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~~TOP SECRET~~ GAMBIT

BYE 24555-64

SPB 4 025

March '64

TOTAL PAGES ~~274~~ 274

CY 1 of 10 CYS

SYSTEM
PERFORMANCE EVALUATION TEAM
(FLIGHT MISSION CHARACTERISTICS)
MISSION 4006/64

Handle Via BYEMAN Controls Only

~~TOP SECRET~~ GAMBIT

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4006/64

FOREWORD

THIS REPORT PREPARED FOR AND BY DIRECTION OF

THE DIRECTOR OF SPECIAL PROJECTS

OFFICE OF

THE SECRETARY OF THE AIR FORCE

Preparing Unit

Performance Evaluation Team
Af Unit Post Office
Los Angeles 45, California

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PUBLICATION REVIEW

This report has been reviewed and is approved.

Victor M. Genez

VICTOR M GENEZ
Colonel, USAF
Team Manager

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SECTION I

RESUME OF MISSION 4006

Mission 4006 was launched into orbit from Point Arguello Launch Complex II, Pad 3, at 2014:23Z on 11 March 1964.

The satellite vehicle consisted of the Gamit Camera and the Orbital Control Vehicle System. The satellite was boosted into orbit by an Agena D/Atlas combination with the following sequence of launch events:

	Nominal (sec)	Actual (sec)
Booster Engine Cut-off	138.17	137.88
Sustainer Engine Cut-off	271.65	270.00
Vernier Engine Cut-off	288.86	286.48
Atlas/Agena Separation	291.44	289.36
Agena Ignition	360.20	361.17
Agena Engine Cut-off	604.89	600.07

The satellite vehicle (OCV) achieved an orbit with the following parameters:

	Nominal	Actual
Inclination (degrees)	95.8	95.0
Period (minutes)	88.42	[redacted]
Apogee (nautical miles)	122.31	[redacted]
Perigee (nautical miles)	94.16	[redacted]
Eccentricity	.00397	[redacted]

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At lift-off, 1,612 feet of Eastman Type 4404 film was in the supply spool. This amount was sufficient for full operational, R&D, and run-out for three days' operation.

The operational objectives for Mission 4006 were to conduct a reconnaissance mission to obtain high resolution photography of selected targets and subsequent to the operational phase of the mission to continue to demonstrate attitude control and full system capability over a five day lifetime.

All mission objectives were satisfactorally achieved. The capsule was recovered by the primary system on Rev. D51 with the capsule aboard the recovery aircraft at 2352Z, 14 March 1964.

Operational and R&D photography was achieved by means of nine command messages which were generated and transmitted to the vehicle. Operational target selection was accomplished by the (S) NRO Staff who based their selections on computer runs made by the Mission Profile Generation procedure. The MPG procedure used as its input a pre-prepared target distribution and the orbit determination that existed at the time of the computer run.

This was the first successful mission using the full pointing capability of the Gambit system; however, some targets were lost because of unrefined operational procedures. The greatest difficulty was encountered by interrupting an

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automatic mode of target selection and command generation to permit manual inputs from (S) NRO. The resultant combination of automatic sequences and manual additions were then input into a mode of command generation that did not have the capability of conflict resolution. In future missions it is recommended that the (S) NRO selections be incorporated into the target distribution during operations and selection and command generation be completely automatic from that point. Other targets were lost because of a poor tracking data fit and subsequent errors in command generation prediction.

The command photographic take consisted of 117 stereo pairs, four stereo triplets, and 188 strips which included three lateral triplets. This total constitutes 430 photographic frames of which 239 contained recognizable imagery. Clouds obscured 33% of the frames exposed and 10% of the frames were exposed over water.

In general, the quality of the photography was excellent, as can be observed from the quality of the photographs included in this report.

Although unexpected errors in the calculation of the Mission Correlation Data complicated the map-match of predicted and actual results, it was concluded that the overall system performed as intended and within design specifications.

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The camera performed as programmed; however, film velocity variations caused banding on the film. The smaller yaw slit on the title side was obscured. Only one major negative density streak appeared on the film. There were several over-exposed frames because of snow cover, but generally exposure was satisfactory.

One of seven Control Range Network (CORN) targets was photographed and evaluation is being undertaken. The Blackbird (RB-57) coverage was not suitable for comparison to GAMBIT data because of insufficient resolution of the short focal length camera utilized. Sun Line and Illumination experiments were unsuccessful because of cloud cover.

Computations of pitch, roll and yaw errors using the Pointing Error Program indicate that, for the stereo pairs considered, the vehicle attitude control was operating well within tolerances. Preliminary examination of telemetry records further indicates there were not malfunctions in the attitude control throughout the mission.

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SECTION II

FLIGHT PROGRAM

A. Performance of the Command System

1. Input.

The command system for the Gambit vehicle is designed to operate with one of two types of inputs: (1) a manual selection directly into the GE command modules; and (2) an automatic selection from a given target distribution made by STL's Mission Profile Generation (MPG) procedure. With the manual load, GE calculates the vehicle and payload parameters; with the automatic load, GE accepts MPG calculated parameters. The commands for Mission 4006 were generated using MPG procedures to perform target selections which were subsequently modified by the (S) NRO Staff. Final selections were input to GE manually. While this technique afforded a desired degree of flexibility, several disadvantages soon became apparent when GE calculated parameters were used for STL selections.

With manual inputs, it is assumed that human judgment has been used to perform a rough conflict resolution so as to insure adequate time for the completion of one command before the initiation of the next. In the automatic mode, every second of time is mechanically accounted for to insure a highly efficient camera operation. Because of differences in

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the basic manner of calculating commands, the GE modules frequently increased the burst times of MPG generated selections which often resulted in "INSUFFICIENT TIME TO ROLL" error notes.

It is apparent that the best solution to this problem would be to modify STL's procedures to accept manual inputs, which would then be conflicted with other targets; then, the resultant command load would not violate accepted procedures of vehicle operation. Such a mode is expected to be in operation for Mission 4007.

2. Roll Settling Time.

Examination of the Command Summary showed that about 40 error notes indicated payload operations were being conducted while the vehicle was settling in roll. GE has conservatively defined the vehicle as being "settled" when roll rates have decreased to .015 degrees per second. It will be important to determine, by observation of the photography, when the vehicle had, for practical purposes, "settled". The following tabulation shows a rough comparison of times of flagged overlap cases between camera operation and roll settling, and the actual time of overlap, as well as could be determined from rough film measurements. Lack of double yaw slit data precluded accurate measurements; however, visible "Y-axis" displacement on the single double yaw image available was assumed to be caused by roll rate.

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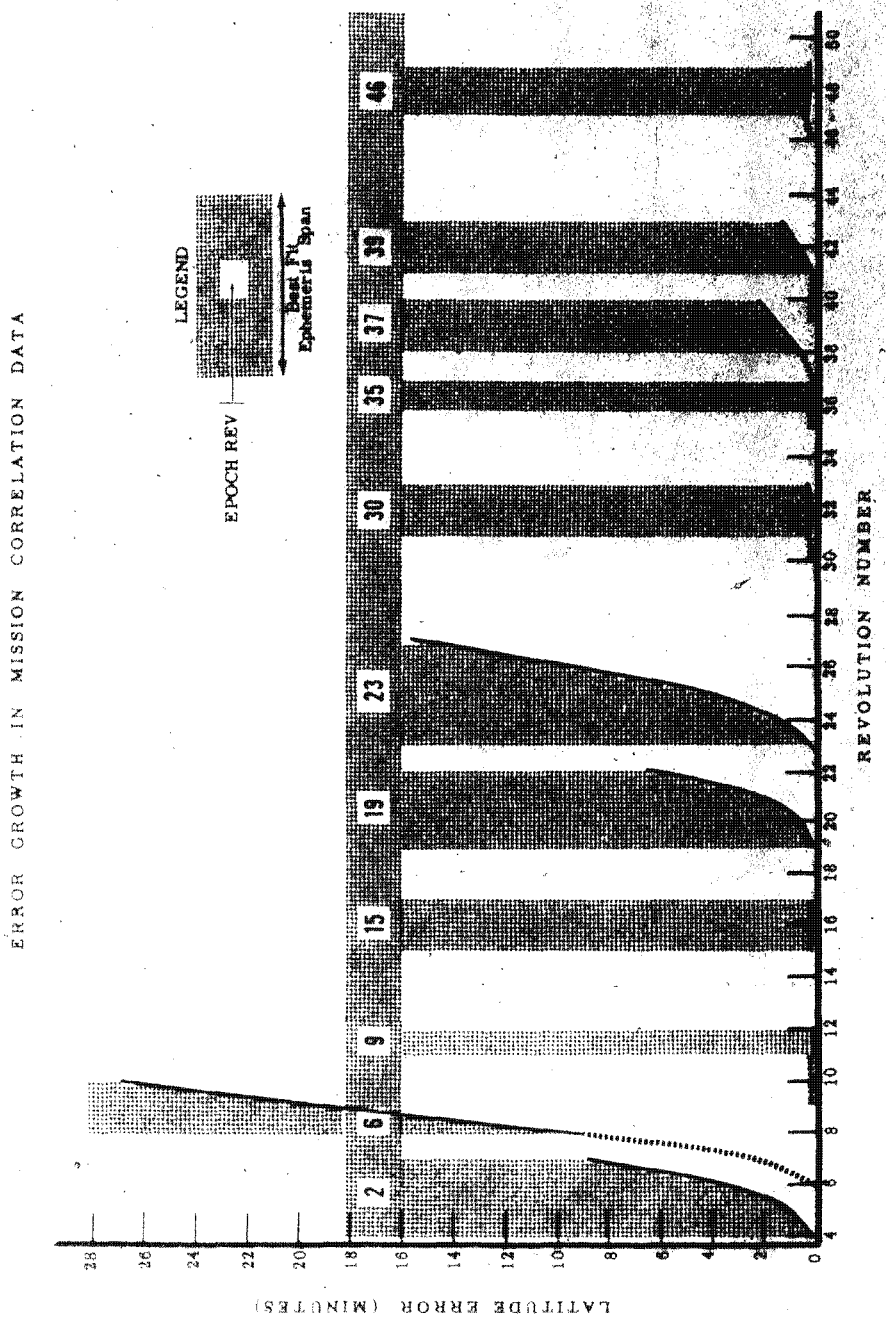

