC-17
190	8403819	MC-26
190	8407699	MC- 1
191	8439869	MC-30
191	8441899	MC-17
191	8443369	MC- 1
191	8443439	MC- 1
192	8475849	MC-30
192	8479349	MC- 1
192	8479419	MC- 1
192	8479629	MC- 1
193	8513459	MC- 9
194	8547879	MC-26
194	8551659	MC- 1
195	8583859	MC-29
195	8585889	MC- 9
195	8587359	MC- 7
196	8623339	MC- 4
197	8657849	MC- 9
199	8727849	MC-30
199	8729879	MC- 9
200	8763829	MC-30
200	8767329	MC- 5
201	8801909	MC-17
203	8873799	MC-10
204	8907679	MC-27
204	8911179	MC- 5
205	8945689	MC-10
206	8983419	MC- 1
209	9089819	MC-11
210	9123069	MC-27
211	9162829	MC- 4
212	9194959	MC-27
212	9198809	MC- 7
212	9198879	MC- 7
213	9234719	MC- 1
214	9266849	MC-28
216	9342589	MC- 2



SHADED RELIEF MAP OF MARS 1972
MARINER 9 TV PICTURE COVERAGE

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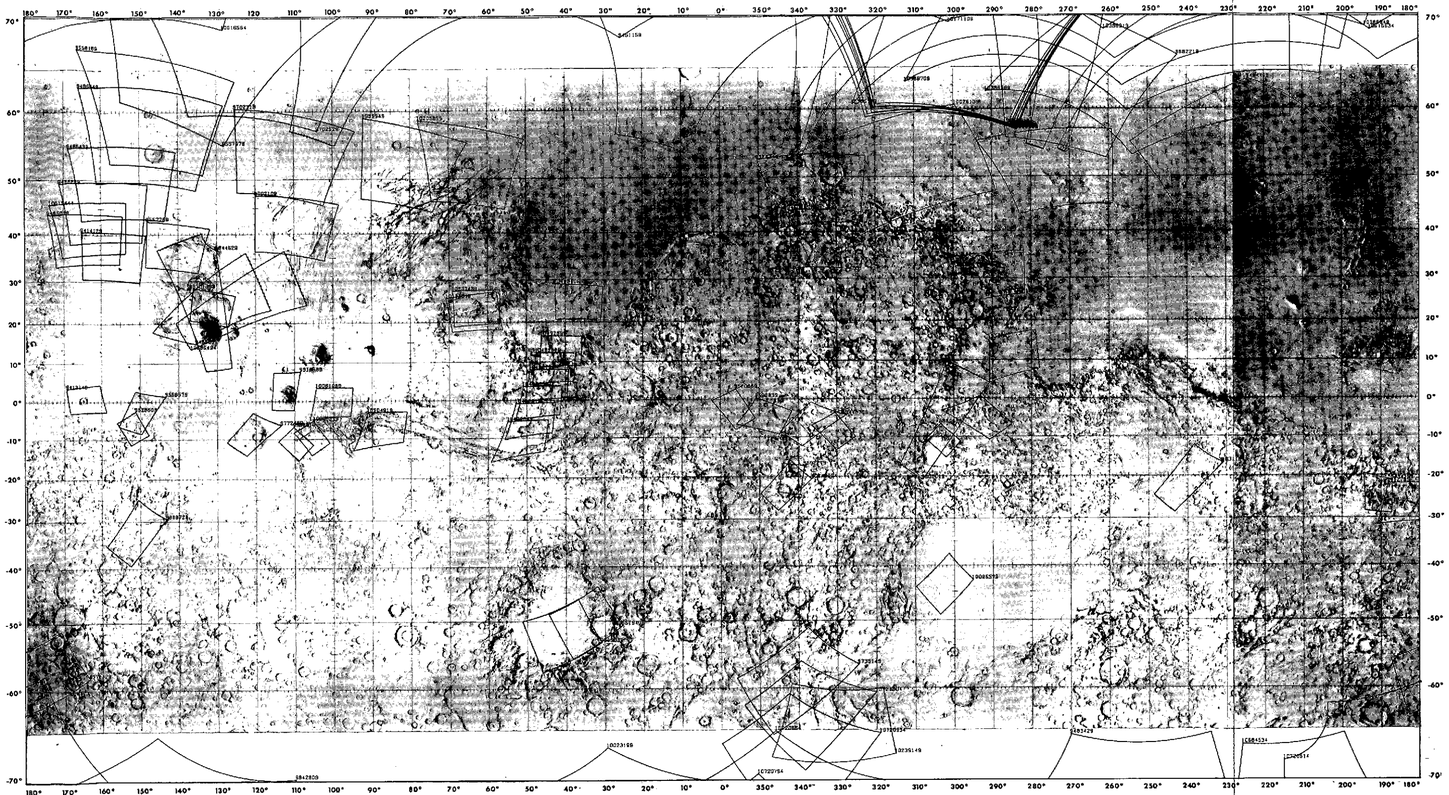
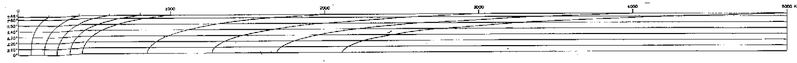
Fig. 7. Mapping Cycle III, Non-Mapping and Non-Geodesy, Revs 178-216.



SHADED RELIEF MAP OF MARS 1972
MARINER 9 TV PICTURE COVERAGE



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Rev	DAS-Time	Quad
218	9912799	MC-23
218	9913197	MC- 4
218	9913497	MC- 3
218	9914908	MC- 4
219	9944709	MC-20
219	9950288	MC- 5
219	9951159	MC- 1
220	9983429	MC-30
220	9984199	MC-23
220	9985037	MC- 5
220	9985817	MC- 2
220	9986229	MC- 2
220	9986429	MC- 2
220	9986637	MC- 2
221	9519337	MC-24
221	9519798	MC-24
221	9520068	MC-23
221	9522397	MC- 5
222	9556577	MC-19
222	9557768	MC- 2
222	9557978	MC- 1
222	9558188	MC- 2
223	9592277	MC-20
223	9592487	MC-20
224	9628609	MC-14
225	9646567	MC- 1
225	9646617	MC- 1
225	9646668	MC- 1
225	9646758	MC- 1
225	9646809	MC- 1
225	9646899	MC- 1
225	9646969	MC- 1
226	9699737	MC-25
226	9701337	MC- 9
226	9702109	MC- 3
226	9702319	MC- 3
226	9702527	MC- 1
227	9735149	MC-27
227	9736569	MC-20
228	9771129	MC-26
228	9772459	MC-17
229	9808019	MC-21
230	9842809	MC-30
230	9844429	MC- 9
231	9880489	MC-21
231	9882219	MC- 1
232	9916859	MC- 1
233	9953569	MC-13
233	9953829	MC- 4
234	9988619	MC-17
234	9989949	MC- 3
235	10023199	MC-30
235	10026139	MC- 5
236	10060829	MC-17
236	10061069	MC-17
237	10095829	MC-27
237	10097629	MC-21
237	10098149	MC- 4
238	10133619	MC-10
239	10171109	MC- 1
240	10209919	MC-18
240	10210399	MC- 3
241	10249149	MC-27
242	10287739	MC-10
243	10311879	MC-22
245	10386569	MC- 1
245	10386709	MC- 1
245	10386779	MC- 1
245	10386849	MC- 1
246	10424679	MC- 1
248	10492549	MC-18
248	10492619	MC-18
248	10492689	MC-18
248	10492789	MC-11
248	10492859	MC-11
248	10492909	MC-11
248	10493109	MC-11
249	10515999	MC- 2
249	10516059	MC- 1
249	10516429	MC- 1
250	10549409	MC-20
251	10586529	MC-30
251	10586629	MC- 9
262	10720859	MC-30
262	10720979	MC-30
262	10720869	MC-30
262	10720959	MC-30
262	10721089	MC-27

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Fig. 8. Extended Mission, Phase I, Revs 218-262.

Rev	DAS-Time	Quad	Rev	DAS-Time	Quad
416	11492969	MC-27	528	12994242	MC- 1
416	11493609	MC-20	528	12994812	MC- 2
416	11495079	MC- 6	528	12994362	MC- 9
416	11495639	MC- 5	529	13021702	MC-11
416	11495779	MC- 5	529	13021982	MC-11
416	11495989	MC- 1	529	13028122	MC- 1
416	11496129	MC- 6	533	13165251	MC-10
417	11498069	MC- 8	533	13165391	MC-26
417	11498779	MC- 8	667	13313705	MC-10
417	11498819	MC- 2	667	13317545	MC- 1
417	11498759	MC- 2	667	13328745	MC-19
417	11498769	MC- 1	668	13350025	MC-14
417	11498219	MC- 1	668	13353215	MC- 1
422	11499745	MC-27	668	13353595	MC- 7
422	11620385	MC-20	668	13354295	MC- 2
422	11620525	MC-20	668	13360365	MC- 2
422	11622415	MC- 4	675	13468068	MC-11
422	11622553	MC- 4	675	13468718	MC- 4
422	11622765	MC- 1	675	13471198	MC-13
422	11622989	MC- 1	676	13496118	MC-15
423	11664295	MC-14	676	13500528	MC- 9
423	11667065	MC- 9	676	13502978	MC- 9
423	11668395	MC- 3	676	13505498	MC- 9
423	11668535	MC- 3	676	13507948	MC- 9
423	11668745	MC- 1			
423	11668885	MC- 1			
430	11796766	MC-27			
430	11796976	MC-27			
430	11797486	MC-21			
430	11798186	MC-13			
430	11799586	MC- 4			
430	11799726	MC- 4			
430	11800006	MC- 4			
430	11800146	MC- 1			
431	11833536	MC-17			
431	11835566	MC- 3			
431	11835706	MC- 3			
431	11835986	MC- 3			
431	11836126	MC- 1			
436	11973786	MC-28			
436	11974064	MC-22			
436	11974908	MC-14			
436	11975328	MC-14			
436	11976588	MC- 7			
436	11976728	MC- 7			
436	11977068	MC- 7			
436	11977149	MC- 1			
437	12010321	MC-18			
437	12012561	MC- 9			
437	12012709	MC- 9			
437	12012789	MC- 9			
437	12013129	MC- 1			
444	12150532	MC-22			
444	12150962	MC-15			
444	12152962	MC- 7			
444	12152982	MC- 7			
444	12153092	MC- 1			
445	12186062	MC-19			
445	12187062	MC-11			
445	12188372	MC- 4			
445	12188512	MC- 4			
445	12188792	MC- 4			
445	12188932	MC- 1			
450	12324301	MC-23			
450	12326721	MC-15			
450	12327781	MC- 7			
450	12328121	MC- 2			
450	12328401	MC- 2			
451	12361731	MC-19			
451	12362931	MC- 1			
451	12363891	MC- 5			
451	12364031	MC- 5			
451	12364311	MC- 5			
451	12364951	MC- 1			
456	12502270	MC- 1			
459	12535030	MC-30			
459	12535100	MC-30			
459	12535170	MC-27			
459	12535240	MC-27			
459	12535590	MC-20			
459	12535250	MC- 1			
473	12685638	MC-21			
473	12686058	MC-14			
473	12686708	MC-14			
478	12866028	MC-10			
478	12874998	MC-12			
478	12875568	MC- 1			
479	12901378	MC-22			
479	12902148	MC-14			
479	12909968	MC- 2			
479	12910058	MC- 7			
528	12985432	MC-23			
528	12985842	MC-15			

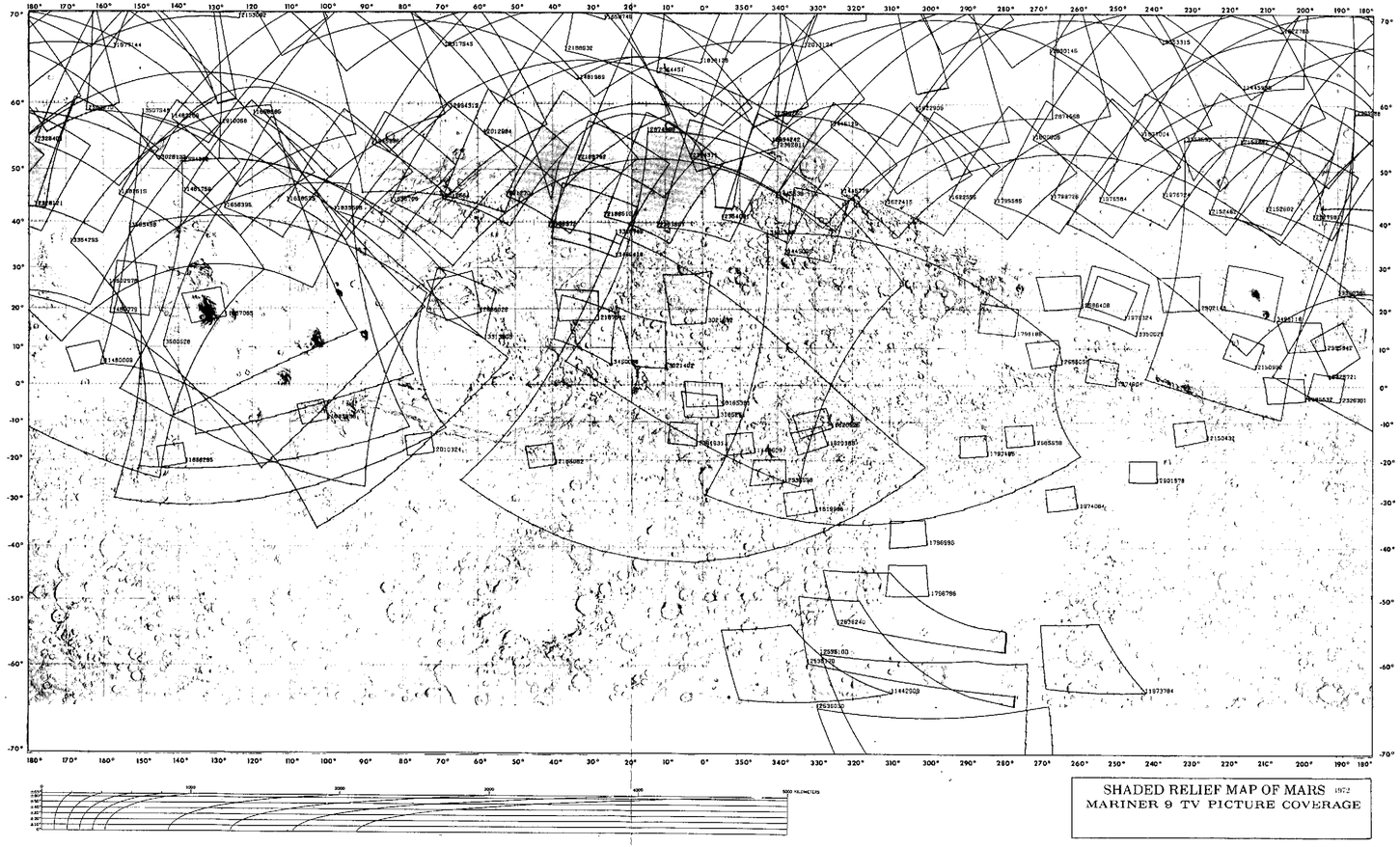

Fig. 9. Extended Mission, Phase II, Revs 416-676.

