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TECHNICAL PUBLICATION

PHOTOGRAPHIC EVALUATION REPORT

MISSION 1025-1

5-10 OCTOBER 1965

MISSION 1025-2

10-15 OCTOBER 1965

[redacted]

JANUARY 1966

COPY [redacted]

88 PAGES

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Notice of Missing Page(s)

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NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

LIST OF ILLUSTRATIONS

SYNOPSIS

Mission 1025 (JX-28) was a 2-part photographic mission programmed to achieve coverage which is to be utilized for cartographic purposes. The vehicle was intentionally flown with the camera system rotated horizonally 180 degrees from its normal position, orbiting nose-first instead of tail-first. Certain variations in normal system parameters resulted from this change in orientation: in the descending mode, the stellar camera looks westward, the master is the aft-looking and the slave is the forward-looking camera.

A normal orbit was achieved. Photographic coverage was accomplished between 5 and 15 October 1965. Clouds covered approximately 30 percent of the entire mission. Solar elevations ranged from minus 12.6 degrees to plus 70.5 degrees in Mission 1025-1 and from minus 16.4 degrees to plus 58.- degrees in Mission 1025-2. All cameras and associated equipment functioned properly throughout the mission except for the starboard horizon camera platen clamping device of the slave (forward-looking) camera. The platen clamping device malfunctioned at pass 9D, frame 13, and caused the starboard horizon imagery to be smeared for the rest of the mission. More than 16 million square nautical miles of plottable photographic coverage was acquired. The recovery capsules from missions 1025-1 and 1025-2 were retrieved by air catch during revolutions 81 and 161, respectively.

There is no significant difference in the panoramic material between mission 1025-1 and 1025-2. Both payloads of the mission were assigned MTF ratings of 85.

GENERAL FLIGHT DATA

1. Launch and Recovery Dates

Launch Date, Mission 1025-1: 5 October 1965
Recovery Date, Mission 1025-1: 10 October 1965

Activation Date, Mission 1025-2: 10 October 1965
Recovery Date, Mission 1025-2: 15 October 1965

2. Orbital Parameters (Actual)

	Mission 1025-1 Rev 40	Mission 1025-2 Rev 121
Period	89.76 min	89.69 min
Perigee	112.87 nm	111.40 nm
Apogee	180.80 nm	180.70 nm
Eccentricity	0.00947	0.00925
Inclination Angle	75.04 N	75.03 N
Perigee Latitude	44.34 N	57.08 N

3. Photographic Operations

A. Pass Information

	Mission 1025-1	Mission 1025-2
Operational Passes	40	33
Operational/Domestic Passes	4	1
Domestic Passes	2	6
Domestic/Engineering Passes	-	1
Engineering Passes	1	2
Total Photo Passes	47	43
Recovery Revolution	81	161

B. Film Footage/Frame Totals

	Master	Slave
Footage Available	16,000 (Approx)	16,000 (Approx)
Preflight Footage	264.5	264.5
Process Footage (1025-1)	8,054	7,970
Process Footage (1025-2)	7,981	8,020
Titled Frames (1025-1)	2,937	2,896
Titled Frames (1025-2)	3,016	3,034

PART I. CAMERA OPERATIONS

1. Master (Aft-looking) Panoramic Camera No 142

The master panoramic camera functioned properly throughout the mission. Detriments to the material are comparable to those of previous missions. These minor degradations include:

a. Continuous rail scratches are present on both edges of the film. They appear to be slightly more pronounced on this mission than on previous missions.

b. Fine scratches, parallel to the major axis, appear just under the camera number and along the frequency mark edge. These scratches have been reported on previous missions and cause very minor degradations to the photographic record.

c. Most frames contain numerous fine emulsion scratches within the format. They are located under the binary word and at the take-up end of the frame.

d. Film transport was noted on the first and last frames of most passes. A splash type fog pattern appears along the frequency mark on the next-to-last frame. This pattern occasionally extends into the format. A large fog pattern covering approximately 1/4 of the frame is found on the sixth frame from the end of a few passes. Equipment shadowgraphs were noted at the beginning and ending of each new pass. A diagonal streak of fog is present between the 4th and 5th frames of a few passes. An example of this may be found in pass 127. All fog patterns are commensurate with the solar elevation and the duration of the sit period between each new pass.

e. Banding is present, but is only detectable where contrast and density permits. It is not as pronounced in this mission as it has been in material from previous missions.

2. Slave (Fwd-looking) Panoramic Camera No 127

The slave panoramic camera functioned properly throughout both parts of the mission. The detriments of the photographic record associated with the operation of the camera are listed below.

a. A scratch is present just inside the format of both edges of the take-up end of each frame and on both edges of the format beneath the camera number.

b. A group of short fine emulsion scratches are located across the width of the film at the take-up end of each frame and beneath the binary number.

c. Continuous scratches parallel to the edge of the film and outside the format are present throughout the mission. These scratches are attributed to the rails which support the film during transport. The scratches are slightly more pronounced than on previous missions.

d. The imagery along the frequency-mark edge is consistently superior to that along the title edge. However, the difference in resolution appears very subtle.

e. Film transport is present on the first and last frames of most passes. Equipment shadowgraphs are located inside the transport pattern of the last frame and are also present on the third frame from the end. Fog caused by light reflected from a curved surface is present between the third and fourth frame from the end of most passes. A biased streak of fog approximately 0.5 inches wide extends into the format on the title edge approximately 1.0 inch on the next to last frame. Fog caused by extraneous light is present on the sixth frame from the end of a few passes. The degree of fog is relative to the solar elevation and the camera off/on period.

f. Banding, although slight, is noted on a few frames where contrast and density permit.