ILLUSTRATION 1

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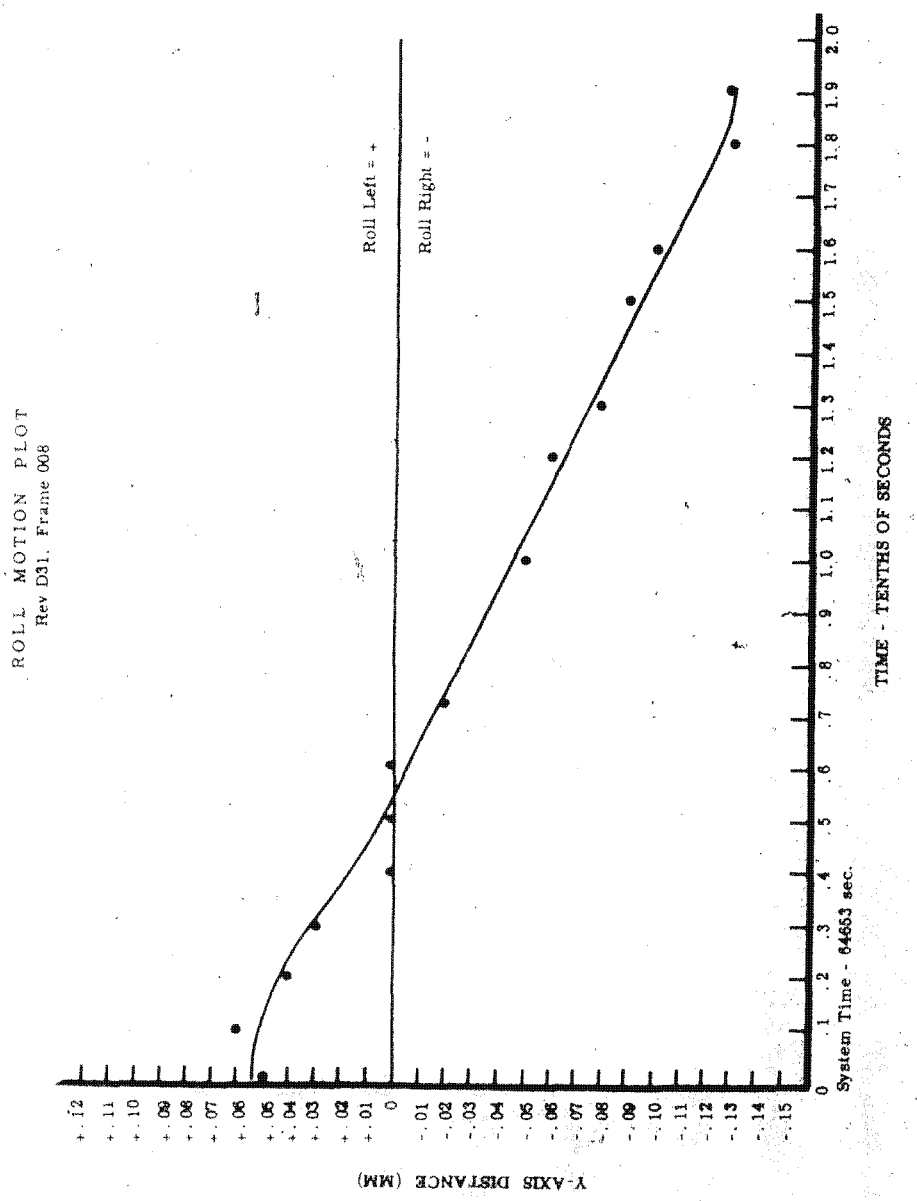

ILLUSTRATION 2

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MEASURED vs. CALCULATED OVERLAPS

ON SELECTED FLAGGED FRAMES

Rev	T_1/T_3 Camera Start System Time	Frame No.	GE Measured Overlap Roll Rate to 0.015°/sec (sec)	PET Measured Overlap (Y-axis Motion)	Remarks
D05	12763.9	003	7.3	1.5 sec	
D05	13128.9	008	6.6	2.7 sec	
D06	18033.3	003	2.4	Cloudy	
D06	18317.7	008	6.5	6.4 sec	
D06	18609.1	016	7.4	Cloudy	
D08	28955.5	010	3.2	3.2 sec	
D09	34174.1	009	2.0	2.0 sec	
D09	34363.2	016	4.2	Cloudy	
D10	39263.5	004	2.3	Water & Clouds	
D10	39528.5	013	1.93	1.5 sec +	Cloud Deck Begins at 1.5 sec
D10	39544.2	014	3.1	Cloudy	
D15	66154.6	005	0.6	Not Discern.	
D15	66161.0	006	0.2	Not Discern.	
D15	66227.0	010	4.13	3.2 sec +	
D20	06058.4	006	4.8	Cloudy	
D20	06103.1	008	2.9	1.6 sec +	
D22	16937.4	012	4.63	Cloudy	

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MEASURED vs. CALCULATED OVERLAPS (continued):

Rev	T_1/T_3 Camera Start System Time	Frame No.	GE Measured Overlap Roll Rate to 0.015°/sec (sec)	PET Measured Overlap (Y-axis Motion)	Remarks
D22	17217.0	020	4.03	5 + sec	Entire Frame
D23	21722.7	003	4.5	4.8 sec	
D23	22338.9	013	4.2	3.4 sec +	Clouds Prevalent
D23	22345.2	014	7.4	2.7 sec	
D23	22366.7	015	9.9	4.5 sec	
D24	27512.1	016	7.9	Less than 1.9 sec	Clouds
D25	32661.5	012	3.5	Cloudy	
D26	37783.6	006	1.26	Not Discern.	
D26	37894.7	011	4.2	Not Discern.	
D26	37967.7	015	1.4	Cloudy	
D26	38015.4	018	5.1	Cloudy	
D26	38041.8	020	5.96	Cloudy	
D31	64527.0	005	3.1	2.4 sec	Entire Frame
D31	64651.9	008	4.23	2 + sec	Entire Frame
D31	64657.7	009	4.33	2 + sec	Entire Frame
D31	64728.4	015	3.3	3 + sec	Entire Frame

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MEASURED vs. CALCULATED OVERLAPS (continued):

Rev	T_1/T_3 Camera Start System Time	Frame No.	GE Measured Overlap Roll Rate to 0.015°/sec (sec)	PET Measured Overlap (Y-axis Motion)	Remarks
D36	04221.8	003	8.7	Not Discern.	Poor Imagery
D38	15495.1	017	7.2	Cloudy	
D39	20356.7	005	0.2	2.8 sec	
D39	20528.8	008	0.4	Cloudy	
D39	20541.5	009	3.9	Cloudy	
D40	25627.2	007	2.5	Cloudy	
D40	25737.2	010	4.2	Cloudy	
D41	30875.3	007	No roll	1.6 sec	Mirror Movement
D42	36182.5	010	4.2	Cloudy	
D42	36238.9	013	7.2	Not Discern.	
D42	36305.2	016	5.5	Cloudy	
D42	36333.4	018	5.13	Cloudy	
D42	365[illegible]4	024	1.5 sec	Cloudy	
D47	62975.7	004	2.1	Cloudy	
D48	68016.1	001	3.82		
D48	68025.5	003	8.46		[illegible]
D48	68039.0	004	3.49		[illegible]
D48	68141.4	007	1.33		[illegible]

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3. Roll Rate Induced Double Yaw Slit Separations.