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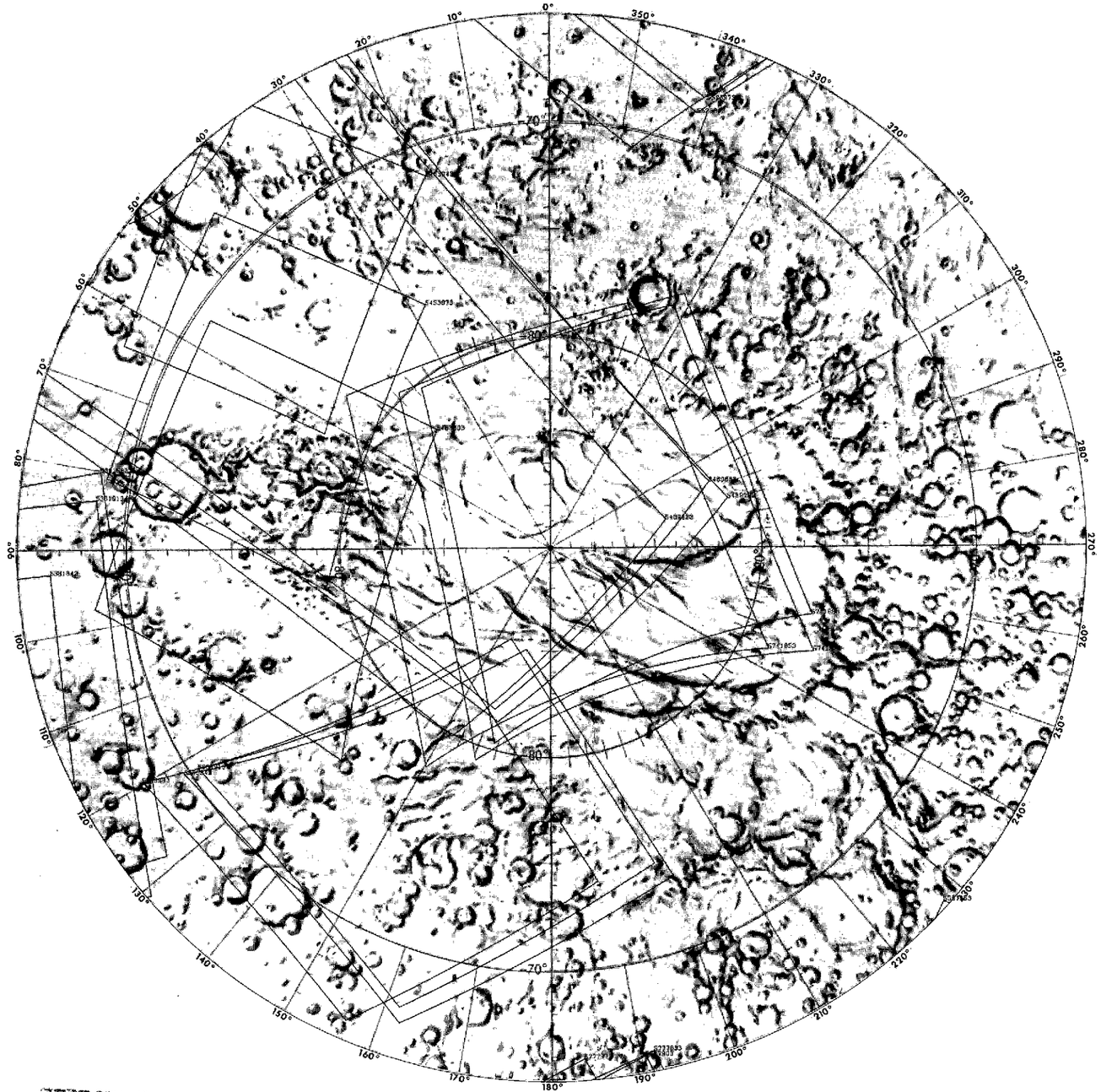
III. Polar Stereographic Projections of the South Pole: Wide-Angle Camera Coverage



SOUTH POLAR REGION	
MAP CYCLE 1A REVS 100-118 NON-GLOBAL A CAMERA	
REV	DAS TIME
106	5381843
106	5381913
106	5381983
108	5453803
108	5453873
108	5453943
109	5489783
109	5489853
109	5489923
110	5525833
110	5525903
110	5525973
111	5561953
113	5633843
113	5633913
113	5633983
116	5741853
116	5741923
116	5741993
117	5777833
117	5777903
117	5777973

Fig. 10. Mapping Cycle IA, Non-Global, Revs 100-118.

SOUTH POLAR REGION	
MAP CYCLE 1A REVS 100-118 GLOBAL A CAMERA	
REV	DAS TIME
100	5164703
100	5164773
101	5200683
101	5200753
102	5236803
103	5272643
105	5344603
106	5380513
107	5416493
108	5452473
108	5452543
109	5488453
109	5488523
110	5524503
110	5524573
111	5560483
111	5560553
112	5596463
112	5596533
113	5632513
113	5632583
114	5668493
114	5668563
115	5704473
115	5704543
116	5740523
116	5740593
117	5776503
117	5776573
118	5812483
118	5812553

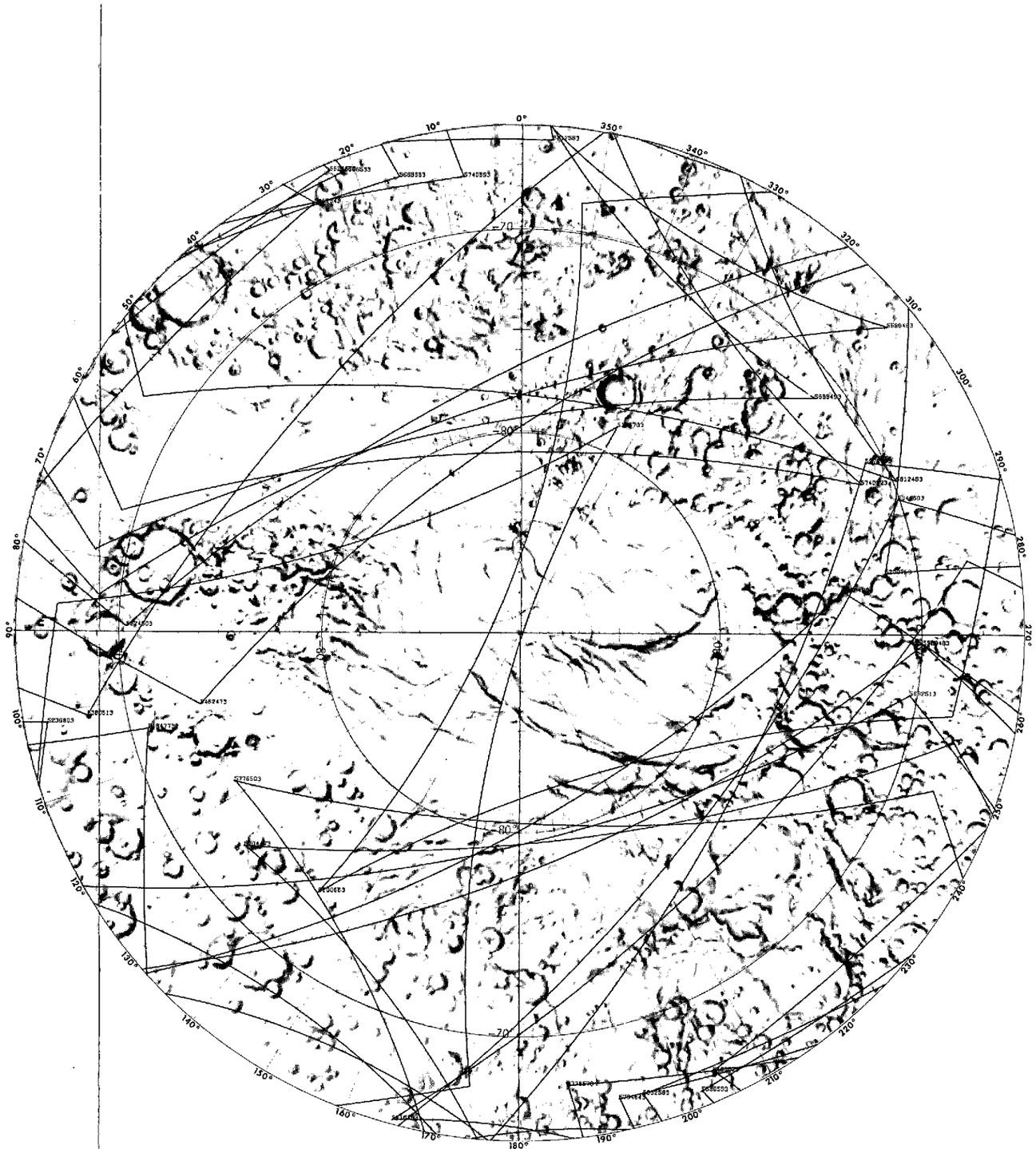


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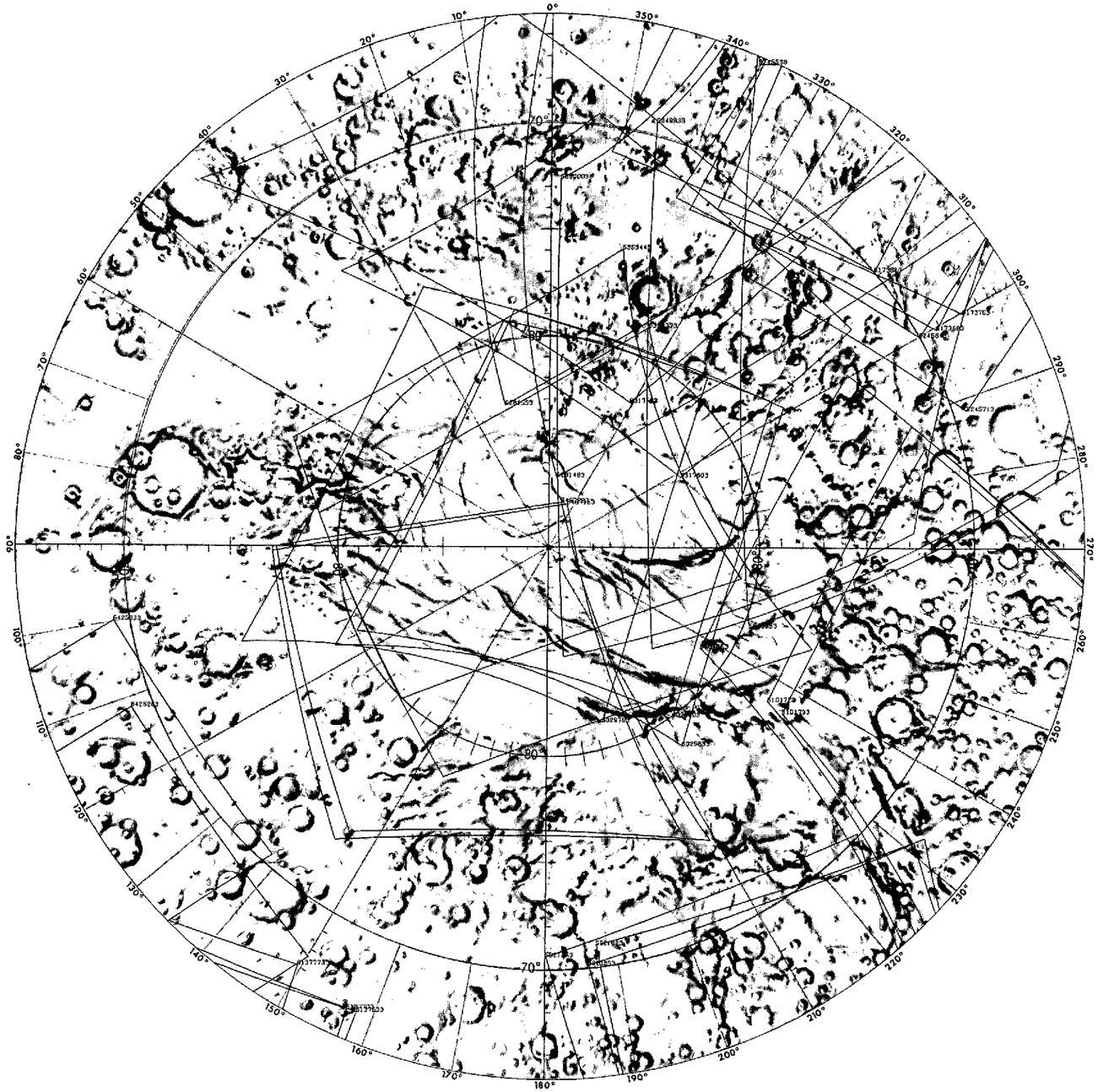
Fig. 11. Mapping Cycle IA, Global, Revs 100-118.



SOUTH POLAR REGION	
MAP CYCLE 1B REVS 119-138 NON-GLOBAL A CAMERA	
REV	DAS TIME
119	5849863
119	5849933
119	5850003
121	5921823
121	5921893
121	5921963
124	6029763
124	6029833
124	6029903
126	6101653
126	6101723
126	6101793
127	6137633
127	6137703
127	6137773
128	6173613
128	6173683
128	6173753
130	6245538
130	6245643
130	6245713
131	6281483
131	6281553
132	6317533
132	6317603
133	6353373
133	6353443
135	6425263
135	6425333
137	6497153
137	6497223

Fig. 12. Mapping Cycle IB, Non-Global, Revs 119-138.