3. Master Horizon Cameras

The port (take-up) and starboard (supply) cameras were operational throughout the mission. Exposure was adequate except where low solar elevations prevailed. The fiducials of both cameras are slightly bloomed but still usable. In the second payload ("B" bucket) a small static discharge was noted at the fiducial nearest the titled edge. This static appears on both cameras and is present throughout the mission. Vignetting was very minor and did not affect the horizon arc.

4. Slave Horizon Cameras

The port (supply) horizon camera was operational throughout the mission. The image corners are vignetted, but the horizon curves are unaffected and are usable for attitude reduction. Small static discharges are located in the corners of the format inside the take-up edge of the horizon frame.

The starboard (take-up) horizon camera was operational throughout the mission. However, image loss is caused by a malfunction of the

horizon camera platen clamping device at pass 9D, frame 13. Thereafter, to the end of the mission, the horizon image is smeared due to film movement during exposure. The image corners are vignetted to a higher extent than that of the port horizon. Small static discharges are adjacent to the horizon fiducials on both edges of the film. The 3 horizon fiducials next to the corresponding panoramic frame are bloomed.

5. Stellar Camera No D73 Reseau No 88 (Mission 1025-1)

The stellar camera functioned properly, recording 403 frames. Flare affects approximately 60 percent of most formats, but the stellar images are detectable in the heaviest density of fog. Many of the stellar images are elongated but no other odd configurations were noted.

Edge fog is continuous along the film edge opposite the correlation mark and appears periodically along the correlation-mark edge. Static discharges are present on frames 340 through 360. The fiducials are bloomed, but the cross hairs are sharp and well defined. The most severe degradation was an abrasion and associated feather-like emulsion cracks. The degradation is located between the format and the correlation mark, beginning in the preflight and continuing through frame 320. It is present intermittently from frame 320 through 403 with an associated plus density streak. The final 20 frames are slightly abraded and the last 4 frames are fogged due to film exhaustion.

6. Stellar Camera No D70 Reseau No 81 (Mission 1025-2)

The camera functioned properly throughout the mission, recording 408 frames. Over 30 stellar images are detectable in most frames. The majority of the images are elongated and dumb-bell shaped.

Edge fog is present intermittently on both edges. Emulsion cracks, perpendicular to the major axis, are present on 70 percent of the mission and become more severe on the latter portion. A series of fine plus density streaks parallel to the major axis is present throughout the mission. A crease across the film is located between frames 52 and 53. The fiducial marks are bloomed, but the cross hairs are discernible. The last 5 frames are severely fogged. The final 15 frames contains abrasions and static discharges due to film exhaustion.

7. Index Camera Unit No D73 Reseau No 78 (Mission 1025-1)

The index camera functioned properly, recording 420 frames. The exposure was adequate and the imagery is good. A crease, indented from the base side, and located 0.25 inch from and approximately parallel to the camera number edge, is present in the preflight material through frame 374. At frame 374 the crease moves to the camera number edge of the film, and continues along this edge through frame 408. Associated

with the crease are abrasions which are present through frame 402 and extend into the format in frames 27-38 and 374-402. An irregular plus density streak probably emanating from the crease is located in frames 402-409. Another plus density streak, inside the format 0.4 inch from the camera number edge, is located in frames 1-4. Emulsion cracking has been attributed to the crease and abrasions. The correlation lamp is bloomed but readable. Edge fog along the correlation lamp edge is continuous, but on the edge opposite the correlation lamp it is intermittent. There is a small curved scratch inside the format of frame 371. The last 7 inches of film are fogged due to film exhaustion.

8. Index Camera Unit No D70, Reseau No 88 (Mission 1025-2)

The index camera functioned properly, recording 438 frames. The exposure was adequate and the quality of the mission is comparable to the best obtained in previous missions. The first frame of this mission shows the curvature of the earth due to the attitude of the vehicle during the recovery process of 1025-1. There is no imagery on frames 2-6 and the imagery is very faint on frames 7-8. Frame 9 is adequately exposed. The correlation lamps are bloomed but still readable throughout the mission. Edge fog is present intermittently on both edges of the film. Creases in the film indented from the base side were first noted on frame 99 and continued intermittently through frame 272. A good example of this crease may be found running diagonally across frames 119-122 and 139-142. A foreign object that is probably dirt on the reseau plate is located in the upper left hand corner of the format in frames 101-115. Frames 428-438 contain fog, abrasion marks, and slight static discharges due to film exhaustion.

9. Associated Equipment

This equipment records part of the information required for correlation and mensuration of the panoramic cameras.

a. There is a double end of pass marker at the end of most camera operations. They are heavily over-exposed.

b. The camera number is slightly flared.

c. The binary index lamp adjacent to the camera number is bloomed in every frame.

The following is a report on the binary read-out from the duplicate positive.

Mission 1025-1

Slave (Fwd-Looking) Camera

The only problems encountered in reading the fwd binary blocks were the missing binary numbers listed below.

Pass 10D - Frame 10 had no binary number.

Pass 13D - Frame 41 had no binary number.

Pass 70D - Frame 15 had no binary number.

Master (Aft-Looking) Camera

No index lights were missing on the aft material. In various areas the alignment was slightly off and the binary lights were faint. Light No 27 was on for approximately 2/3 of the mission, but was too faint to read. This problem was attributed to the camera and not to the reproduction of the film. This difficulty was corrected by "gang-punching" out the light on all passes where it occurred. Listed below are the frames which had binary numbers missing.

Pass 11D - Frame 38 had no binary number.

Pass 14D - Frame 42 had a partial binary number.

Pass 55D - Frame 110 had no binary number.