Evidence compiled in the Data Sheets shows that the attitude control error was good (of the order of one degree or less) at various times during the flight. Through the one set of double yaw slit images available (time track side), separations in the cross-track direction could be observed, even though attitude error is presumably not at fault. A roll rate, however, will also manifest itself as a cross-track separation of the double yaw slit images. On Rev D31, Frame 008, cross-track separations of the order of .1mm were observed. A calculation of the implied roll rate under the assumption of negligible roll error follows:

For Flight 6, the double yaw slit separation was 0.108 inches. For the frame of interest, the film velocity was 3.46 inches per second. Therefore, the image separation occurs from a drift of the image cross-track over the interval (Δt) of

$$\Delta t = \frac{.108}{3.46} \doteq .0312 \text{ seconds}$$

The focal length (L) of the camera is about 77 inches or

$$L = (77)(25.4) \doteq 1960 \text{ millimeters}$$

If the camera rolls at such a rate that 0.1 millimeter cross-track separation of the double yaw slit images

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result, then the roll rate ($\dot{\Omega}$) must be

$$\dot{\Omega} = \frac{\Delta\Omega}{\Delta t} = \frac{(0.1)}{(1960)}(57.3)\frac{1}{(.0312)} \doteq .094 \text{ deg/sec}$$

Specification limit is .015 deg/sec. Illustration 2 signifies where roll settling continued throughout the photographic frame.

4. Command Load Summary.

a. Command message 102 was loaded at Thule Tracking Station on Rev D04, with operational photography on Revs D04 through 7. The tracking rev (the last rev to which tracking data was fit) was Rev D02 and the Manual Day One Nominal Target Deck was used as input.

b. Command message 104 was loaded at Vandenberg Tracking Station on Rev D08, with operational photography on Revs D08 through 10, and experimental (R&D) photography on Revs D11 and 12. (S) NRO Staff supplied operational target inputs based on the Rev D02 MPG run. Tracking was to Rev D06.

c. Command message 106 was loaded at Thule Tracking Station on Rev D14, with operational photography on Rev D17, and R&D photography on Revs D15 and 16. Tracking was to Rev D10. When the orbit determination was completed to include Rev D10 tracking data, a new problem became apparent. The drag factor had decreased to an unexpectedly low value. Though the decrease was later confirmed to be the result of forward thrusting of the roll jets, the uncertainty of ephemeris

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predictability at the time led to the decision to change a commanded target on Rev D17 from a 6.9 second stereo to a 30 second strip.

d. Command message 107 was loaded at Kodiak Tracking Station on Rev D18, with operational photography for Revs D19 through 24. Tracking was to Rev D16. Target input was from (S) NRO Staff based on the Day Two MPG run. In the execution of this command, a random human error permitted the six minute vehicle timer to time out before camera "on" for the last stereo pair on Rev D22; consequently, that target was lost. A recurrence of this problem is not expected.

e. Command message 108 was loaded at Vandenberg Tracking Station with operational photography for Revs 24 through 27. Tracking was to Rev D22, and the input was from (S) NRO Staff based on the Day Two MPG run.

f. Command message 110 was loaded at Thule Tracking Station on Rev D30, with operational photography on Rev D33, and R&D photography on Revs D30 through 32. Tracking was to Rev D26.

g. Command message 112 was loaded at Hula Tracking Station on Rev D34, with operational photography on Revs D36 through 40. Although tracking data through Rev D32 was fitted, the fit was poor and command prediction errors resulting from such a long prediction interval caused most

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targets to be missed on Revs D38 through 40. The prediction was unusually bad because Revs D31 and 32 tracking data were noisy as a result of Thule communication problems. In future operations, the latest available tracking data should be used for a command load, and more frequent command updating should be accomplished. Target inputs were from (S) NRO Staff based on the Day Three MPG run.

h. Command message 113 was loaded at Vandenberg Tracking Station with operational photography on Revs D41 through 43. Tracking data through Rev D39 was used and target input was from (S) NRO Staff based on the Day Three MPG run.

i. Command message 114 was loaded at Thule Tracking Station on Rev D46 with R&D photography on Revs D47 through 49. Tracking data through Rev D43 was used.

5. Discussion of an "Apparent" Problem.

The same target can be seen on different center strip frames taken on different days on Rev D10, Frame 006, and Rev D26, Frame 005. This example is unique in that roll angles are opposite in sign but approximately equal in magnitude. The fact that the commanded film velocities differ by about six stops led to considerable speculation concerning the possibility of erroneous command generation. An examination of the commands

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for these frames shows the following:

	Rev D10, Frame 006	Rev D26, Frame 005
Roll Angle	+ 44.0°	- 42.5°
Crab Angle	+ 1.0°	+ 1.0°
Mirror Position	Center	Center
Film Velocity	2.3011 in/sec	2.4427 in/sec
Obliquity (Roll plus Crab)	+ 45.0°	- 41.5°

If one calculates obliquity by the erroneous procedure of algebraic subtraction of the crab angle from the roll angle, it would appear that the obliquities differ by only 3.5 degrees and the difference in film velocities would be expected from the film velocities which were correctly calculated. The difference in obliquities is further confirmed by a 10 percent difference in ground scale between the target image as seen on the two frames.

B. Geopositioning

1. General Comments.

Geopositioning consists of comparing the true location of the photographic frame with the predicted position based upon the best-fit ephemeris and camera commands. Photographic Bench Marks (PBM) were used to locate the photographs. The PBM's are identifiable cultural features such as highway and railroad intersections, bridges, etc. Where no culture was

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available, natural features such as shore line indentations, small lakes and other topographic features were used. No frame outlines were used in developing geopositioning.

Four hundred and thirty photographic frames were examined. Of these, 239 frames contained map recognizable imagery. Clouds obscured approximately 33 percent of the frames exposed; 10 percent of the frames were exposed over water; and two percent of the frames were exposed over land areas on which insufficient cultural and topographic detail is present to permit map recognition.

The photo-match phase of the evaluation was accomplished by identifying 514 map recognizable features on the 239 frames. The number of PBM's selected varied from one per frame on short bursts to five on long strips. Common points were selected where possible on stereo coverage. No points were identified on Revs D11, D12 and D47. Revs D32 and D33 had one point each, and Revs D16 and D17 had two. The maximum number of PBM's per rev was 35, occurring on Revs D5 and D10. Revs D05, D10 and D38 each had 32 PBM's.

2. Photo-Map Positioning Data.

The location of PBM's was made on Series 200 target charts (1:200,000) where available, and on ONC or WAC charts (1:1,000,000) otherwise. The accuracy of most ONC's and WAC's, as well as some Series 200 charts, is such that some measurements

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are questionable. The column entitled "Map Accuracy" and footnotes indicating uncertainty in PBM location give an indication of the reliability of the Photo-Map Positioning.

3. The "Positioning Error", which is the difference between the map-measured position and the position calculated from the Mission Correlation Data (MCD), is reported as "in-track" (N-S) and "cross-track" (E-W), and is measured from the predicted to actual position. The blank spaces on the Technical Data Sheets are the result of cloud cover, snow cover or areas lacking detail. Instances where PBM's were questioned are annotated. If a time word is unreadable or if the map detail uncertainty is large, then such annotations are made.

4. The columns entitled "Predict Error" on the Photo-Map Positioning data sheets are a measure of the desired center-of-frame coordinates and the center-of-frame as defined by MCD. The desired center-of-frame coordinates are, in some cases, the actual target coordinates; and in other cases, the targets selected by the MPG computer program. The latter are target coordinates biased in a position by a distance corresponding to one-half the camera start-up transient so that, with no prediction error, the actual target would be exactly centered in the useful part of the frame. The "Predict Error", when corrected by "MCD Error", is the error in the prediction of vehicle position during flight. In general, prediction was very

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good except on Revs D38, D39 and D40. Most of the targets on these revs were missed due to a larger than normal prediction error.