SOUTH POLAR REGION	
MAP CYCLE 1B REVS 119-138 GLOBAL A CAMERA	
REV	DAS TIME
119	5848533
119	5848603
120	5884513
120	5884583
121	5920493
121	5920563
122	5956473
122	5956543
123	5992453
123	5992523
126	6100323
126	6100393
127	6136303
127	6136373
128	6172283
128	6172353
129	6208193
129	6208263
130	6244173
130	6244243
131	6280083
131	6280153
132	6316063
132	6316133
133	6351973
133	6352043
134	6387953
134	6388023
135	6423863
135	6423933
136	6459843
136	6459913
137	6495753
137	6495823
138	6531733
138	6531803

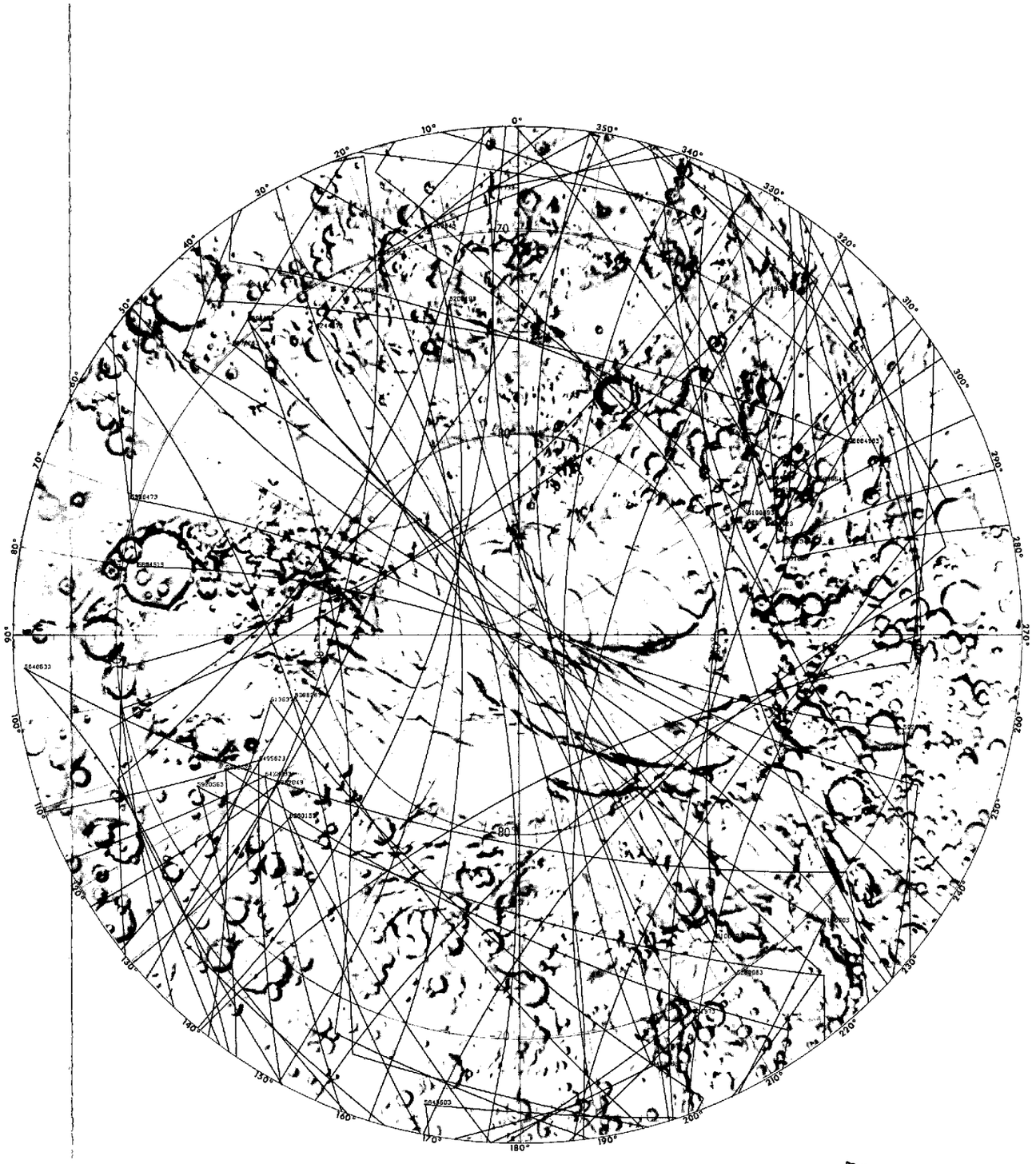


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Fig. 13. Mapping Cycle 1B, Global, Revs 119-138.

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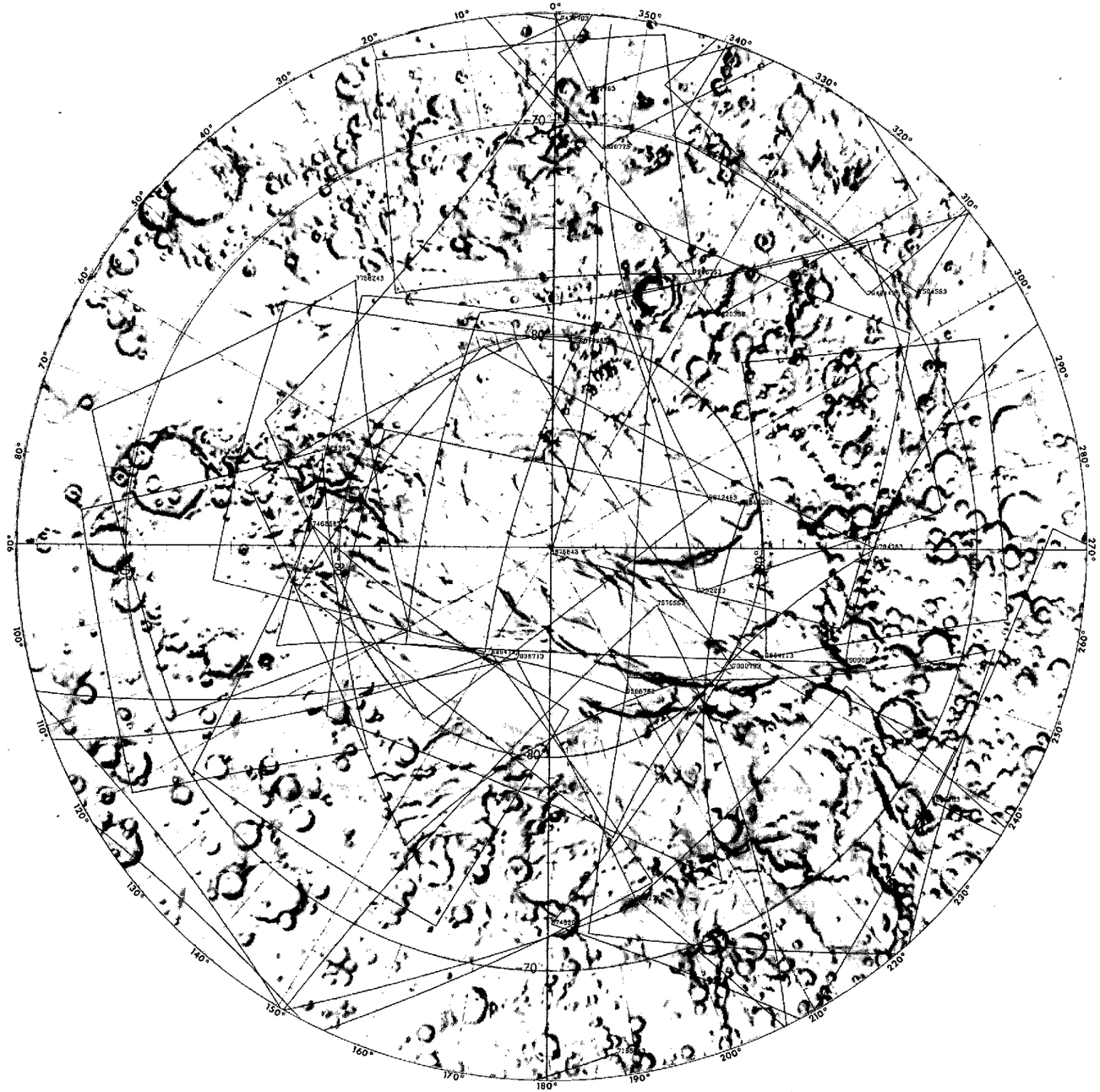

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SOUTH POLAR REGION	
MAP CYCLE 2 REVS 139-177 A CAMERA	
REV	DAS TIME
141	6640933
141	6641003
142	6676843
144	6748803
145	6784783
146	6820763
148	6892723
149	6928773
150	6964753
151	7000733
152	7036713
153	7072763
154	7108743
157	7216753
159	7288783
160	7324763
163	7432703
164	7468683
165	7504593
167	7576553
168	7612463
169	7648443
171	7720333
172	7756243
173	7792223
174	7828133
175	7864113
176	7900023

Fig. 14. Mapping Cycle II, Revs 139-177.

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SOUTH POLAR REGION
MAP CYCLE 3 REVS 178-217 A CAMERA

REV	DAS TIME
179	8008033
180	8044013
181	8079643
181	8079923
182	8115903
183	8151883
184	8187869
185	8223849
187	8295809
188	8331859
189	8367839
191	8439869
192	8475849
196	8619839
198	8691939
199	8727849
200	8763829
202	8835859
203	8871769
204	8907679
206	8979639
207	9015549
208	9051669
209	9087089
209	9087439
210	9123419
211	9159329
212	9195309
213	9231219
214	9267199
215	9303109
216	9339089
217	9374999

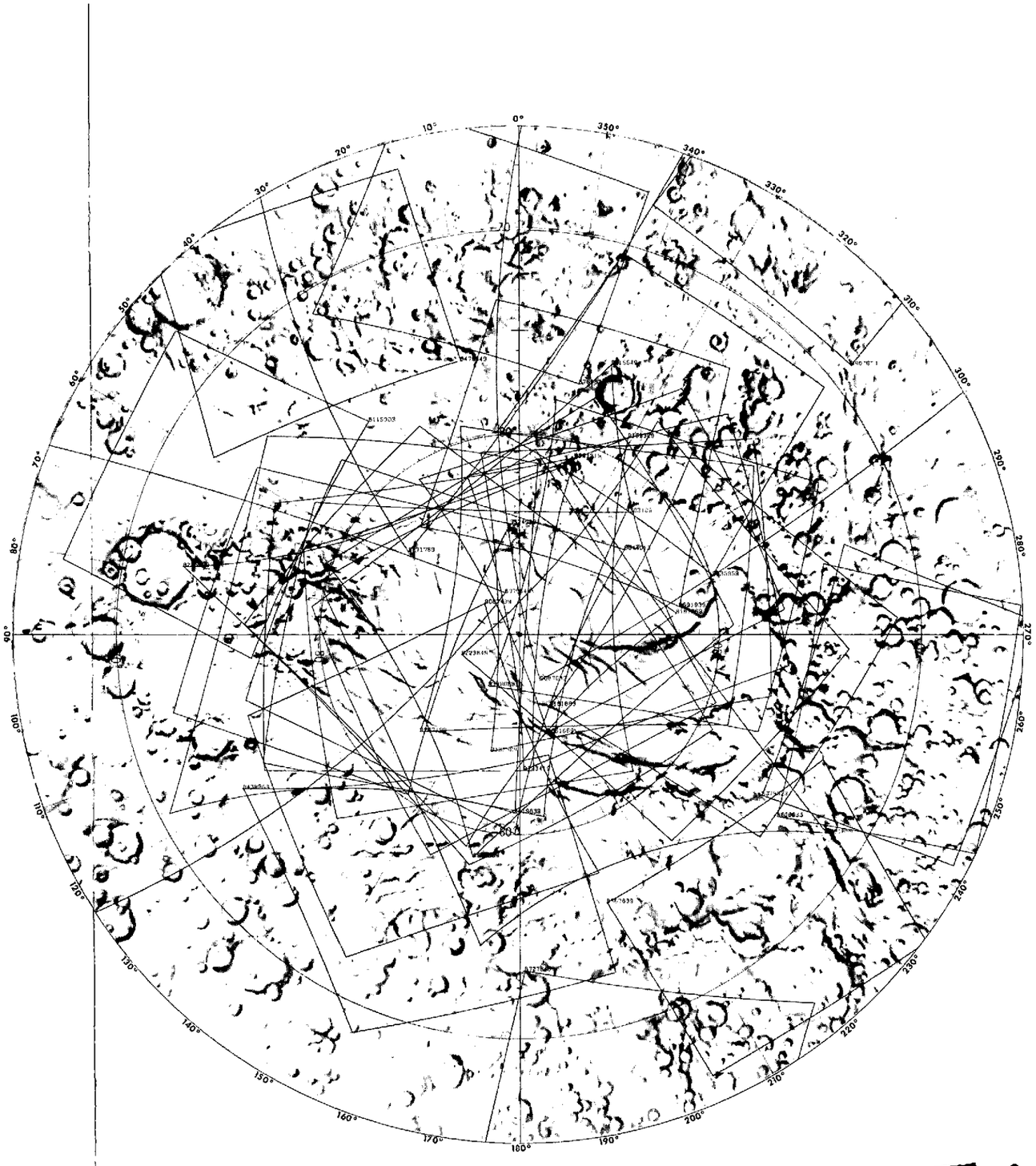
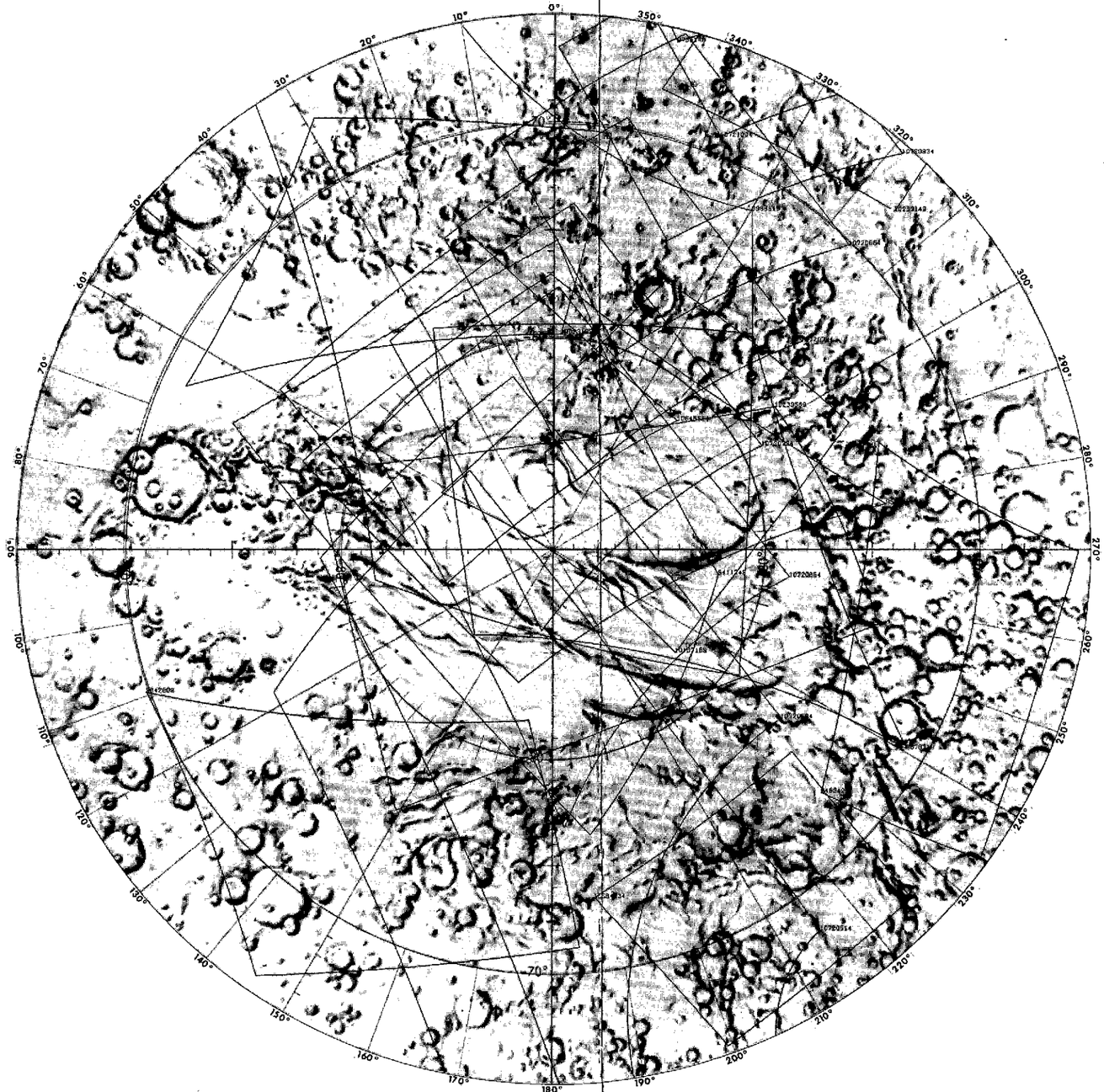


Fig. 15. Mapping Cycle III, Revs 178-217.