Mission 1025-2

Slave (Fwd-Looking) Camera

Fwd binary blocks were fairly good and few problems were encountered. However, the automatic reader had difficulty reading the number 16, 22, and 24 lights on the film. This problem is probably attributed to the photocells for these lights in the reader and not to camera equipment. Listed below are the frames which had binary number problems.

Pass 37D - Frame 35 had no binary number.

Pass 52D - Frame 14 had additional binary lights on that should not have been on.

Pass 61D - Frame 73 had no binary number.

Master (Aft-Looking) Camera

Aft binary blocks were fairly good throughout the mission. However, the number 27 light was still too faint to read. This problem was corrected by "gang-punching" out the light on frames where it appeared. This malfunction was attributed to the camera and was not due to the auto-

matic reader. Listed below are the frames which had binary lights missing.

Pass 87D - Frame 65 had no binary lights.

Pass 106D - Frame 9 had no binary lights.

Pass 106D - Frame 37 had no binary lights.

Pass 136D - Frame 1 had no binary lights.

Pass 149D - Frame 89 had no binary lights.

FIGURE 1. DESCRIPTION OF PHOTOGRAPHIC DATA

The data pertaining to photographs contained in this publication are defined as follows:

PASS: A pass is the operational portion of an orbital revolution. A suffix D indicates that the photography was acquired during the descending portion; a suffix A indicates that the photography was acquired during the ascending portion; and a suffix M indicates that the photography was acquired during a pass that includes both ascending and descending portions. An additional suffix E indicates that the pass was an engineering operation or that a portion of the pass has been edited.

DATE OF PHOTOGRAPHY: The date of photography indicates the day, month, and year (GMT) that the photography was acquired.

UNIVERSAL GRID COORDINATES: These coordinates are included to locate the illustrated photography within the panoramic format.

ENLARGEMENT FACTOR: The enlargement factor is included to indicate the number of diameters the original material has been enlarged in the photographic illustration.

GEOGRAPHIC COORDINATES: These coordinates are included to indicate the latitude and longitude of the panoramic format.

ALTITUDE: This measurement is the vertical distance from the vehicle to the Hough Ellipsoid at the time of the acquisition of the photography.

PITCH: Rotation of the camera about its transverse axis. Using appropriate aeronautical terminology, positive readings indicate nose-up attitude and negative readings indicate nose-down attitude.

ROLL: Rotation of the camera about its longitudinal axis. Using appropriate aeronautical terminology, positive readings indicate left wing-up attitude and negative readings indicate right wing-up attitude.

YAW: Rotation of the camera about its vertical axis. Positive readings indicate counterclockwise rotation when viewing the ground nadir from the vehicle mounted camera in-flight.

LOCAL SUN TIME: This time is included to present to the viewer a realistic time of acquisition of the photography illustrated.

SOLAR ELEVATION: The solar elevation is the angular elevation of the sun above a plane tangent to the surface of the earth at the center of the panoramic format. A negative solar elevation indicates that the sun is below the plane.

SOLAR AZIMUTH: The solar azimuth is the angular measurement of the rays of the sun measured from true north in a clockwise direction.

EXPOSURE: The exposure is the duration of the photographic exposure expressed in a fraction of a second and is computed from the scan rate and slit width.

VEHICLE AZIMUTH: The clockwise measurement from true north to the longitudinal axis of the vehicle heading.

FIGURE 2. PHOTOGRAPH OF THE DOUBLE IMAGE OCCURRING INSIDE THE STARBOARD HORIZON OF THE SLAVE CAMERA

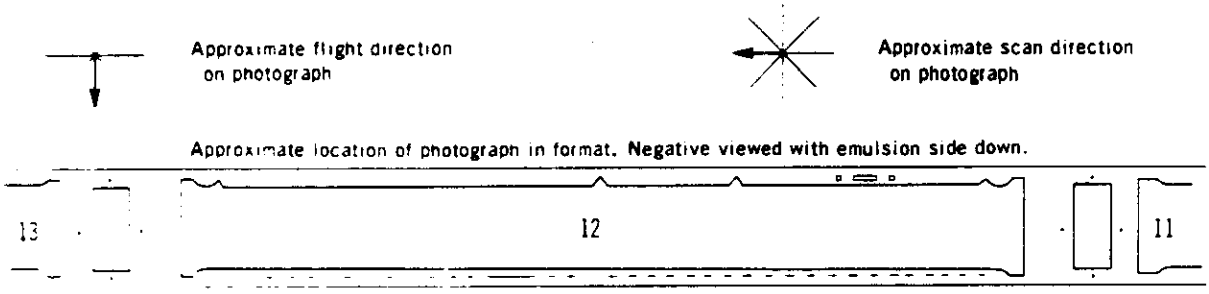
At pass [illegible] frame [illegible] the horizon camera pressure plate malfunctioned, allowing the film to slip during exposure. This caused the imagery to be smeared and double imaged throughout the rest of the mission.

Observe the vignetting in the corners of the format. Also note the bloomed fiducials near the supply end of the frame.

NPIC K-5929 (1/66)

[redacted]

Camera	12
Pass	11D
Frame	12 Fwd
Date of Photography	6 Oct 65
Universal Grid Coordinates	Not Applicable
Enlargement Factor	3X
Geographic Coordinates	22-35N 06-35W
Altitude (feet)	678,204
Camera:	
Pitch	Not Determined
Roll	Not Determined
Yaw	Not Determined
Local Sun Time	1005
Solar Elevation	50°12'
Solar Azimuth	130°
Exposure (fractions of second)	1/336
Processing Level	Primary
Vehicle Azimuth	166°54'



PART II. FILM

This section provides an evaluation of the processing, density, special printing, and physical condition of the original negatives from Mission 1025.