5. Where the best-fit ephemeris and maps are correct, the "Positioning Error" (adjusted by "MCD Error") is caused by vehicle attitude error. On those frames where "MCD Error" was at or near zero and where map and PBM confidence was high, computations of pitch, roll and yaw errors were made and tabulated in the Data Sheets under the column "Attitude Error". The descriptions of these computations are in Section V, Part D, "Pointing Error Program".

6. A pitch error is noted in the second aft-looking frame of stereo pairs. This was noticed also on Missions 4002 and 4003, and is apparently caused by a torque transmitted to the vehicle by the stereo mirror rotating to the aft position. A certain amount of "skewing" of the center line of the photo due to vehicle roll was noted and was apparently caused by insufficient time to roll between frames resulting in slight roll rates. The azimuth of "Photo Center Line" column shows some of these results. The round-off of the MCD to the nearest minute of latitude and longitude causes some of the variations in azimuth and position.

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C. Mission Correlation Data (MCD)

1. Mission Correlation Data (MCD) is used as the basis for the predicted location of the desired photography, and was used for the first time on this mission. This data uses a best-fit ephemeris and camera commands to provide coordinates of the center line of each frame. The MCD derived ephemeris was compared with a separate generated best-fit ephemeris (post flight) calculated by the Orbit Determination Computer Program used to support the actual operations. This comparison shows the Mission Correlation Data (MCD) to be in error on several revs. The MCD had been prepared for Mission 4005 (not used because of the lack of results to analyze), and the program which generates this data had been thoroughly checked and validated. A previously undetected error apparently exists in the integration routines of the computer program. Corrective efforts presently under way should prevent a recurrence of this difficulty.

2. The calibration of the MCD from the best-fit ephemeris is listed on the Photo-Map Positioning data sheets under the MCD error column. A graphic plot of the average error per rev is shown on the error growth in the MCD chart on the following page. This graph shows that the MCD is accurate for Revs D04, D11, D12, D15, D16, D17, D19, D23, D31, D32, D36, D37 and D41. Corrections should be made to the data presented in

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the "Positioning Error" and "Predict Error" columns for all other revs for accurate positioning.

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SECTION III

PHOTOGRAPHIC CHARACTERISTIC EVALUATION SUMMARY

(SPPL Report No. 101-1-22)

Analysis of the original negatives obtained from Reconnaissance Satellite Mission 4006 leads to the following observations:

A. A continuous minus-density line paralleling the film edge and located 3 7/8" from the time track edge was noted on all revs of the Mission except Rev D47. Associated with this were numerous smaller minus-density streaks.

B. Numerous processing comets were found on Revs D11, D09, D20, D21, D17, and D19, and a few scattered comets were noticed on several other revs.

C. Some film creasing and emulsion scratches were found on most rolls of the Mission. Severe film creasing appeared on Rev D49.

D. The titling was smeared and flaking on Rev D15 but was generally good throughout the remainder of the Mission.

E. The entire Mission was acceptably clean and free from lint and foreign particles.

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SECTION IV

CAMERA SYSTEM OPERATION

A. Film Transport

All frames programmed were obtained. Generally, the frame start up and stopping transients were shorter than normal; however, in a few cases starting transients continued 0.5 seconds beyond the specification of 1.5 seconds. NPIC plotted about 10 percent of the frame film velocities; these plots indicated that fluctuations beyond specification are generally on the negative side. Of the velocities plotted about half are within specification and the remainder are 2-4 percent out of specification during normal operation. Film velocity variations beyond specification appeared most frequently during the first frame of each rev. Research accomplished earlier by the contractor indicates that after a long non-operational period the film forms a set around the platen and rollers on which it has a bend. This set will contribute to velocity perturbations. It is their recommendation that the usual inter-revolution wrap-up be performed just prior to the first operation of each rev, instead of immediately following the final camera operation as heretofore.

B. Slit Quality

This slit was the cleanest of any mission. Only one

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major minus density streak was seen, and a few very light minus density marks.

C. Time Track

This time track was the same configuration as the previous mission. The 500 cycle track had excellent density and square corners on the bits. Primary processing did not degrade the time track, which was visible in the second generation dupe.

D. Double Yaw Slits

The smaller yaw slit on the title edge was obscured by a black felt material which was installed in the camera as a light shield. Yaw slit images were not obtained on that edge, thereby hampering attitude analysis, particularly where smear was suspected.

E. Footage Utilized

The operational footage, including wrap-up sections, amounted to 1,256 feet. The orbital R&D take amounted to 231 feet. Ground testing and payload health orbital test consumed 496 feet. The final wrap-up used 81 feet. Due to the exuberant expenditure of film in strip mode operations on days one and two, the wrap-up lengths were shortened from 40 seconds to 10 seconds at the end of a pass, and 3.1 seconds during a pass, beginning with Rev D19. The effect on the

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processing is unknown since the Processing Summary was not available at this date (24 March 1964).

F. Processing

On special request the processor forwarded draft copies of the process control curves and history of processing levels used versus frame numbers. About 90 percent of the footage was processed at the Intermediate and Primary levels, and about 10 percent was processed at Full, with the majority of this being the Illumination and Sun Line experiments which begin at 0° Sun Angle. A proper analysis of the degree of processing utilized will take more time than is available for this report.

G. Exposure

Preliminary estimates based on density readings indicate that this mission could have been flown with the narrowest slit (#1, .0083"), if the influence of fresh snow cover had been taken into account. Some of the passes were begun with Primary processing and then changed to Intermediate processing when the snow cover diminished, even though much higher Sun Angles were then encountered. The influence of these results on the slit selection for the next Mission (4007/64) requires careful analysis. The next mission scheduled for launching in April 1964, will use a

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diminished snow cover, but approximately 12° higher Sun Angles. Further, Mission 4007 will be flown at an average 25% higher film velocity which results in less exposure.

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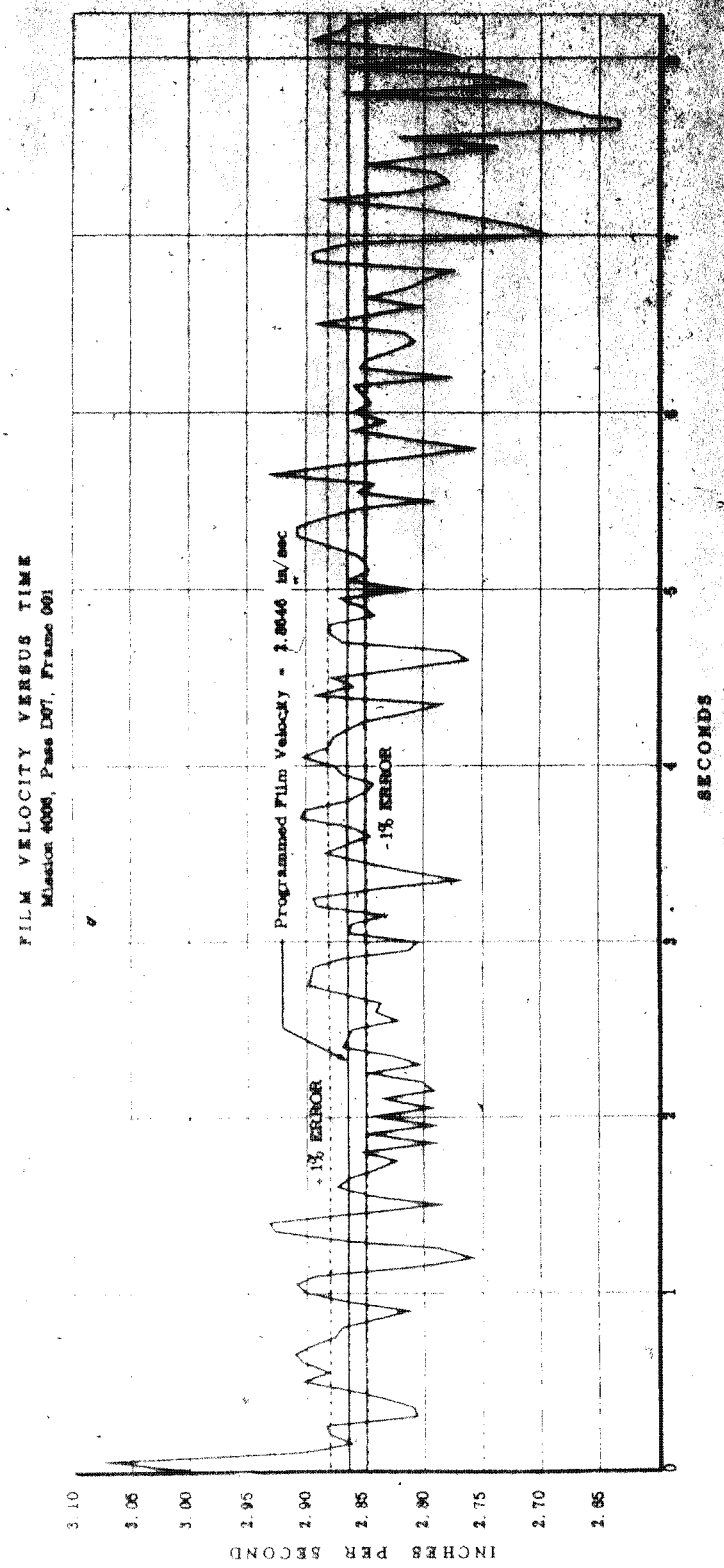