SOUTH POLAR REGION	
EXTENDED MISSION PHASE 1 REVS 218-262 A CAMERA	
REV	DAS TIME
218	9411749
220	9483429
223	9590739
227	9735149
230	9842809
231	9878719
234	9986519
235	10023199
239	10167189
241	10239149
241	10239569
260	10648554
261	10684534
262	10720514
262	10720584
262	10720654
262	10720724
262	10720794
262	10720864
262	10720934
262	10721004

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Fig. 16. Extended Mission, Phase I, Revs 218-262.

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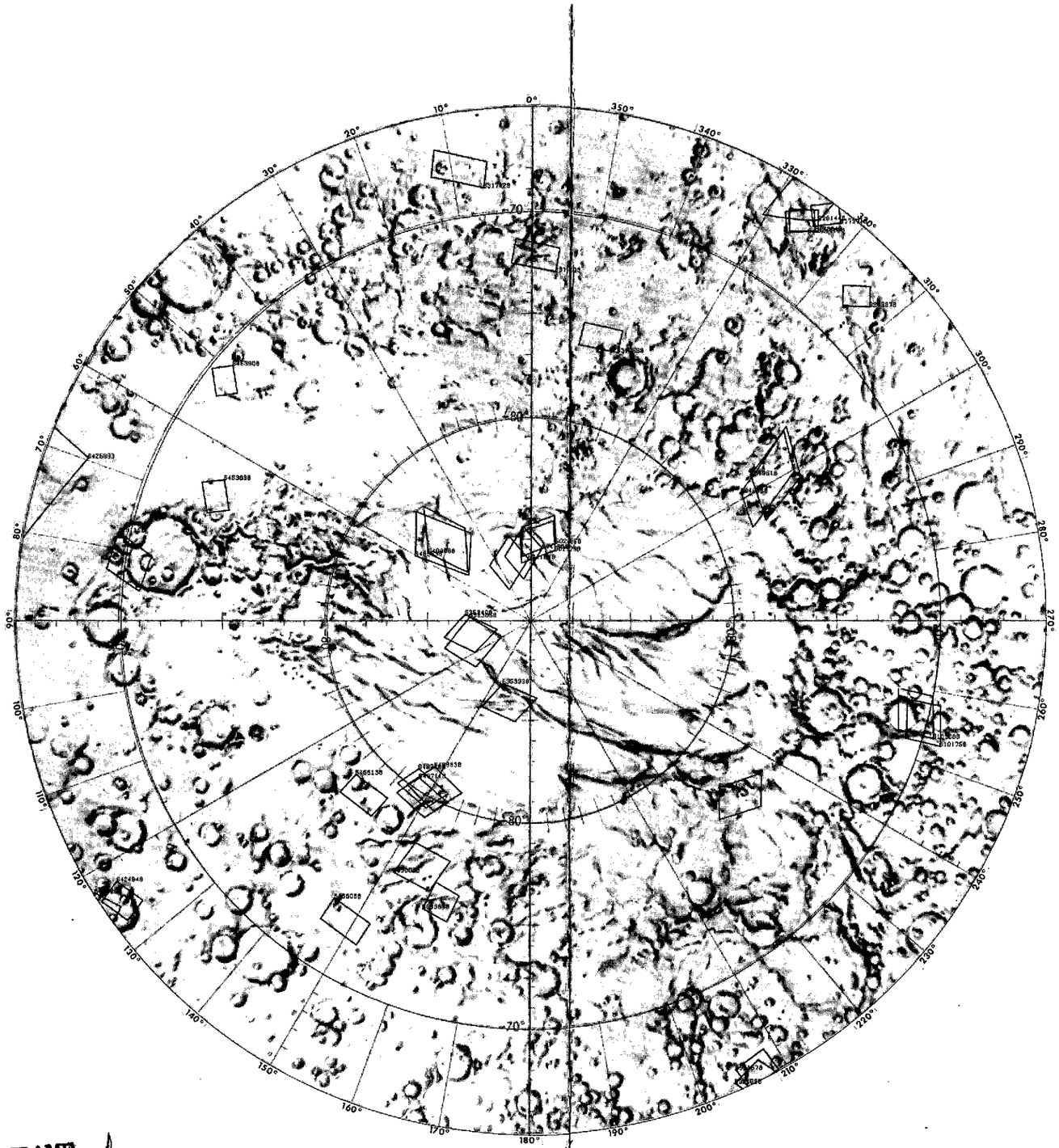
IV. Polar Stereographic Projections of the South Pole: Narrow-Angle Camera Coverage



SOUTH POLAR REGION	
MAP CYCLE 1 REVS 100-138 B CAMERA	
REV	DAS TIME
100	5166068
100	5166138
108	5453838
108	5453908
109	5489538
109	5489888
113	5633598
113	5633948
116	5741888
116	5741958
119	5849618
119	5849968
121	5921578
121	5921928
124	6029798
124	6029868
125	6065498
126	6101688
126	6101758
128	6173648
128	6173718
130	6245608
130	6245678
131	6281168
131	6281448
132	6317428
132	6317498
132	6317568
133	6353058
133	6353338
133	6353408
135	6424948
135	6425298
135	6425893
137	6496838
137	6497118
137	6497188

Fig. 17. Mapping Cycle I, Revs 100-138.

SOUTH POLAR REGION
MAP CYCLE 2A REVS 139-159 B CAMERA

REV	DAS TIME
139	6568728
140	6604708
141	6640688
141	6641038
142	6676808
142	6676878
142	6676948
144	6748768
144	6748838
144	6748908
145	6784538
145	6784818
145	6784888
147	6856498
148	6892688
148	6892758
148	6892828
149	6928528
150	6964718
150	6964788
150	6964858
151	7000488
151	7000768
151	7000838
152	7036678
152	7036748
152	7036818
157	7216508
157	7216788
157	7216858
159	7288538
159	7288818
159	7288888

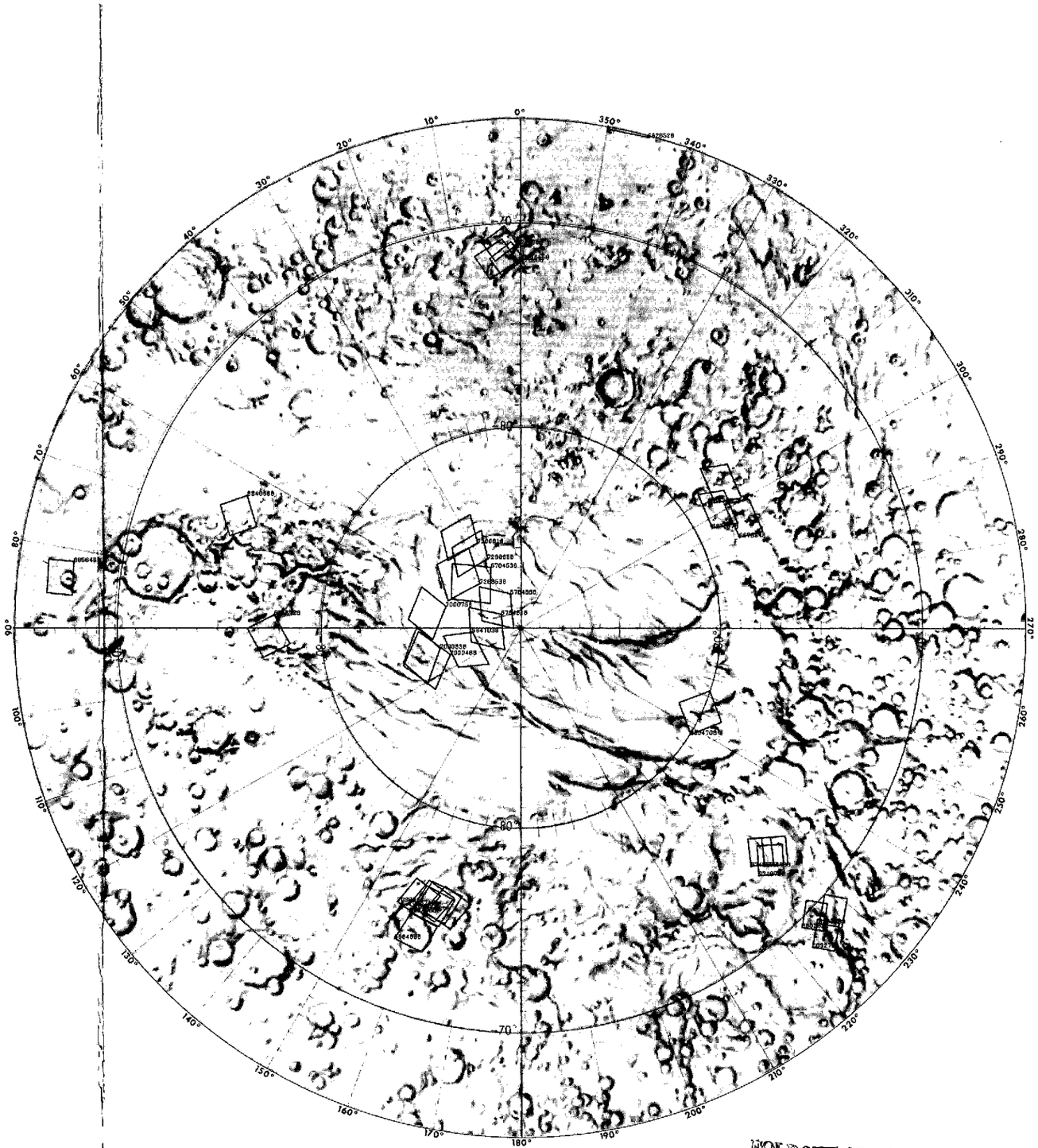


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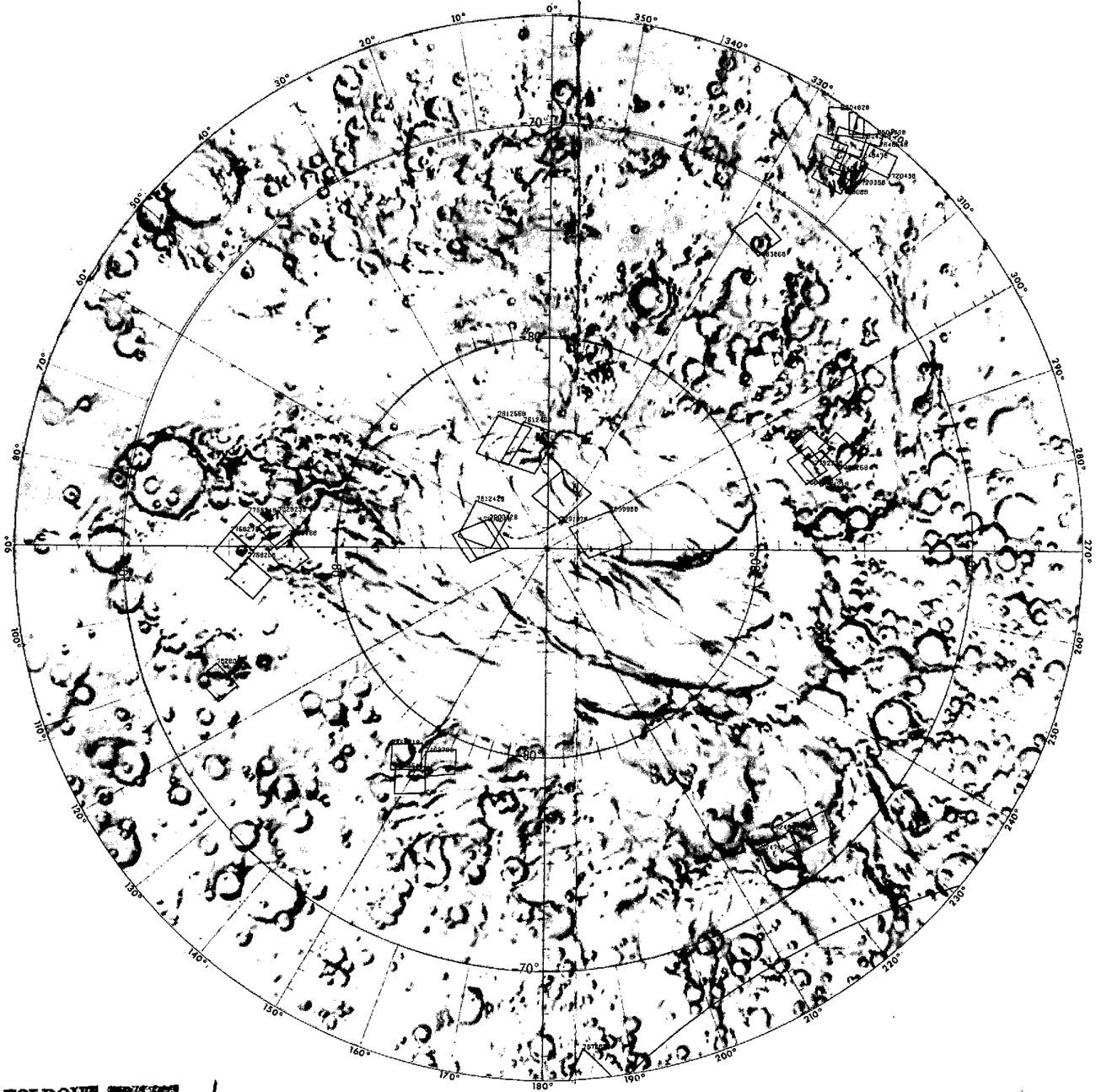
Fig. 18. Mapping Cycle IIA, Revs 139-159.



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SOUTH POLAR REGION	
MAP CYCLE 2B REVS 160-177 B CAMERA	
REV	DAS TIME
160	7324728
160	7324798
160	7324868
164	7468648
164	7468718
164	7468788
165	7504348
165	7504628
165	7504698
167	7576658
168	7612428
168	7612498
168	7612568
169	7648198
169	7648478
169	7648548
171	7720088
171	7720368
171	7720438
172	7756208
172	7756278
172	7756348
173	7791978
173	7792258
173	7792328
174	7828098
174	7828168
174	7828238
175	7863868
175	7864148
175	7864218
176	7899988
176	7900058
176	7900128

Fig. 19. Mapping Cycle IIB, Revs 160-177.