1. Film Processing

Infrared densitometry was used to determine the optimum level of development from the various parts of the panoramic photography. Fifty processing changes were required on the master record and 54 on the slave record of Mission 1025-1. Forty-six processing changes were required on the master record and 41 on the slave record of Mission 1025-2. The percentage of film processed at each level was:

Development Level	Mission 1025-1		Mission 1025-2	
	Master	Slave	Master	Slave
Primary	8%	10%	3%	3%
Intermediate	49%	41%	45%	42%
Full	43%	49%	52%	55%

2. Special Printing

Twelve parts of the master and 17 parts of the slave material required special printing on Mission 1025-1. Three parts of the master and 2 parts of the slave material required special printing on Mission 1025-2. Special printing is required when the range of the negative is such that 2 levels of printing duplicate positives are required for greater intelligence value to be gained from the original negative.

3. Physical Film Degradations

The photographic record is relatively free of physical film degradations. Possibly the reason for the cleanliness is due to the cartographic aspects of the mission. This reduces the amount of handling which the original negative usually receives. The minor degradations consist of intermittent pinholes, slight abrasions, and scratches. Static discharges are present on a few passes on both edges, but are more pronounced on the frequency-mark edge. The discharges extend into the format up to an inch on a number of instances. The most severe degradation was a tear on frames 11 and 12, pass 90D, of the fwd camera. This evidently occurred after the film left the processing site.

FIGURE 3. PHOTOGRAPH DEGRADED BY AN EMULSION DEFECT

The following photograph represents a degraded target caused by an emulsion defect in the film. The defect is due to the film being buckled, which caused the emulsion to crack. The plus and minus density areas over the target are due to chemical contamination.

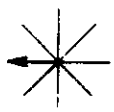
NPIC K-5930 (1/66)

[redacted]

[redacted]

Camera	142
Pass	134D
Frame	23 aft
Date of Photography	14 Oct 65
Universal Grid Coordinates	19.6 - 11.0
Enlargement Factor	10X
Geographic Coordinates	48-59N 79-45E
Altitude (feet)	687,485
Camera:	
Pitch	Not Determined
Roll	Not Determined
Yaw	Not Determined
Local Sun Time	740
Solar Elevation	9°47'
Solar Azimuth	114°
Exposure (fractions of second)	1/344
Processing Level	Full
Vehicle Azimuth	159°20'

Approximate flight direction on photograph



Approximate scan direction on photograph

Approximate location of photograph in format. Negative viewed with emulsion side down.

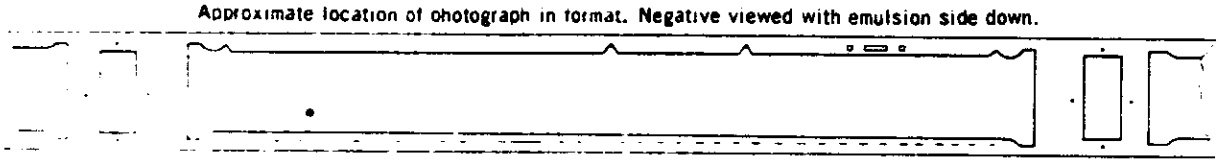


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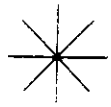
FIGURE 4. PHOTOGRAPH DEGRADED BY A SEVERE TEAR

The tear occurred after the film left the processing site. This illustrates that more precautions should be taken when handling the original negative.

NPIC K-5931 (1/66)

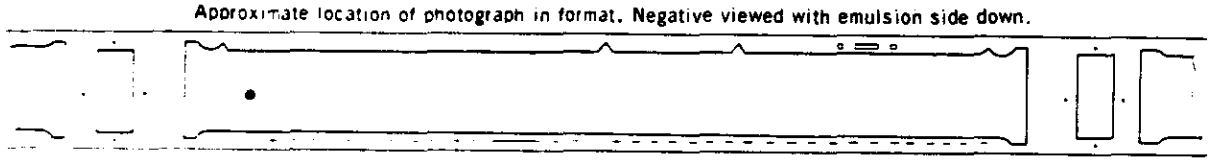
Camera	127
Pass	90D
Frame	11 fwd
Date of Photography	11 Oct 65
Universal Grid Coordinates	11.5 - 12.0
Enlargement Factor	2X
Geographic Coordinates	20-09S 14-14E
Altitude (feet)	809,480
Camera:	
Pitch	Not Determined
Roll	Not Determined
Yaw	Not Determined
Local Sun Time	949
Solar Elevation	55°59'
Solar Azimuth	107°
Exposure (fractions of second)	2.044
Processing Level	Intermediate
Vehicle Azimuth	167°24'

Approximate flight direction on photograph



Approximate scan direction on photograph

Approximate location of photograph in format. Negative viewed with emulsion side down.