ILLUSTRATION 3

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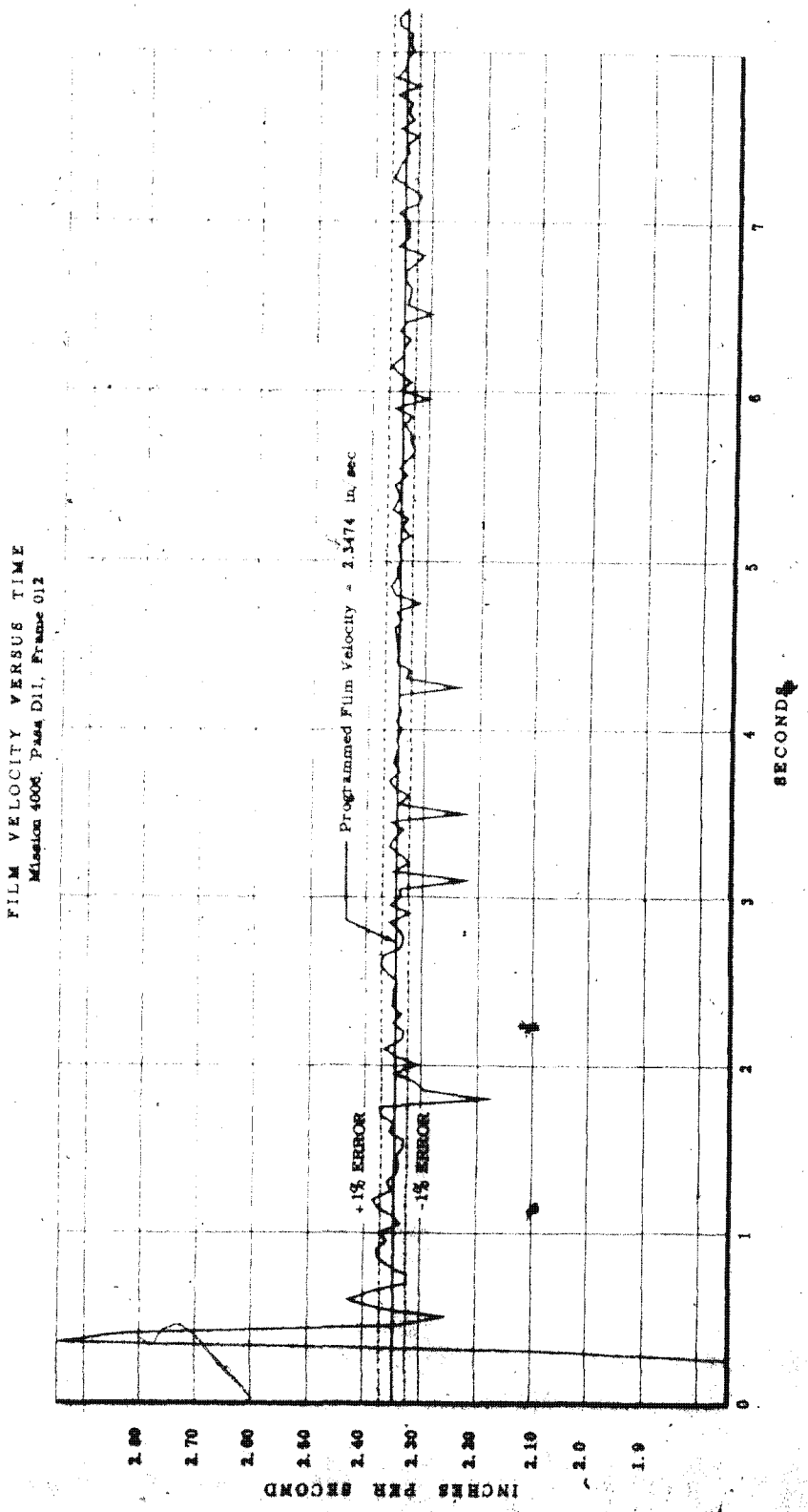

ILLUSTRATION 4

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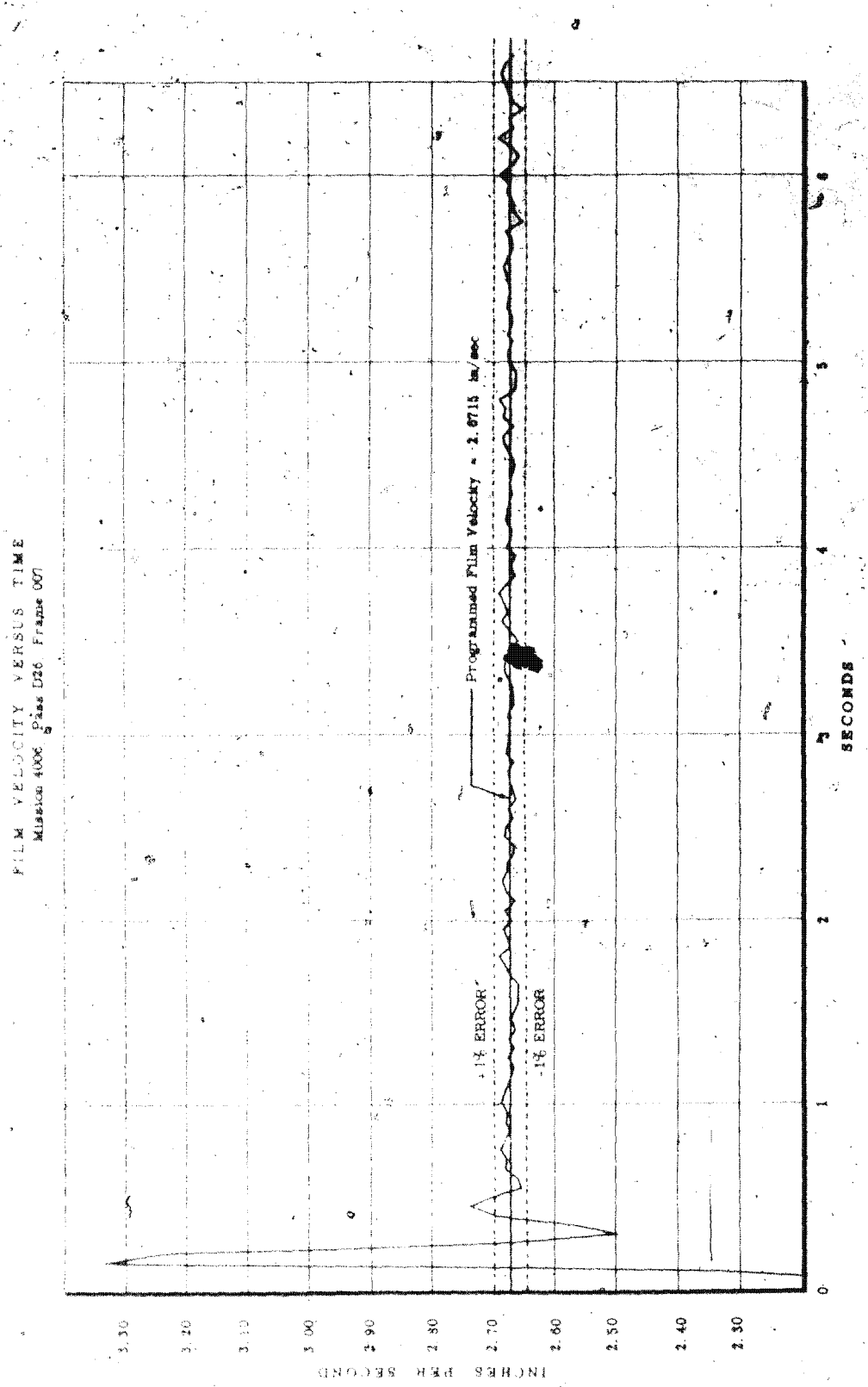

ILLUSTRATION 5

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SECTION V

EXPERIMENTAL OPERATIONS

A. Photographic Data

1. CORN Targets: There were seven orbital attempts to pick up CORN targets. One mobile layout was seen on Rev D15, Frame 014. This was the Bullseye, T-Bar, and Color Patch targets, illustrated by photographs in following pages. The other six installations were missed due to weather. The measurements obtained from the imagery could not be reduced to conclusions in time for this report. A fixed target was found on Rev D16, Frame 006, at Yuma. No description was available for this target, but evaluation will be accomplished when this information is obtained.