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SOUTH POLAR REGION
MAP CYCLE 3A REVS 178-188 B CAMERA

REV	DAS TIME
179	8007928
179	8007998
179	8008068
180	8043908
180	8043978
180	8044048
180	8044328
180	8044398
181	8079818
181	8079888
181	8079958
181	8080238
181	8080308
182	8115798
182	8115868
182	8115938
182	8116218
182	8116288
183	8151778
183	8151848
183	8151918
183	8152198
183	8152268
184	8187764
184	8187834
184	8187904
184	8188184
184	8188254
185	8223744
185	8223814
185	8223884
185	8224164
185	8224234
187	8295704
187	8295774
187	8295844
187	8296124
187	8296194
188	8331754
188	8331824
188	8331894
188	8332174
188	8332244

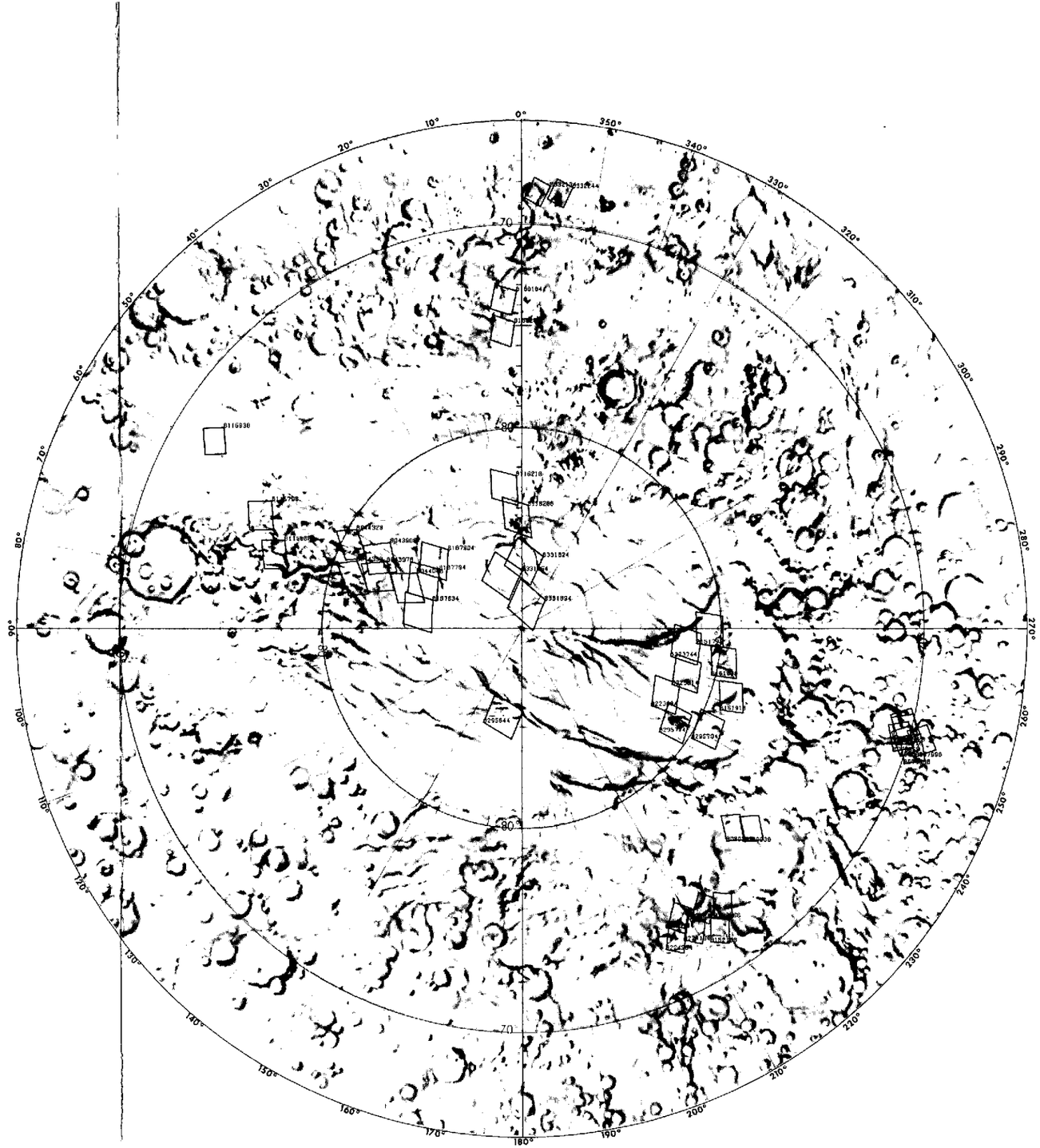
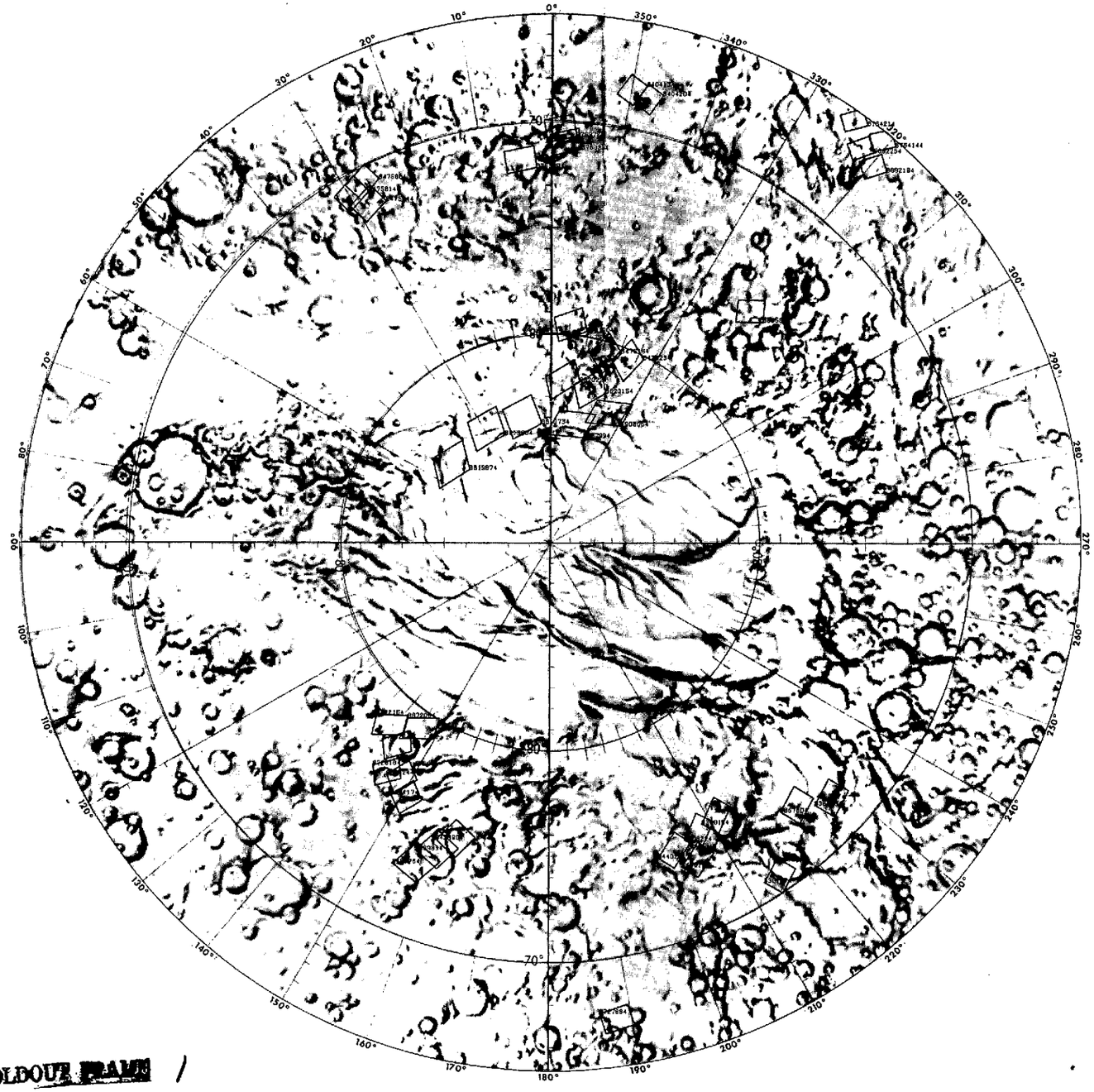


Fig. 20. Mapping Cycle IIIA, Revs 178-188.



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SOUTH POLAR REGION	
MAP CYCLE 3B REVS 189-204 B CAMERA	
REV	DAS TIME
189	8367734
189	8367804
189	8367874
189	8368154
189	8368224
190	8404134
190	8404204
191	8439764
191	8439834
191	8439904
191	8440184
191	8440254
192	8475744
192	8475814
192	8475884
192	8476164
192	8476234
195	8584174
195	8584244
196	8619734
196	8619804
196	8619874
196	8620154
196	8620224
198	8691904
198	8692184
198	8692254
199	8727884
199	8728164
199	8728234
200	8763724
200	8763794
200	8763864
200	8764144
200	8764214
202	8835894
203	8872084
203	8872154
204	8907994
204	8908064

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Fig. 21. Mapping Cycle IIIB, Revs 189-204.

SOUTH POLAR REGION
MAP CYCLE 3C REVS 205-217 B CAMERA

REV	DAS TIME
206	8979534
206	8979604
206	8979674
206	8979954
206	8980024
207	9015444
207	9015514
207	9015584
208	9051564
208	9051634
208	9051704
209	9087334
209	9087404
209	9087474
210	9123314
210	9123384
210	9123454
211	9159224
211	9159294
211	9159364
212	9195204
212	9195274
212	9195344
212	9195484
212	9195554
213	9231114
213	9231184
213	9231254
214	9267094
214	9267164
214	9267234
215	9303004
215	9303074
215	9303144
216	9338984
216	9339054
216	9339124
217	9374894
217	9374964
217	9375034

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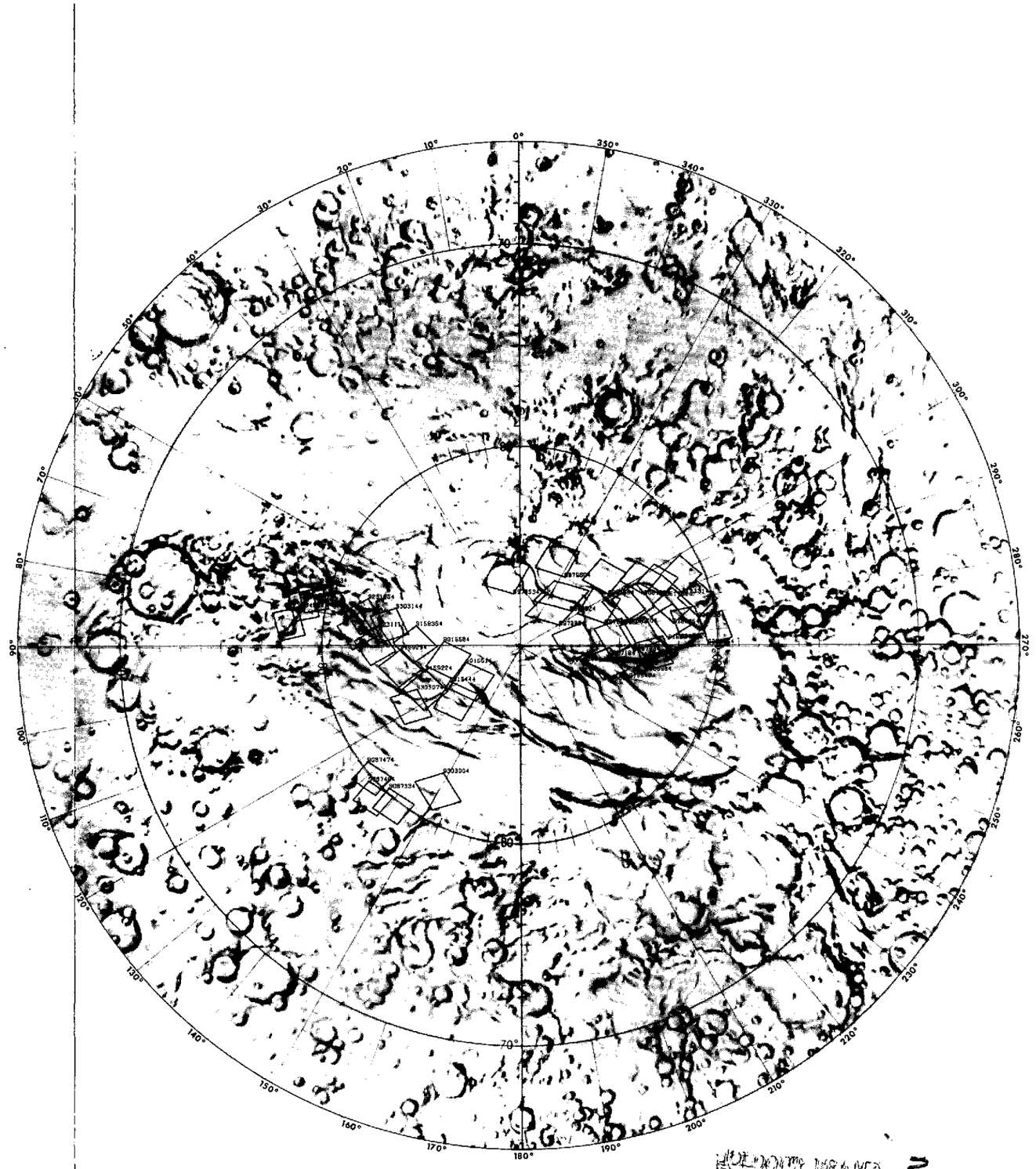

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Fig. 22. Mapping Cycle IIIC, Revs 205-217.

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SOUTH POLAR REGION	
EXTENDED MISSION PHASE 1A REVS 218-226 B CAMERA	
REV	DAS TIME
218	9411224
218	9411294
218	9411364
219	9446854
219	9446924
219	9446994
220	9482764
220	9482834
220	9482904
220	9483044
220	9483114
220	9483184
220	9483394
221	9518744
221	9518814
221	9518884
221	9519024
221	9519094
221	9519164
222	9554724
222	9554794
222	9554864
223	9590984
223	9591054
223	9591124
224	9626684
224	9626754
224	9626824
226	9698644
226	9698714
226	9698784
226	9698924
226	9698994
226	9699064

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Fig. 23. Extended Mission, Phase IA, Revs 218-226.