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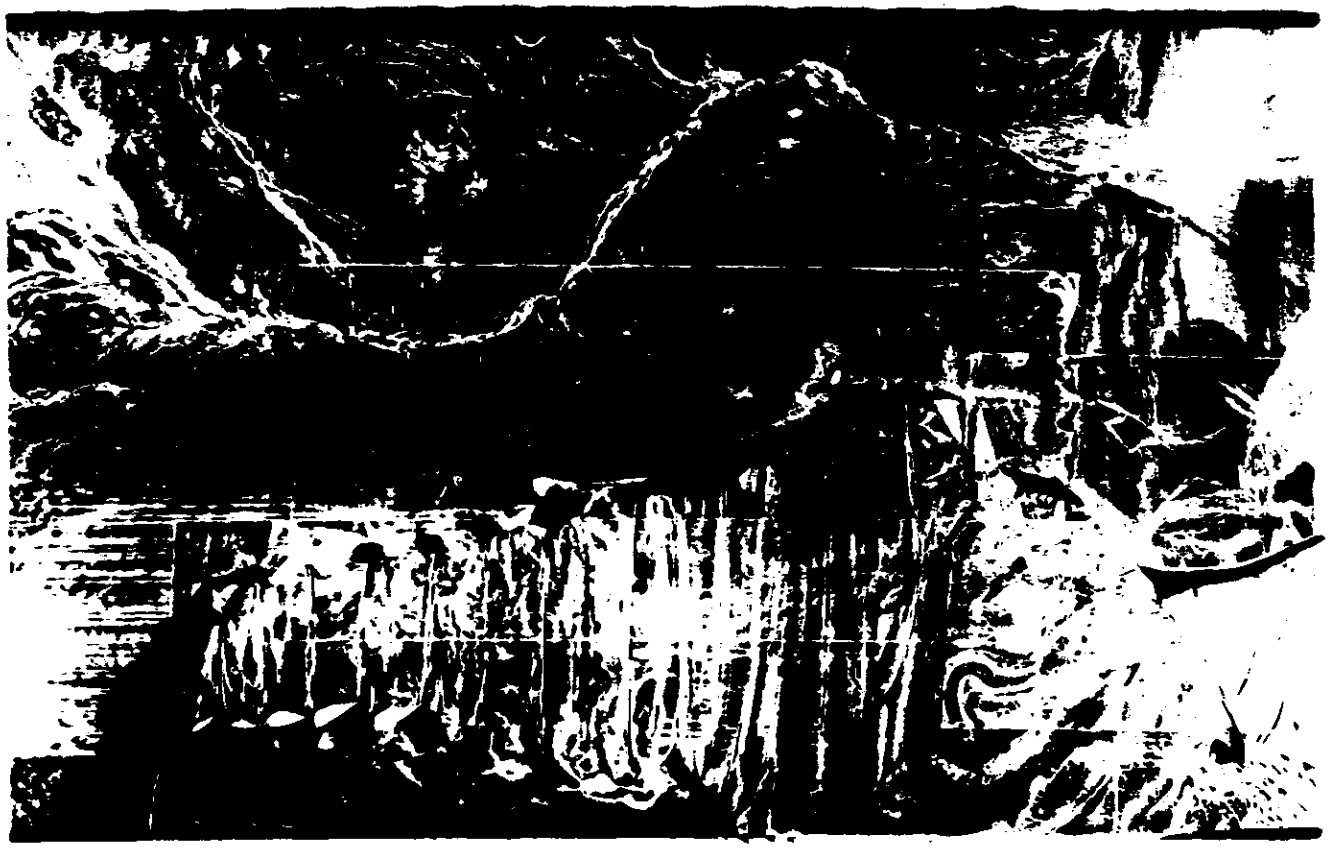

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PART III. IMAGE QUALITY

1. Definition of Photographic Interpretation (PI) Suitability

The PI suitability is an assessment of the information content of photographic reconnaissance material and its interpretability. A number of interrelated factors are involved, such as the quality of the photography, the extent of target coverage, scale, and weather limitations. However, the fundamental criteria for assigning a PI suitability rating may be reduced to (a) the scope of the photographic coverage and (b) the degree to which a photographic interpreter may extract useful and reliable information from the material.

PI suitability ratings are categorized as Excellent, Good, Fair, Poor, and Unusable. These ratings refer to the overall interpretive value of the photography obtained from a particular reconnaissance mission. Individual targets may also be assigned PI suitability ratings. The standards that determine assignment of the various ratings are:

Excellent: The photography is free of degradations by camera malfunctions or processing faults and the weather conditions are favorable throughout. The imagery contains sharp, well-defined edges and corners with no unusual distortions. Contrast is optimum and shadow details, as well as details in the highlight areas, are readily detectable. Observation of small objects and a high order of mensuration are made possible by the consistently superior quality of the photography.

Good: The photography is relatively free of degradation or limiting atmospheric conditions. Edges and corners are well-defined. No unusual distortions are present. Detection and accurate mensuration of small objects are feasible, but to a lesser degree than in material rated as Excellent.

Fair: Degradation is present and the acuity of the photography is less than optimum. Edges and corners are not crisply defined and there is loss of detail in shadow or highlight areas. Detection and identification of small objects are possible but accuracy of mensuration is limited by the fall-off in image quality and less-than-optimum contrast prevails.

Poor: Camera-induced degradations or weather limitations severely reduce the effectiveness of the photography. Edges and corners are not well defined. Only gross terrain features and culture may be detected or identified and distortion of form may exist. Accurate mensuration of even large objects is doubtful.

Unusable: Degradation of photography completely precludes detection, identification, and mensuration of cultural details.

2. PI Suitability, Mission 1025

The PI suitability of missions 1025-1 and 1025-2 is good. In the preliminary readout, 61 targets were observed in 1025-1 and 89 in 1025-2. The few targets are attributed to the fact that 1025 is primarily a mapping and charting mission. In regard to the quality of the mission it is concurred that 1025 is equal to or better than most previous missions. However, some targets were given a poor rating. The majority of the poor ratings resulted from obliquity, atmospheric conditions, or low solar elevations. Following is a list of the highlights of Mission 1025.

a. A new interferometer site has been identified.
b. A nuclear facility under construction has been observed.
c. A rail spur is newly identified.
d. A single silo under construction has been identified at a launch complex.
e. A launch area was confirmed to be complete.
f. Two newly identified bunkers appear to be completed and earth covered.

3. Mission Information Potential (MIP)

The MIP is an arbitrary number not limited by terminal values which is subjectively assigned to the panoramic photography of a mission and which compares it to the other missions. It is meant to be a measure of the camera's maximum capability for recording information, discounting adverse atmospheric conditions, minimum solar elevations, camera malfunctions, or other factors which reduce the quality of the photography.