2. Blackbird Aircraft: Blackbird (RB-57) was flown on all three days of the mission but located in none of the coverage due to weather and timing errors. The photo coverage obtained by the aircraft was not utilized due to the lack of detail gathered by the short focal length camera (KA-2, 12"). It is recommended that for the 4000 Series Missions, Blackbird not be flown unless at least a 36" focal length camera be utilized with an IMC magazine. The markings on the wings have never been seen. The photo coverage must have a higher ground resolution than the Mission 4006 to be of use. It is recommended

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that the CORN program be continued, but in those sections of the country with the lowest probabilities of cloud coverage.

3. Sun Line experiment was performed on Rev D11, Frames 001 thru 008, to evaluate the capability of the film to provide a proper exposure at low Sun Angles. This experiment was inconclusive because of cloud cover in 60 percent of the frames.

4. Statistical curves on object illumination at various Sun Angles are available for aerial photography at aircraft altitudes but has not been validated for orbital altitudes. On Rev D12, a series of pictures were taken over water at varying Sun Angles in an attempt to validate this illumination curve or generate a new curve for orbital altitudes. The experiment was unsuccessful because of cloud cover in 90 percent of the frames.

5. An experiment to demonstrate the effect of improper IMC speed during oblique photography was successfully accomplished. To perform this experiment the vehicle was rolled to an angle of about 30°L and a triplet was taken at IMC speeds of 4 percent below nominal, nominal, and 4 percent about nominal. The results are illustrated by photographs on the following pages.

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Photographs No. 1 & No. 2

Photograph of Controlled Range Network (CORN) Resolution Target enlarged 20X and 40X. Note blooming of white areas into dark areas. The target was sited in the vicinity of Monroe, La., when photographed.

Rev D15, Frame 014

Altitude: 93.0 NM Obliquity: 3.7 degrees

Scale: 1/88369 Stereo Mirror: Vertical

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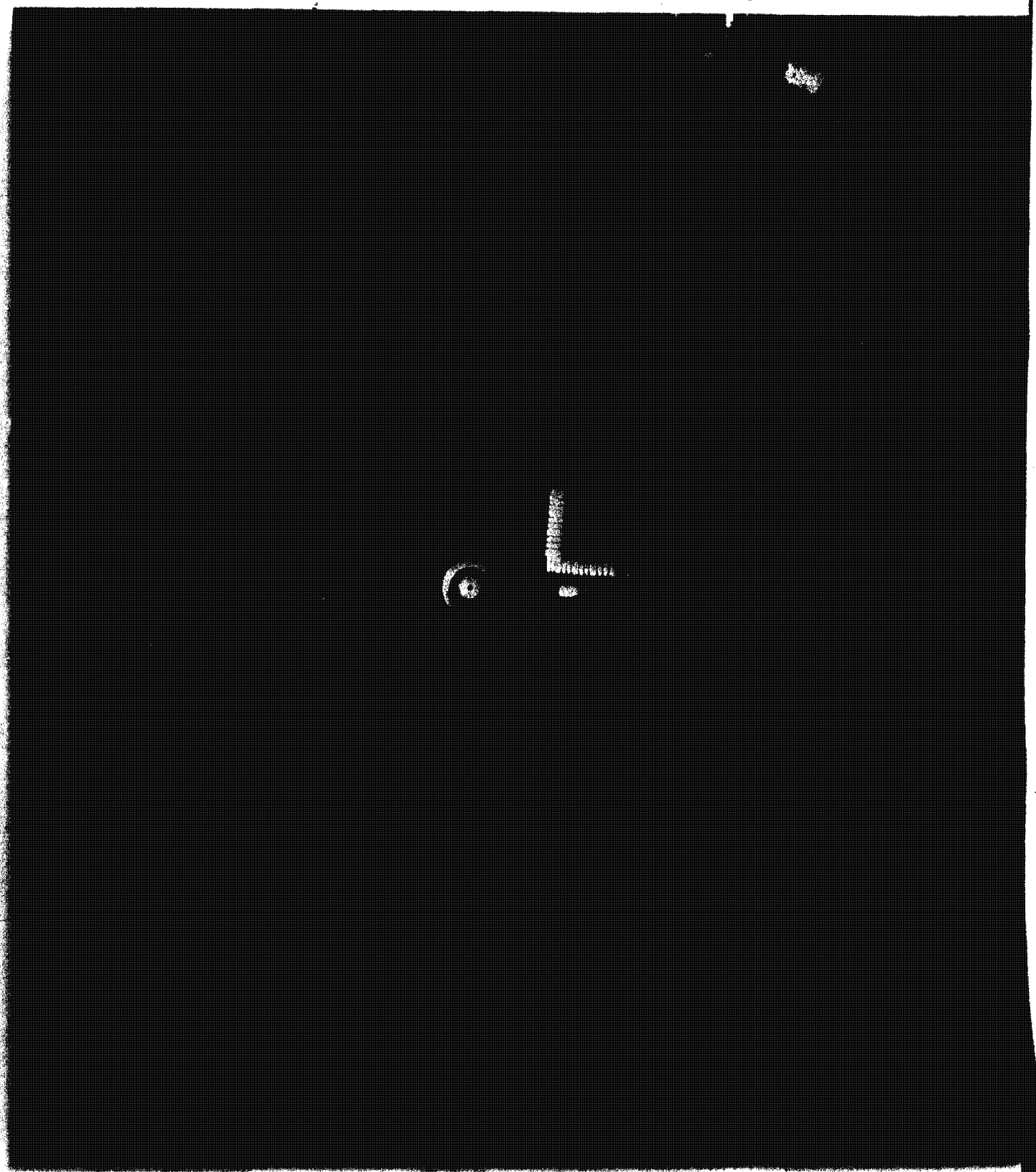

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Photographs No. 3 & No. 4

Bar resolution target in Yuma, Ariz., area enlarged 20X and 40X. Details of this target are unknown.

Rev D16, Frame 006

Altitude: 93.0 NM Obliquity: 1.6 degrees

Scale: 1/88172 Stereo Mirror: Vertical

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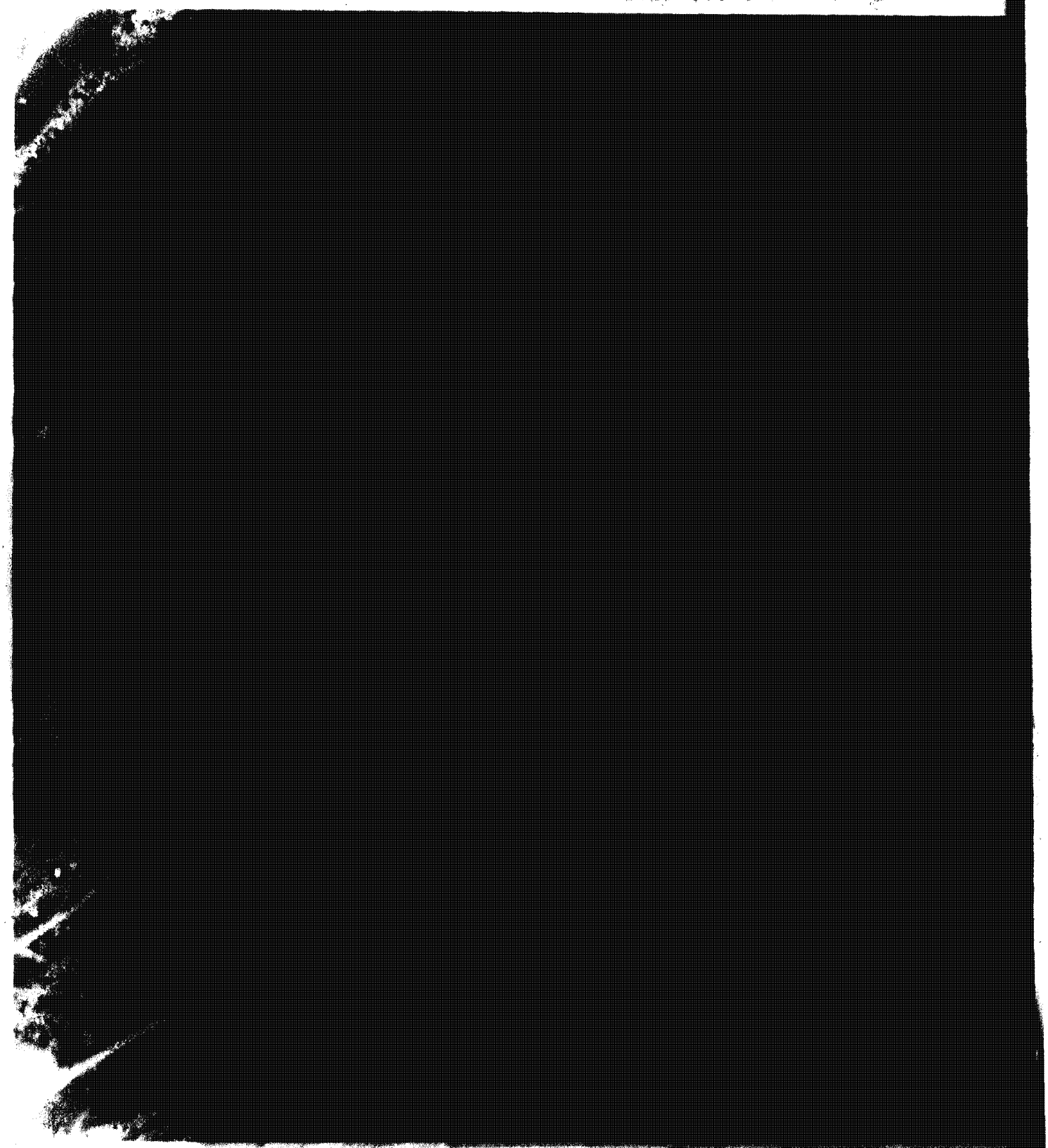