SOUTH POLAR REGION
EXTENDED MISSION PHASE 1B REVS 227-235 B CAMERA

REV	DAS TIME
227	9734554
227	9734624
227	9734764
227	9734834
227	9734904
228	9770674
228	9770744
228	9770814
229	9806654
229	9806724
229	9806794
230	9842774
231	9878684
232	9914664
232	9914734
232	9914804
232	9915154
232	9915224
232	9915294
233	9950714
233	9950784
233	9950854
234	9986484
234	9986694
234	9986764
234	9986834
235	10022674
235	10022744
235	10022814
235	10023164
235	10023234

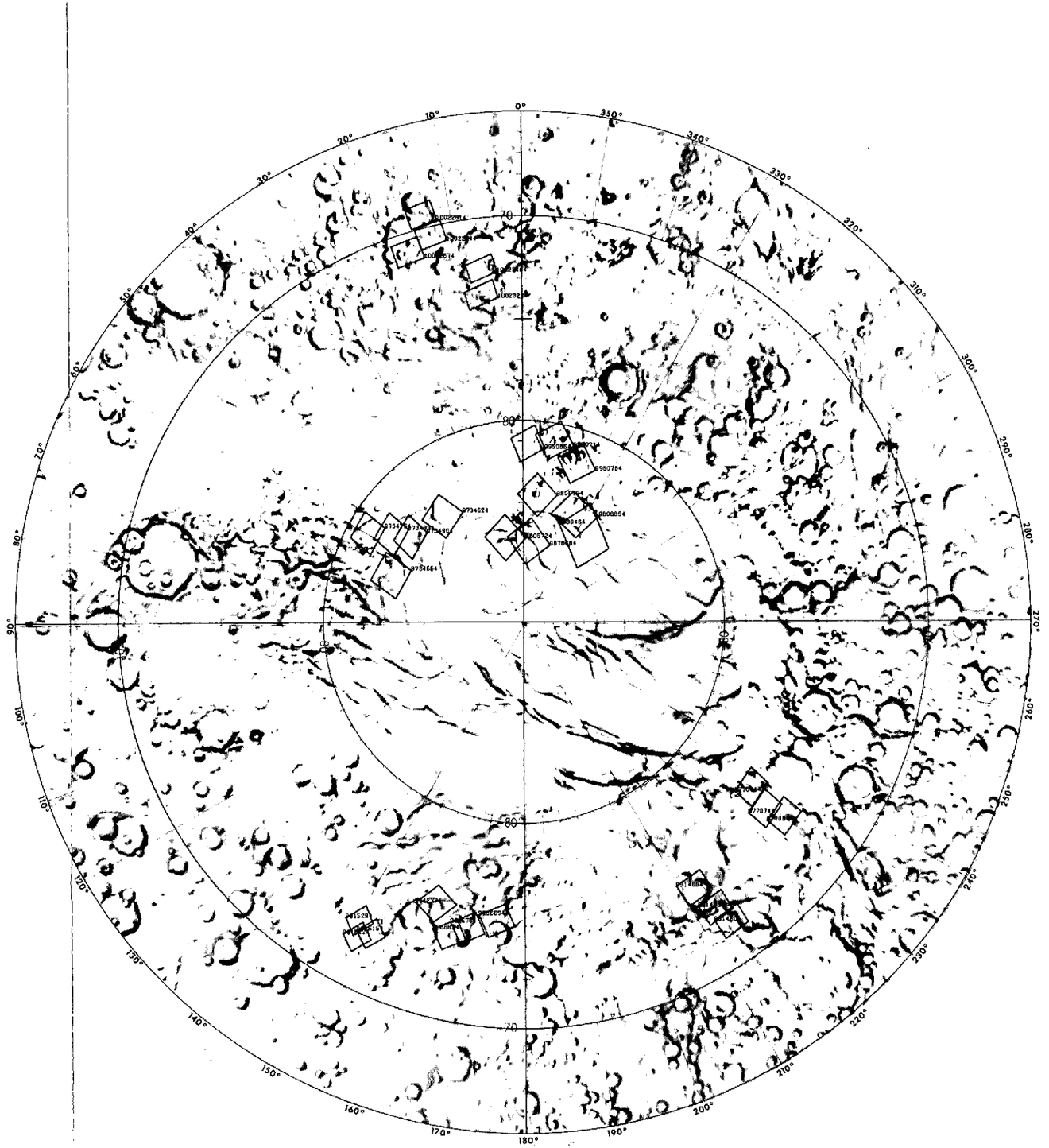
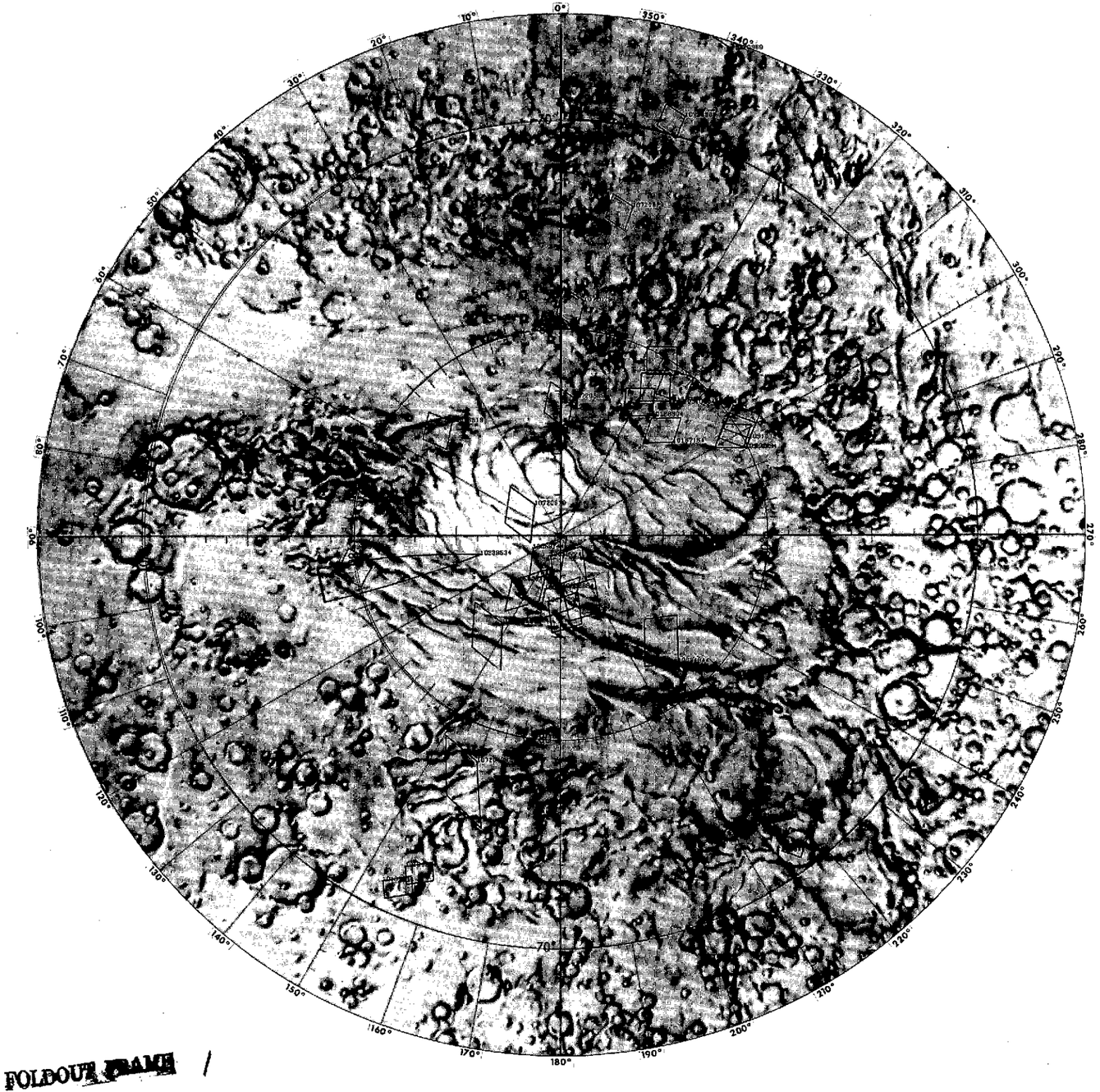


Fig. 24. Extended Mission, Phase IB, Revs 227-235.



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SOUTH POLAR REGION	
EXTENDED MISSION PHASE 1C REVS 236-262 B CAMERA	
REV	DAS TIME
236	10058654
236	10058724
236	10058794
236	10059144
236	10059214
236	10059284
237	10094844
238	10131244
238	10131314
239	10166664
239	10166734
239	10166804
239	10167154
239	10167224
241	10239534
243	10310584
243	10310654
243	10310724
244	10346634
260	10648519
261	10684499
262	10720479
262	10720549
262	10720619
262	10720689
262	10720759
262	10720829
262	10720899
262	10720969

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Fig. 25. Extended Mission Phase IC, Revs 236-262.

V. Polar Stereographic Projections of the North Pole: Wide-Angle Camera Coverage

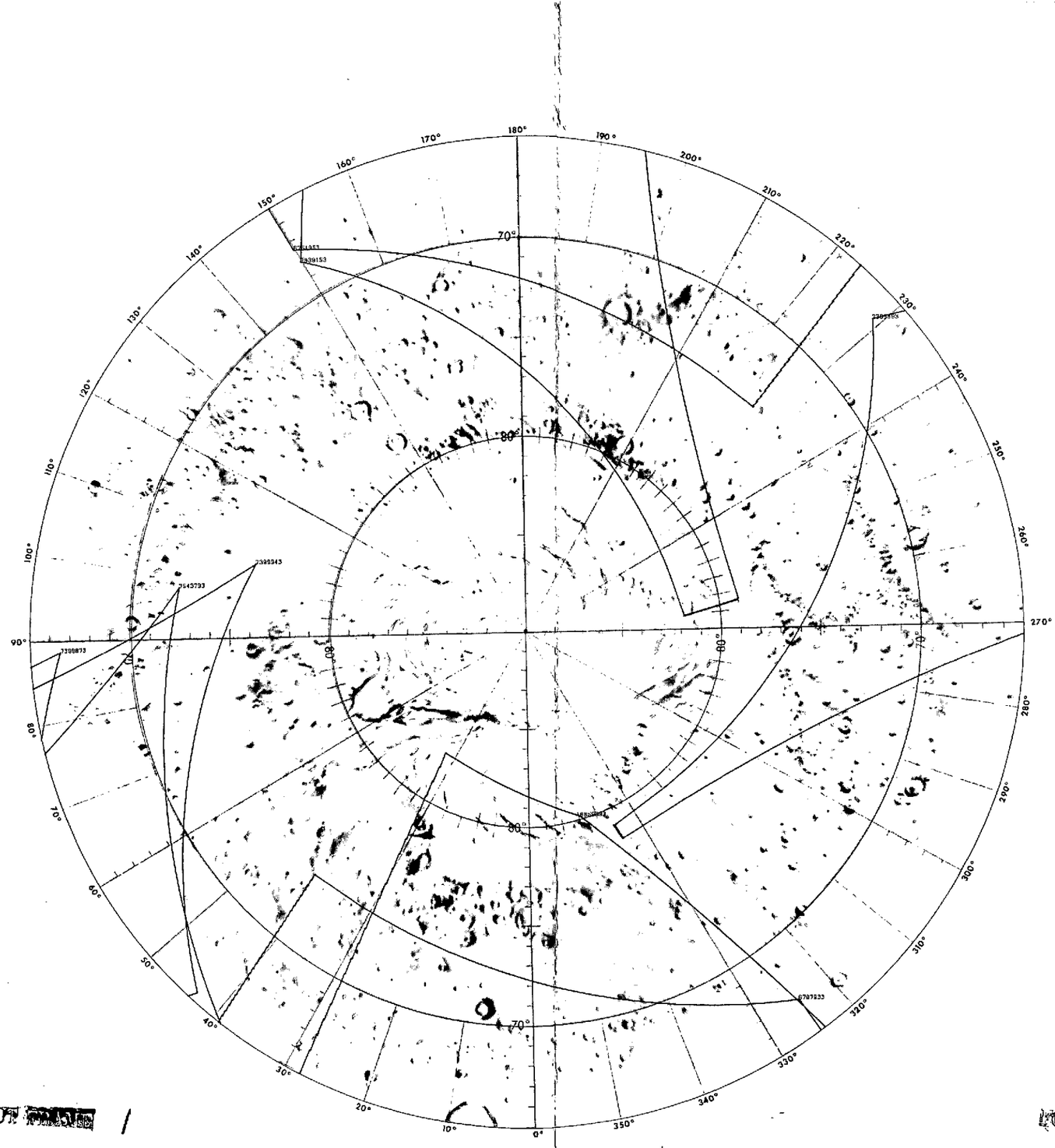


Fig. 26. Mapping Cycle II, Revs 139-177.

NORTH POLAR REGION
MAP CYCLE 3A REVS 178-196 A CAMERA

REV	DAS TIME
178	7975553
178	7975623
178	7975833
179	8011603
179	8011813
179	8011883
180	8047793
180	8047863
181	8083493
182	8119473
183	8155663
184	8191369
184	8191439
184	8191649
185	8227419
185	8227629
186	8263399
186	8263609
187	8299589
188	8335359
188	8335429
188	8335639
189	8371409
189	8371619
190	8407389
190	8407599
191	8443369
191	8443439
192	8479349
192	8479419
192	8479629
193	8515399
194	8551449
194	8551659
196	8623339