The MIP is based on the best photography found in a mission, even though the photography may be limited to a few frames. Since these frames are considered to be the best in the mission, they do not indicate the overall success, average quality, or general interpretability of the photography.

Criteria for selection of the MIP frame:

a. Eliminate all portions of the mission affected by system malfunctions.
b. Select frames which are free of clouds or atmospheric attenuation.
c. Eliminate the first 10 frames and last frame of a pass because these may be affected by incorrect scan speed.
d. Select frames that are in a continuous strip of approximately 10 cloud-free frames, since cloud shadows from weather fronts are cast for great distances.

e. Determine from the horizon cameras that the panoramic photography is not affected by apparent vehicle perturbations.
f. Select targets that are near the center of the format and on frames as close as possible to perigee for scale purposes and to eliminate obliquity.
g. Select frames having near optimum solar elevation.
h. Select a high contrast target (preferably an airfield) and compare the target to a previous mission which has been given an MIP rating.

4. MIP Rating for Mission 1025

Pass 63D, frame 16 aft has been selected as the MIP frame for Mission 1025-1. It was assigned an MIP rating of 85. The information potential of the area acquired by the fwd camera (Pass 63D, frame 10 fwd) is almost identical to this MIP frame. Pass 95D, frame 15 aft, has been selected as the MIP frame for Mission 1025-2. It also was assigned a rating of 85. The corresponding frame of the fwd camera is pass 95D, frame 9. Its quality is comparable to that of the aft material.

5. Analysis of Resolution Targets

A total of 9 resolution targets were recorded on the material obtained from missions 1025-1 and 1025-2. The best ground resolution obtained from a high contrast CORN target display was 7 feet in the flight direction as read from the original negative and the second generation dupe positive. The targets were read and analyzed by 3 qualified technicians.

Following is an analysis of the targets which were resolved. Pitch, roll, and yaw are not available at this time.

ANALYSIS OF RESOLUTION TARGETS

Target Description	Medium Contrast Portable	Medium Contrast Portable	High Contrast Fixed	High Contrast Fixed	High Contrast Fixed	High Contrast Fixed	High Contrast Fixed	High Contrast Fixed	High Contrast Fixed
Camera	127	142	127	142	127	142	127	142	127
Lens	31D	31D	63D	63D	63D	63D	63D	63D	95D
Frame	5 fwd	11 aft	7 fwd	13 aft	8 fwd	14 aft	10 fwd	16 aft	13 fwd
Date of Photography	7 Oct 65	7 Oct 65	9 Oct 65	9 Oct 65	9 Oct 65	9 Oct 65	9 Oct 65	9 Oct 65	11 Oct 65
Universal Grid Coordinates	43.4-10.0	47.7-13.4	59.5-10.8	30.6-13.2	58.6-12.0	31.4-12.1	61.9-13.2	28.3-11.1	53.3-9.5
Geographic Coordinates	39-49N 104-48W	39-49N 104-48W	33-09N 106-52W	33-09N 106-52W	32-59N 106-48W	32-59N 106-48W	32-39N 106-42W	32-39N 106-42W	31-37N 110-36W
Altitude (Ft)	682,779	682,010	679,844	679,909	679,850	679,927	679,868	679,969	685,398
Clouds:									
Type	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cover	ND	ND	ND	ND	ND	ND	ND	ND	ND
Top	ND	ND	ND	ND	ND	ND	ND	ND	ND
Local Sun Time	923	923	908	908	908	908	907	907	845
Sun Elevation	31°42'	31°44'	33°09'	33°10'	33°18'	33°19'	33°35'	33°35'	29°28'
Sun Azimuth	131°	131°	126°	126°	125°	125°	124°	124°	121°
Exposure (Fractions of sec)	1/329	1/339	1/336	1/341	1/336	1/342	1/336	1/343	1/337
Processing Level	Full	Full	Inter	Full	Inter	Full	Inter	Full	Full
Target Azimuth	162°51'	163°11'	164°49'	165°03'	164°52'	165°06'	164°56'	165°10'	165°11'
Resolution in Original Negs.									
Flight Direction	12 ft	12 ft	11 ft 2 in	10 ft 1 in	7 ft	10 ft 1 in	15 ft	15 ft	15 ft 8 in
Scan Direction	16 ft	12 ft	*	8 ft	*	8 ft 1 in	15 ft	15 ft	15 ft 8 in

* - Unresolved
ND - Not Determined

FIGURE 5. MIP SELECTION 1025-1

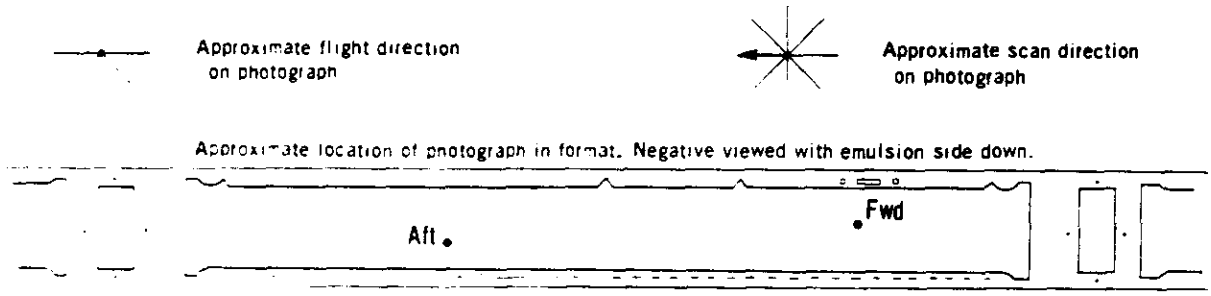
FIGURE 6. FWD PHOTOGRAPH COMPARED WITH THE MIP AREA, MISSION 1025-1

The following photographs show the difference between the MIP frame (aft photograph) and the corresponding fwd coverage. Note the difference in contrast and density, which is due to the solar azimuth. Also note the scratch in the center of the MIP frame. This frame was probably scratched during viewing of the particular area.