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Photographs No. 5, 6, 7, & 8

These 40X photographic enlargements demonstrate the change of Resolution across the field through comparison. Photos 5 and 7 are 1 1/2 inches in from Title side whereas photos 6 and 8 are 1/2 inch in from fiducial mark on Time Track side. Note edges of white objects and figure 14 on runway. These photographs were taken in area of Chattanooga, Tenn.

Rev D31, Frames 007, 008, & 009

Altitude: 92.4 NM Obliquity: Frame 007 - 2.3 degrees
Frame 008 - 2.0 degrees
Frame 009 - 6.9 degrees

Scale: Frame 007 - 1/90832
Frame 008 - 1/87612
Frame 009 - 1/91400

Stereo Mirror - Frame 007 - Forward
Frame 008 - Vertical
Frame 009 - Aft

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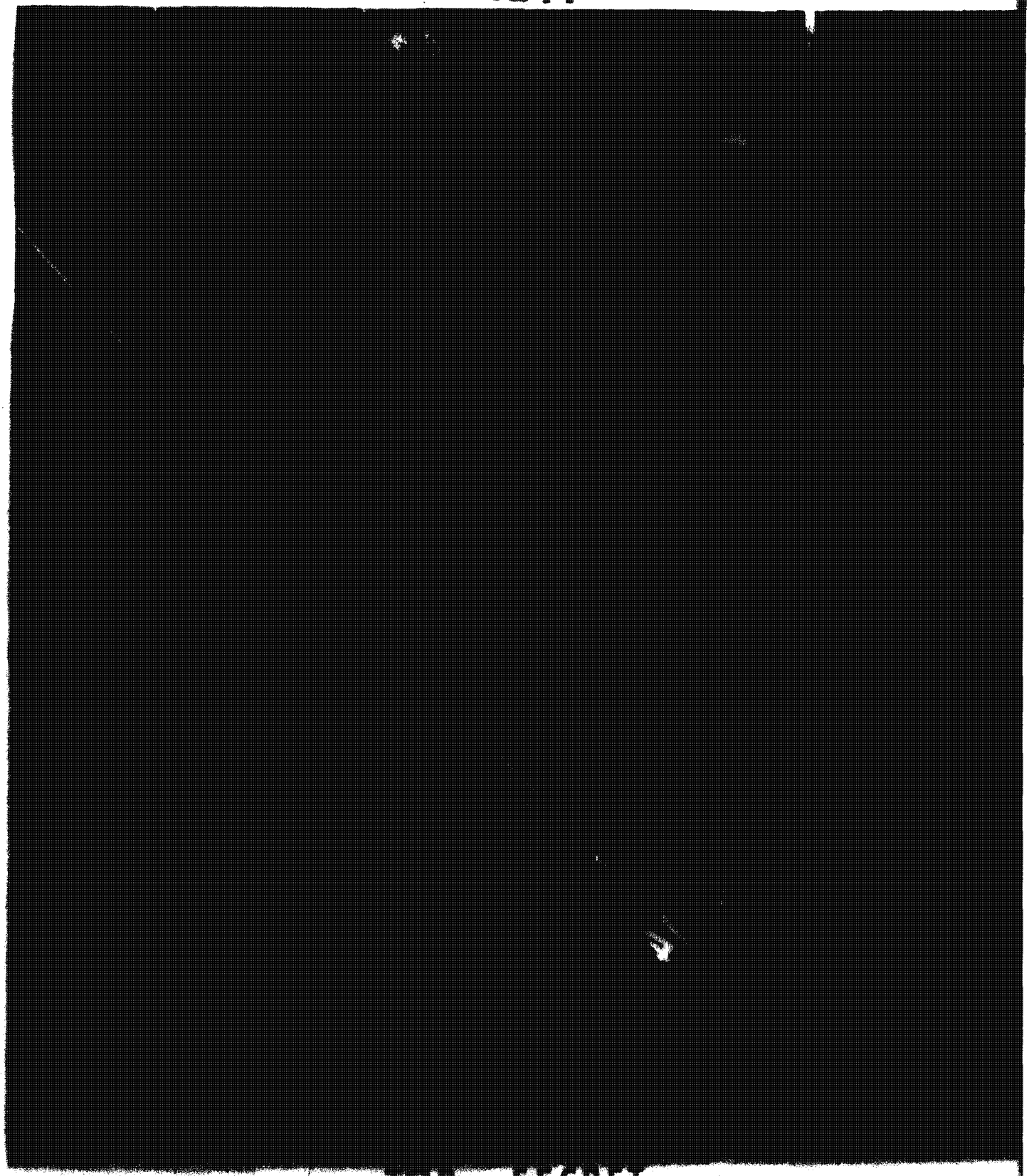

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Photographs No. 9, 10, & 11

These 40X photographic enlargements of a common area of a stereo triplet show no appreciable loss of quality. These photographs are of an airport in the Panama City, Fla., area.

Rev D31, Frames 013, 014, and 015

Altitude: 92.2 NM Obliquity: Frame 013 - 15.1 degrees
Frame 014 - 16.5 degrees
Frame 015 - 17.2 degrees

Scale: Frame 013 - 1/93870
Frame 014 - 1/91220
Frame 015 - 1/94893

Stereo Mirror: Frame 013 - Forward
Frame 014 - Vertical
Frame 015 - Aft

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B. Demonstration of Malfunction Mode

1. On Rev D48, Frames 011 and 012, a comparison of two photographs of the same target was made. Both targets were 4.0 second nadir strips at 35.4 degrees of roll. The first target was programmed at a nominal crab value and the second target two steps (one degree) lower. The purpose of this experiment was to observe if apparent degradation exists. The results showed that the resolution of the second frame was slightly degraded.

2. On Rev D48, Frames 001 and 002, an experiment was conducted to measure the effect and settling time of stereo mirror movement. In this experiment two targets were photographed using a 2.0 second aft strip followed by a 6.0 second forward strip with a 0.3 second interval between the first and second targets. The results show that about 4.4 seconds including settling time is required for satisfactory mirror movement operations.

3. On Rev D48, Frame 003, a 8.0 second nadir strip was used to record completion of roll and the settling time after the vehicle was rolled at a high roll rate. The results showed that 4.8 seconds elapsed from end of roll to end of settling time. A similar experiment was conducted on Rev D48, Frame 004, to test recovery from a medium roll rate. Results

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indicate settling time of about 2.5 seconds. All "Y-axis" motion, seen in the double yaw slit image area, was assumed to be caused by roll motion in both of these cases.

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Photograph No. 12

Example of a two-step (one degree) crab change between two frames, at high obliquity. This experiment was done to determine the practical effects on imagery; in certain cases the STL and G.E. computed programs will calculate crab as much as two steps apart. Imagery on Frame 011 is very slightly better than that on Frame 012.