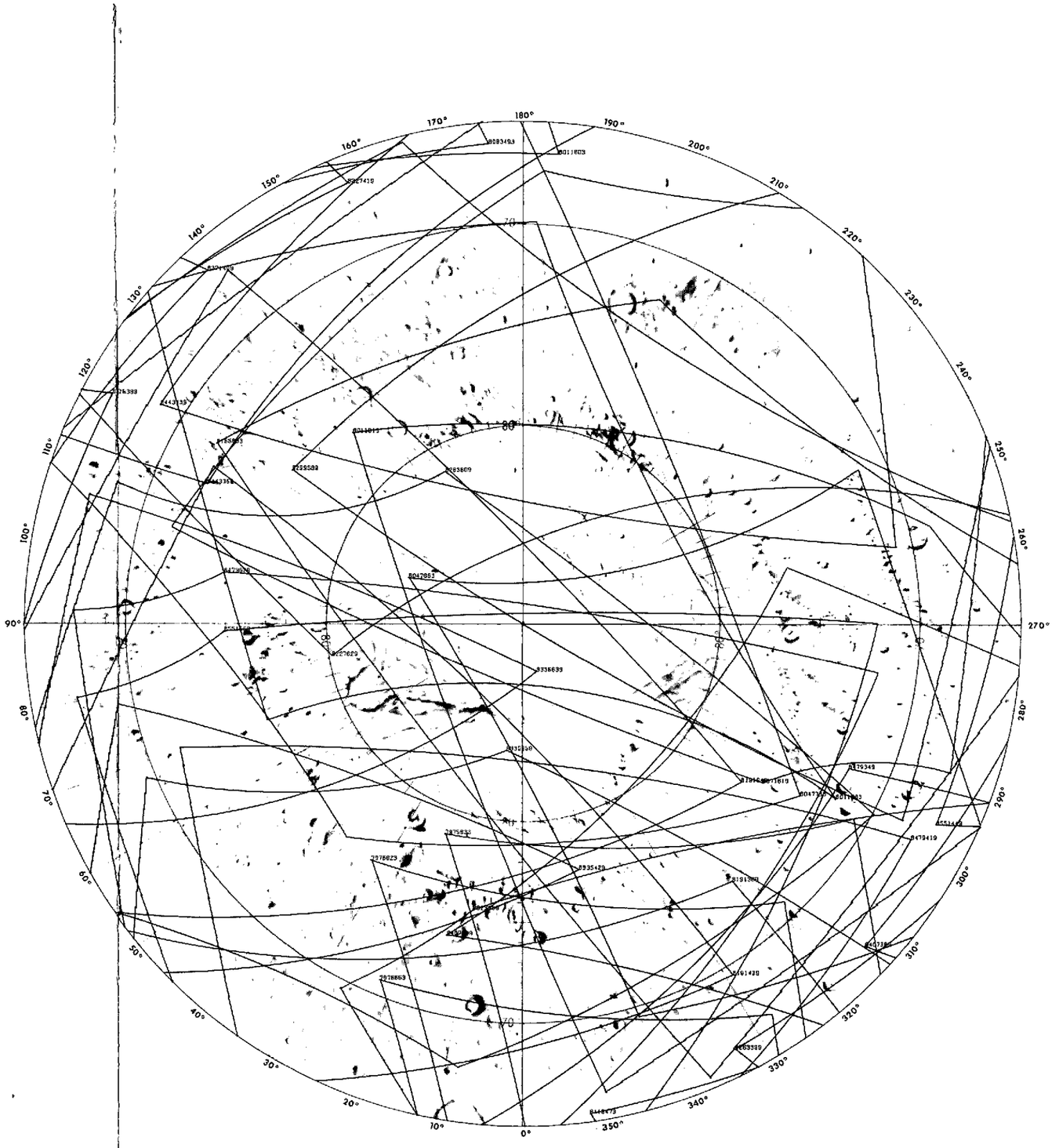
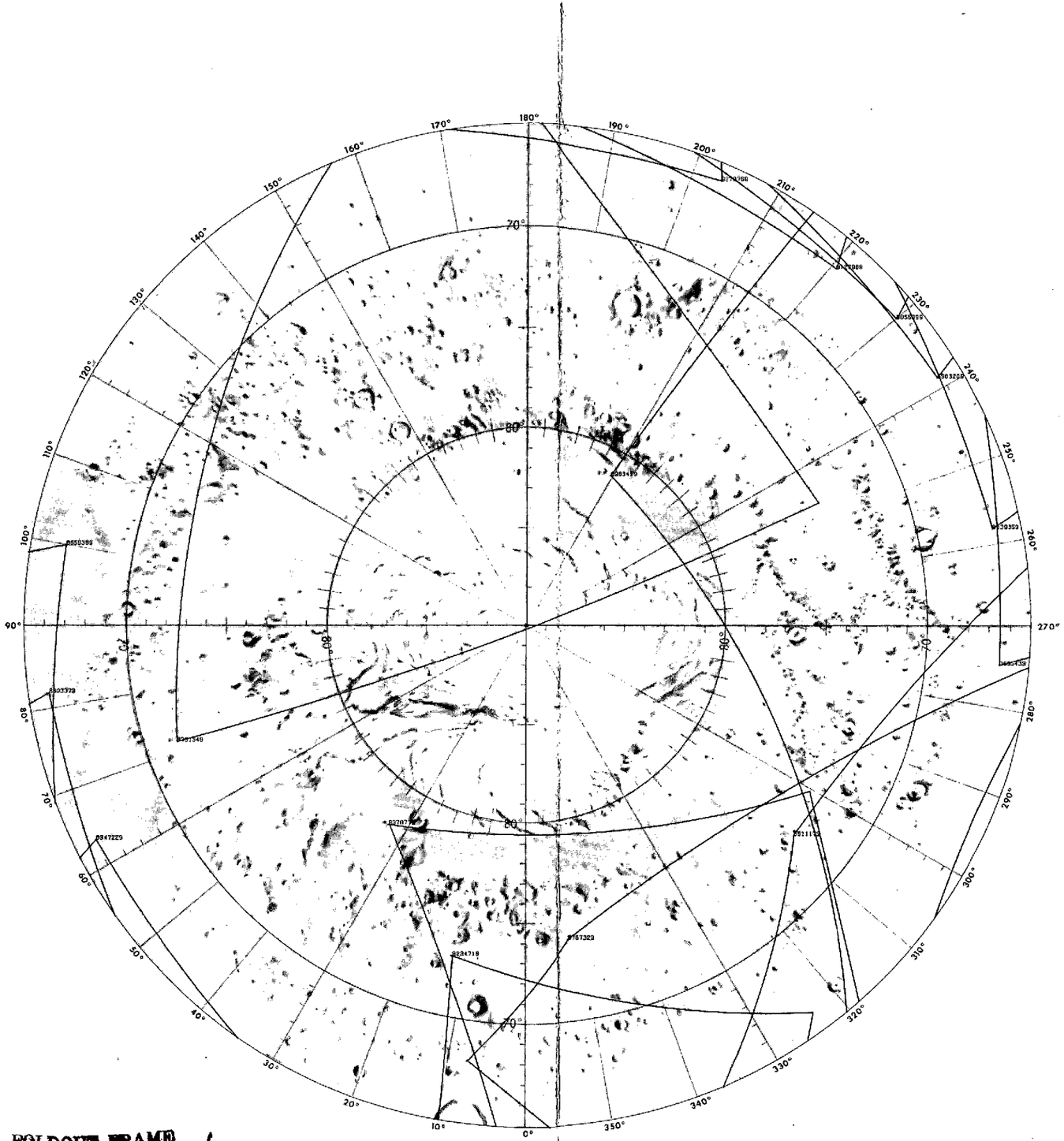


Fig. 27. Mapping Cycle IIIA, Revs 178-196.



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NORTH POLAR REGION	
MAP CYCLE 3B REVS 197-217 A CAMERA	
REV	DAS TIME
197	8659389
198	8695439
199	8731349
200	8767329
201	8803379
202	8839359
204	8911179
205	8947229
206	8983209
206	8983419
208	9055099
210	9126989
213	9234719
214	9270769
217	9378779

Fig. 28. Mapping Cycle IIIB, Revs 197-217.

NORTH POLAR REGION	
EXTENDED MISSION PHASE 1 REVS 218-262 A CAMERA	
REV	DAS TIME
219	9451159
222	9557979
222	9558189
222	9559099
225	9666549
225	9666619
225	9666689
225	9666759
225	9666829
225	9666899
225	9666969
226	9702529
231	9882219
239	10171109
245	10386569
245	10386709
245	10386779
245	10386849
245	10386919
245	10386989
259	10616564
259	10616634
259	10616704

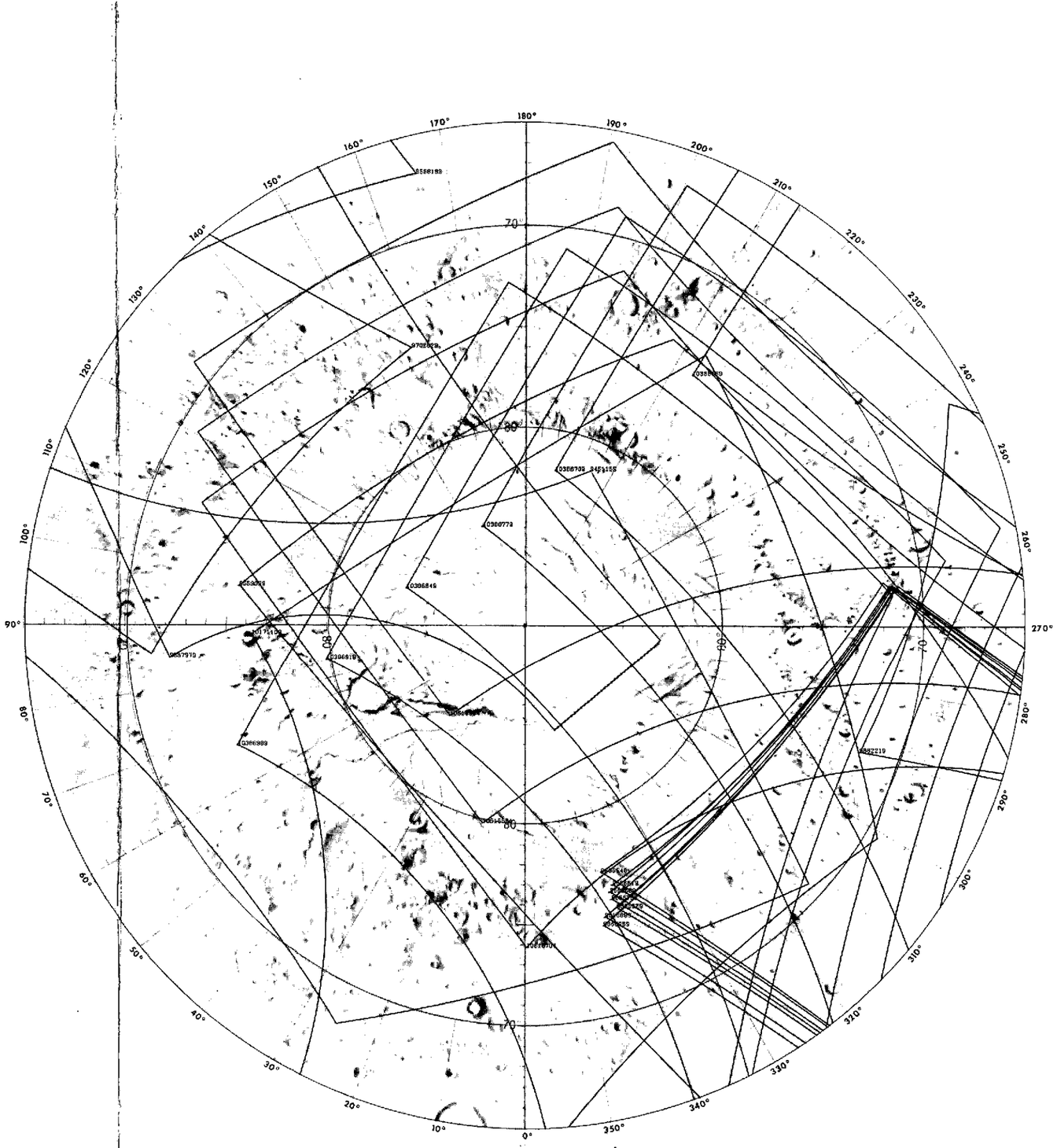
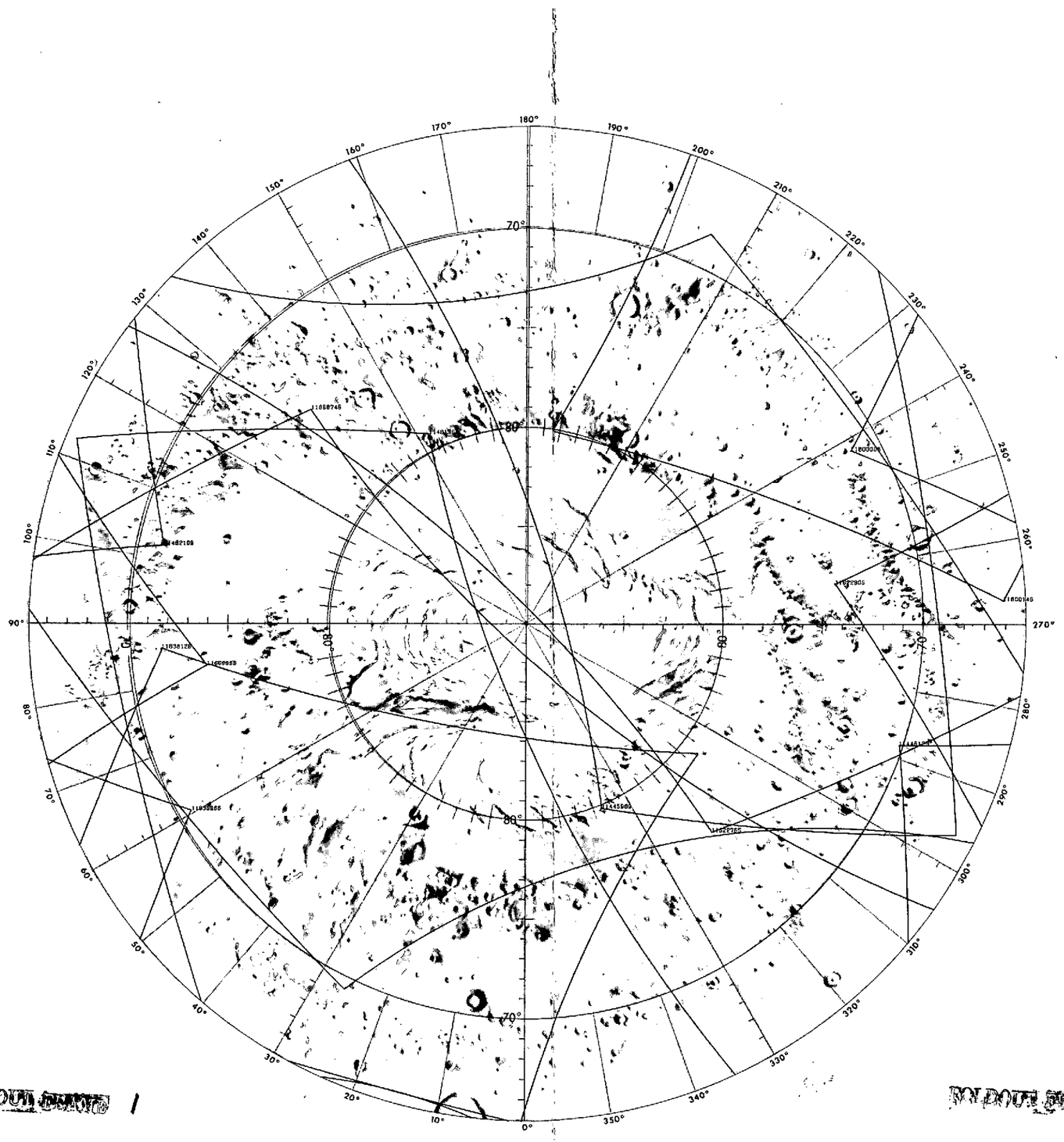


Fig. 29. Extended Mission, Phase I, Revs 218-262.



NORTH POLAR REGION
EXTENDED MISSION PHASE 2A REVS 416-431 NON-GLOBAL A CAM

REV	DAS TIME
416	11445989
416	11446129
417	11481969
417	11482109
422	11622765
422	11622905
423	11658745
423	11658885
430	11800006
430	11800146
431	11835986
431	11836126

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Fig. 30. Extended Mission, Phase IIA, Non-Global, Revs 416-431.

NORTH POLAR REGION
EXTENDED MISSION PHASE 2B REVS 436-676 NON-GLOBAL A CAM

REV	DAS TIME
436	11977004
436	11977144
437	12012984
437	12013124
444	12152882
444	12153092
445	12188792
445	12188932
450	12328401
451	12364311
451	12364451
458	12502270
459	12538250
667	13317545
668	13353315
668	13360385