NPIC K-5932 (1/66) NPIC K-5933 (1/66)

[redacted]

	FIGURE 5	FIGURE 6
Camera	142	127
Pass	63D	63D
Frame	16 aft	10 fwd
Date of Photography	9 Oct 65	9 Oct 65
Universal Grid Coordinates	28.0 - 11.0	63.3 - 13.3
Enlargement Factor	20X	20X
Geographic Coordinates	32-39N 106-46W	32-39N 106-42W
Altitude (feet)	679,969	679,868
Camera:		
Pitch	Not Determined	Not Determined
Roll	Not Determined	Not Determined
Yaw	Not Determined	Not Determined
Local Sun Time	909	909
Solar Elevation	33°35'	33°35'
Solar Azimuth	125°	140°
Exposure (fractions of second)	1/342	1/336
Processing Level	Full	Intermediate
Vehicle Azimuth	165°10'	164°56'



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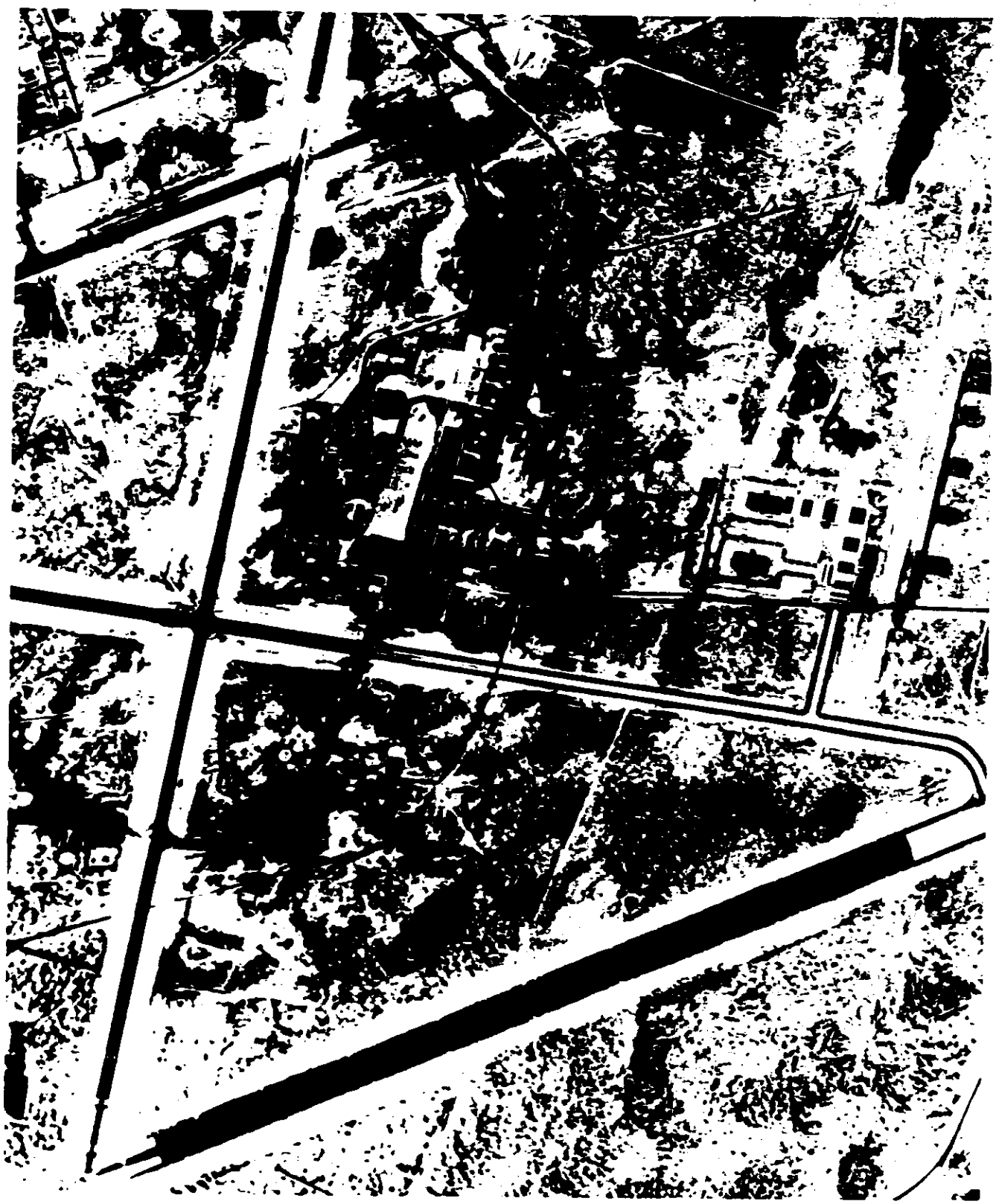

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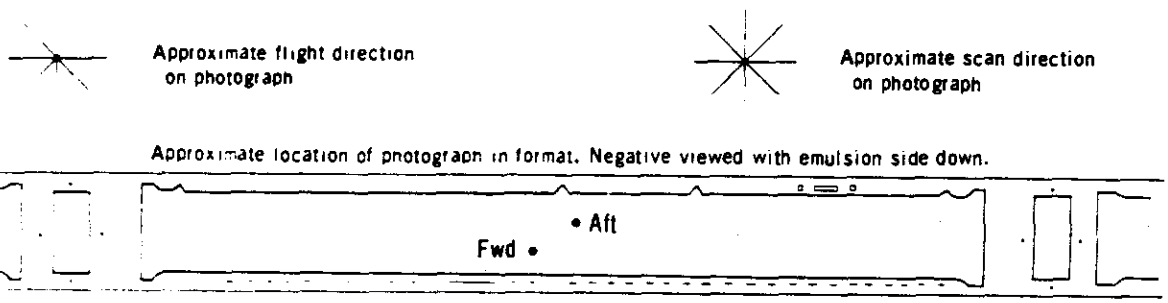
FIGURE 7. MIP SELECTION, 1025-2

FIGURE 8. FWD PHOTOGRAPH COMPARED WITH THE MIP AREA, MISSION 1025-2

The following 2 photographs are a comparison of the aft (MIP area) and the fwd material. The difference between these 2 photographs is very subtle; however, the aft material appears to be slightly better in quality.

NPIC K-5934 (1/66) NPIC K-5935 (1/66)

	FIGURE 7	FIGURE 8
Camera	142	127
Pass	95D	95D
Frame	15 aft	9 fwd
Date of Photography	11 Oct 65	11 Oct 65
Universal Grid Coordinates	46.8 - 14.1	43.2 - 10.5
Enlargement Factor	20X	20X
Geographic Coordinates	32-17N 110-52W	32-17N 110-48W
Altitude (feet)	685,545	685,093
Camera:		
Pitch	Not Determined	Not Determined
Roll	Not Determined	Not Determined
Yaw	Not Determined	Not Determined
Local Sun Time	844	844
Solar Elevation	28°57'	28°57'
Solar Azimuth	121°	121°
Exposure (fractions of second)	1/342	1/336
Processing Level	Full	Full
Vehicle Azimuth	165°15'	165°02'



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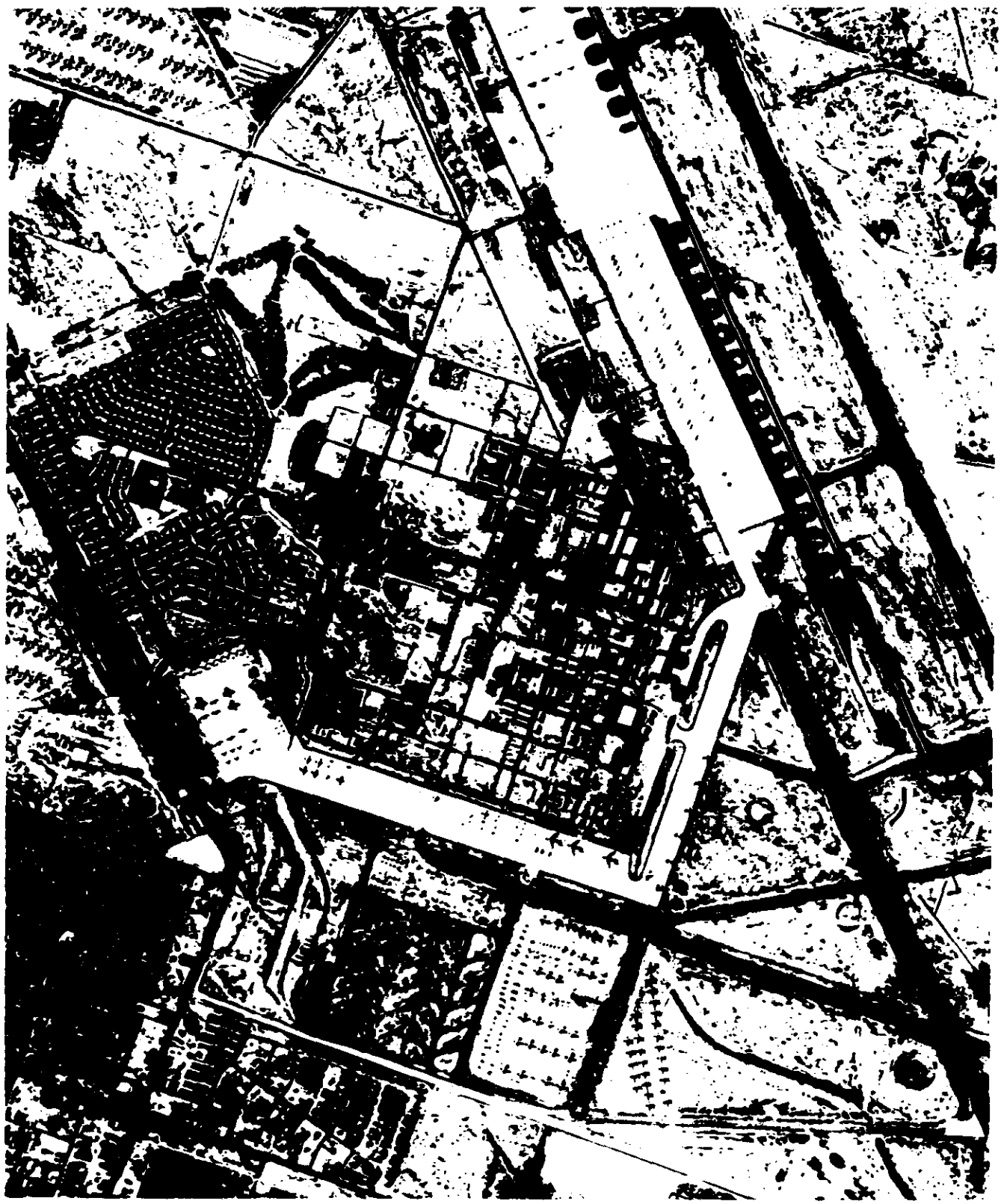

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