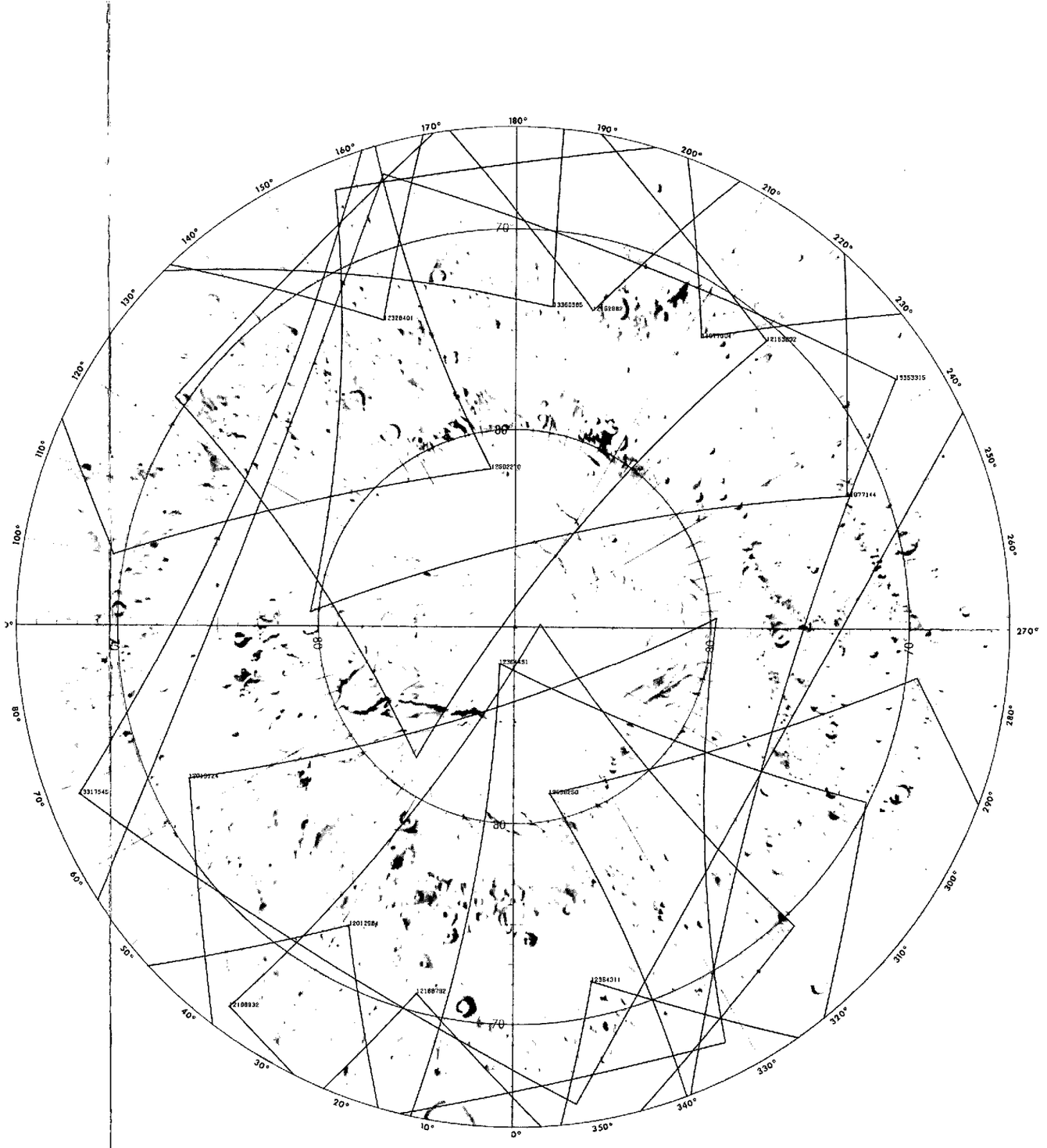
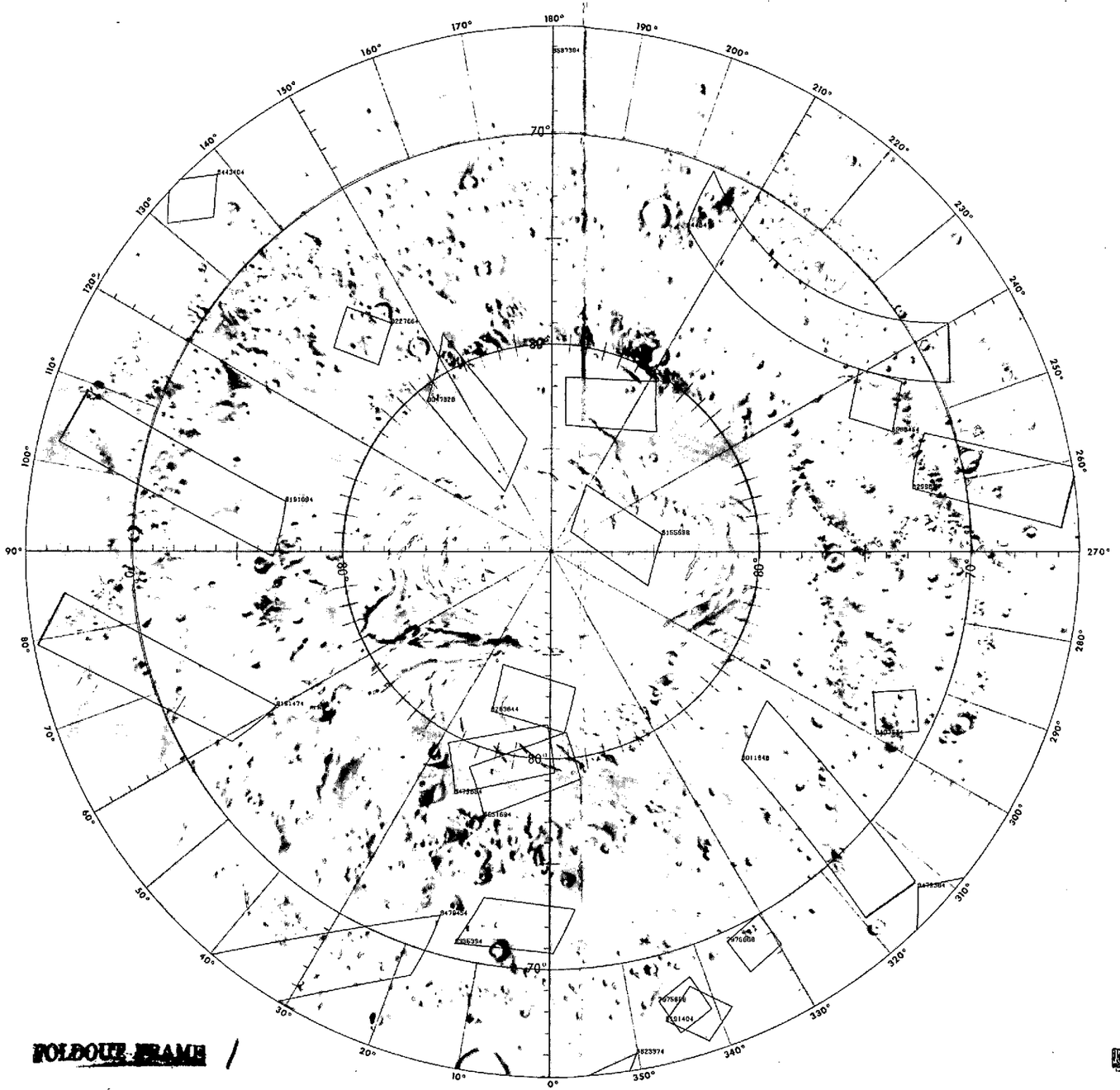


Fig. 31. Extended Mission, Phase 11B, Non-Global, Revs 436-676.

VI. Polar Stereographic Projections of the North Pole: Narrow-Angle Camera Coverage



NORTH POLAR REGION	
MAP CYCLE 3 REVS 178-217 B CAMERA	
REV	DAS TIME
178	7975658
178	7975868
179	8011848
180	8047828
183	8155698
184	8191404
184	8191474
184	8191684
185	8227664
186	8263644
187	8299624
188	8335394
189	8371654
190	8407634
191	8443404
191	8443474
192	8479384
192	8479454
192	8479664
194	8551694
195	8587394
196	8623374
206	8983454

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Fig. 32. Mapping Cycle III, Revs 178-217.

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NORTH POLAR REGION
EXTENDED MISSION PHASE 1 REVS 218-262 B CAMERA

REV	DAS TIME
219	9451124
225	9666514
225	9666584
225	9666654
225	9666724
225	9666794
225	9666864
225	9666934
239	10171004
239	10171144
245	10386674
245	10386744
245	10386814
245	10386884
245	10386954
245	10387024
248	10494474
259	10616529
259	10616599
259	10616669

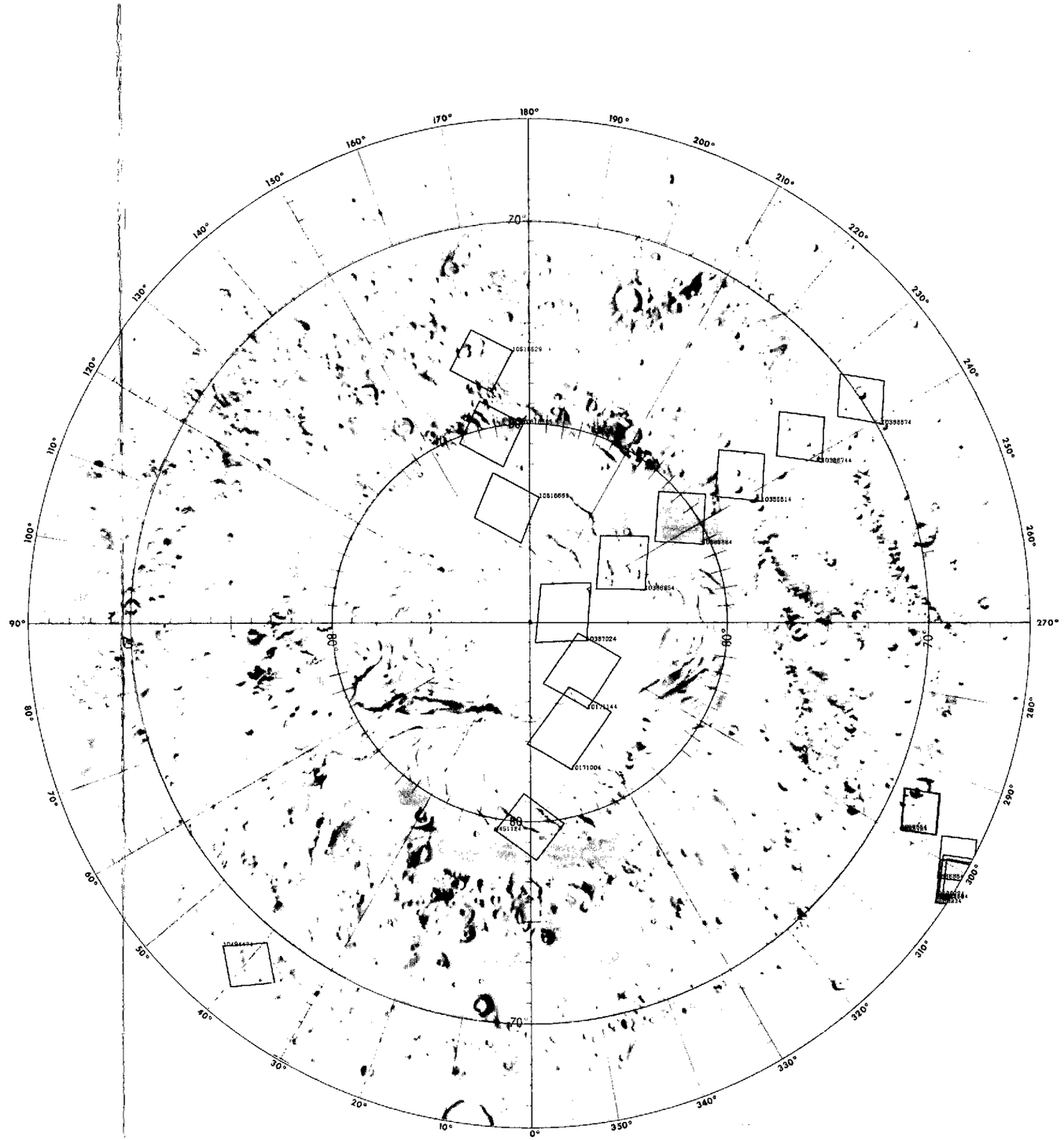
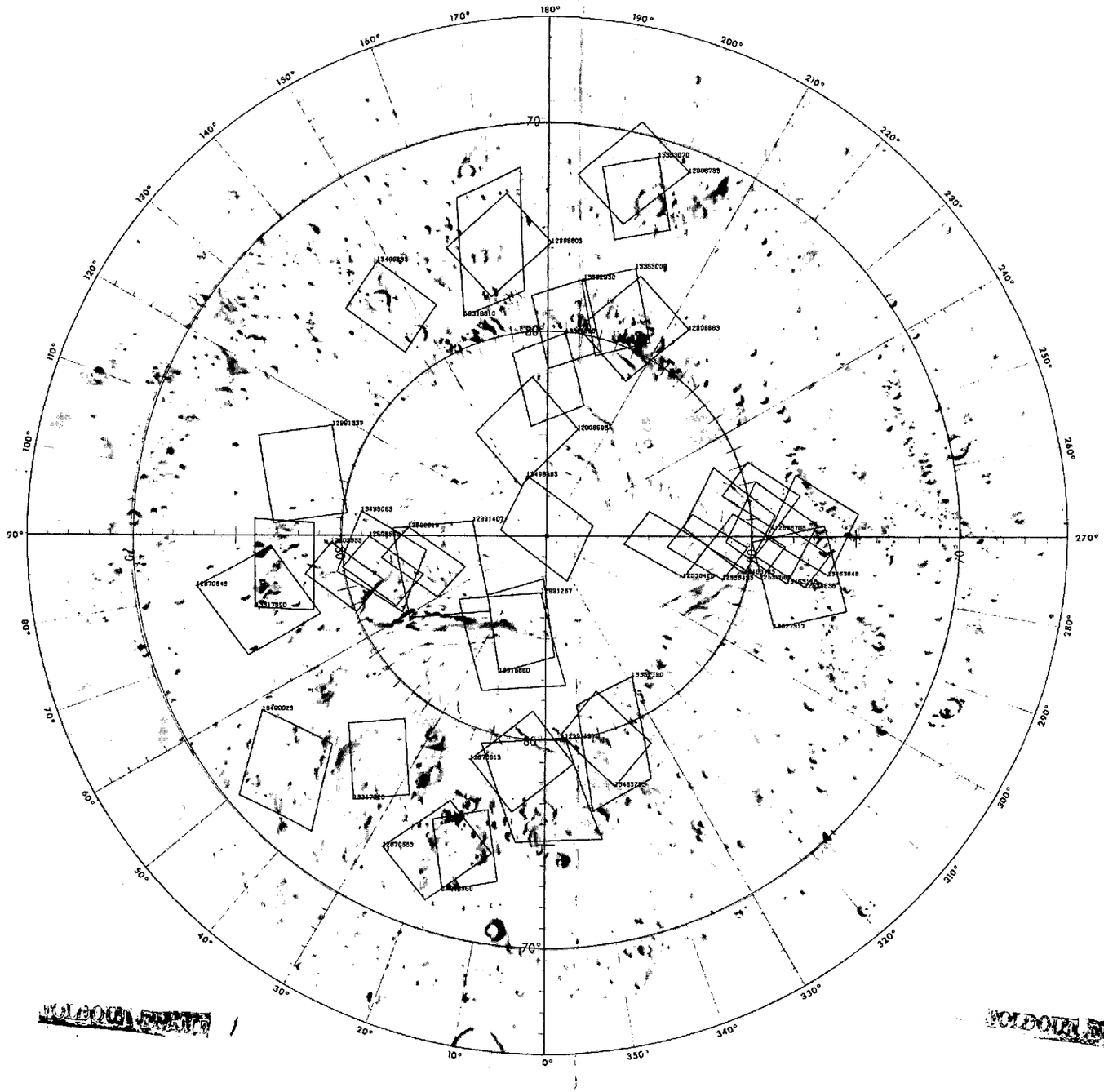


Fig. 33. Extended Mission, Phase I, Revs 218-262.



NORTH POLAR REGION	
EXTENDED MISSION PHASE 2,3,4 REVS 416-676 B CAMERA	
REV	DAS TIME
458	12502515
458	12502585
458	12502655
459	12538425
459	12538495
459	12538565
459	12538635
459	12538705
478	12870543
478	12870613
478	12870683
479	12906593
479	12906663
479	12906733
479	12906803
528	12991197
528	12991267
528	12991337
528	12991407
529	13027317
667	13316810
667	13316880
667	13316950
667	13317020
667	13317090
668	13352790
668	13352860
668	13352930
668	13353000
668	13353070
675	13463043
675	13463113
675	13463183
675	13463253
676	13499023
676	13499093
676	13499163
676	13499233

Fig. 34. Extended Mission, Phases II, III, IV, Revs 416-676.