Altitude: 91.5 NM Obliquity: 37.4 to 36.4 degrees.
Scale: 1/110,300 to 1/108,750; Strips with mirror at zero position.
Contact Print

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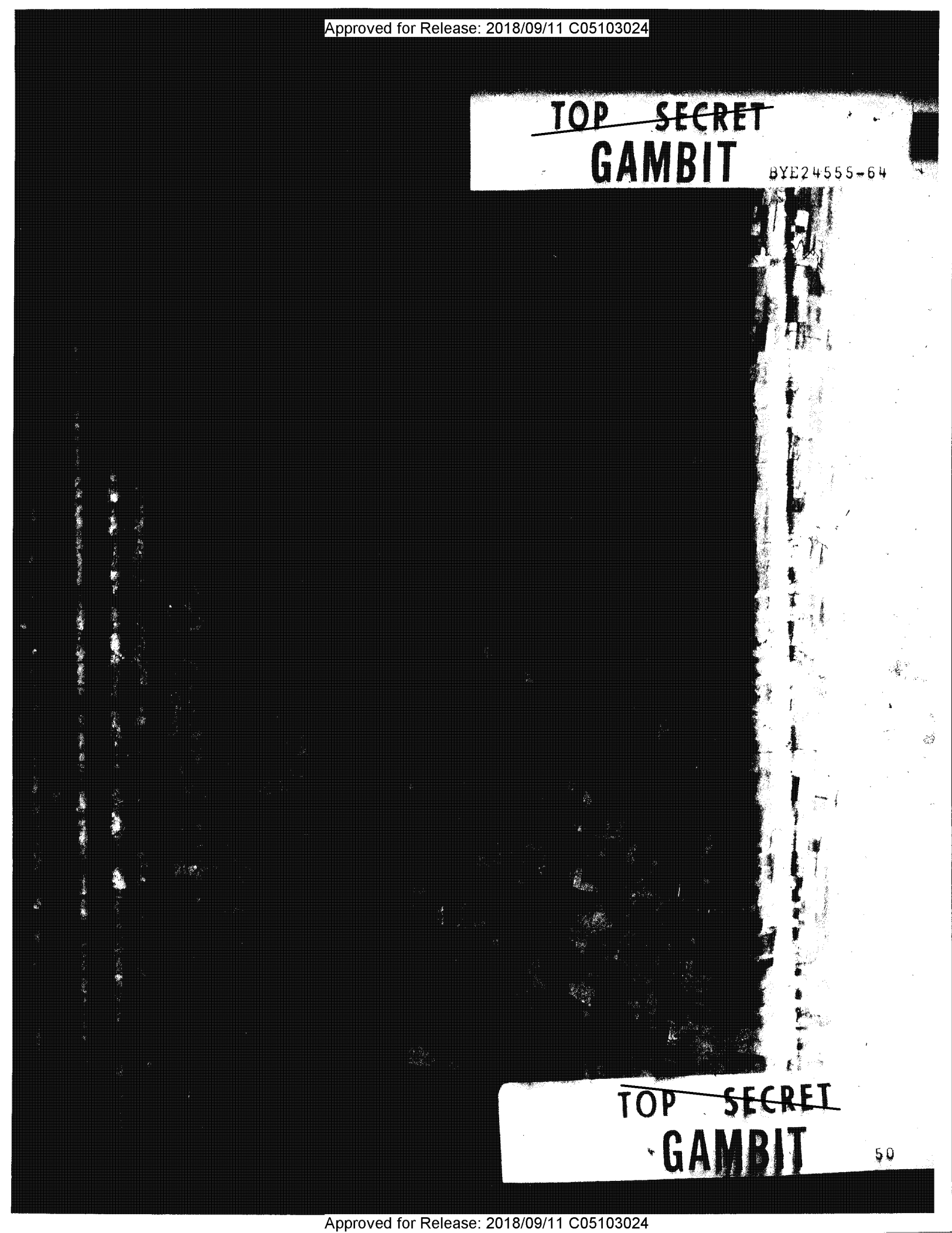

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Photograph No. 13

Example of mirror motion during photography. Note the "boinging" effect when mirror hits the stop. This ringing can be seen in the double yaw slit areas, as a Christmas tree effect, for nearly a second after the mirror stops.

Rev D48, Frames 001 to 002

Altitude: 93.0 NM Obliquity: 0.8 degrees

Scale: 1/91,300; Aft to forward strip, with insufficient time to move mirror programmed, to demonstrate the motion.

Contact Print

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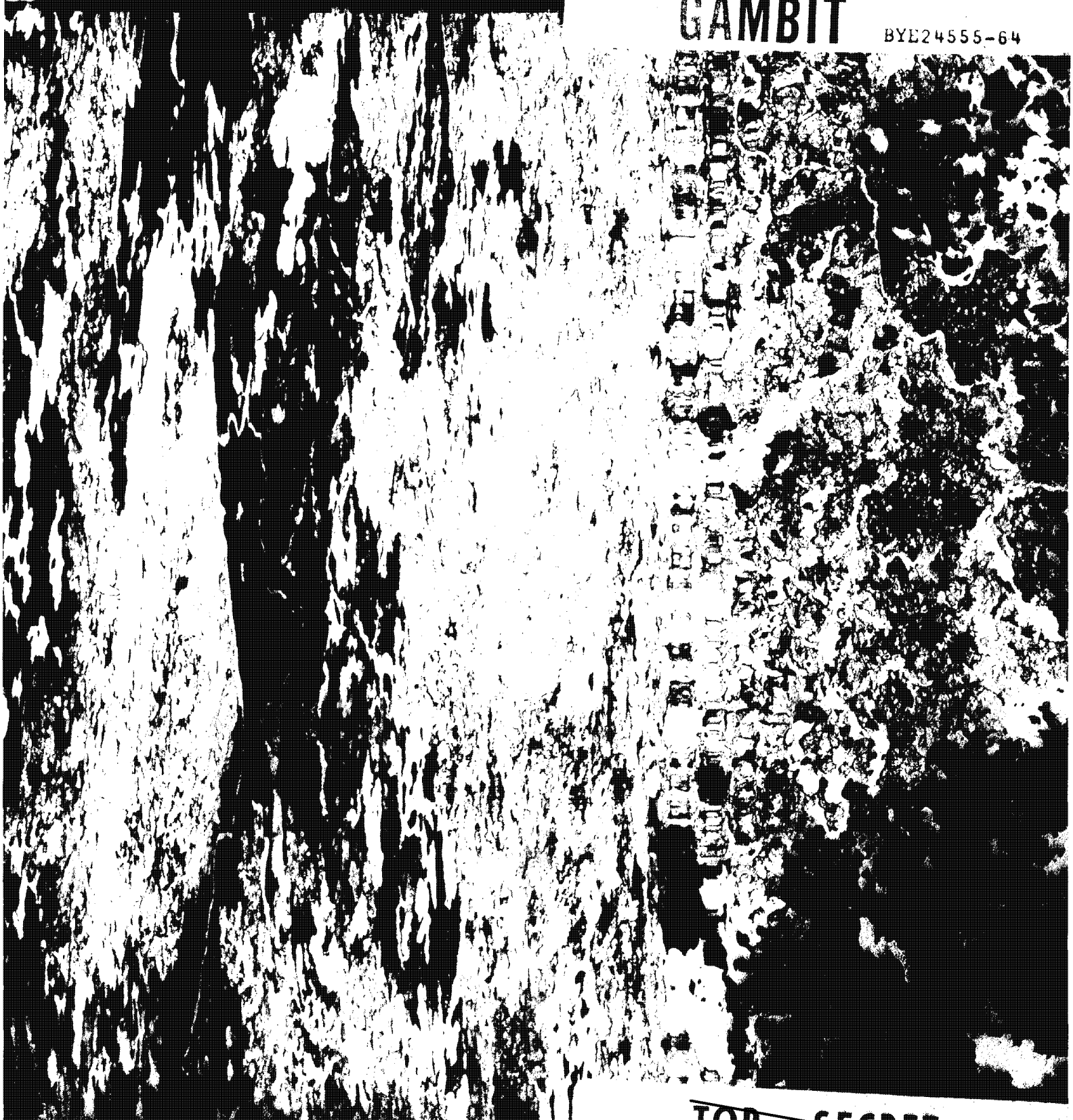

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Photograph No. 14

Example of high roll rate during photography, permitting a general measurement of settling time from the high rate. Settling time is estimated here at about 4.8 seconds.

Rev D48, Frames 002 to 003

Altitude: 92.9 NM Obliquity: 11.5 degrees to -.6 degrees

Scale: 1/91,400 to 1/90,000; Strip with mirror at zero position.

Contact print

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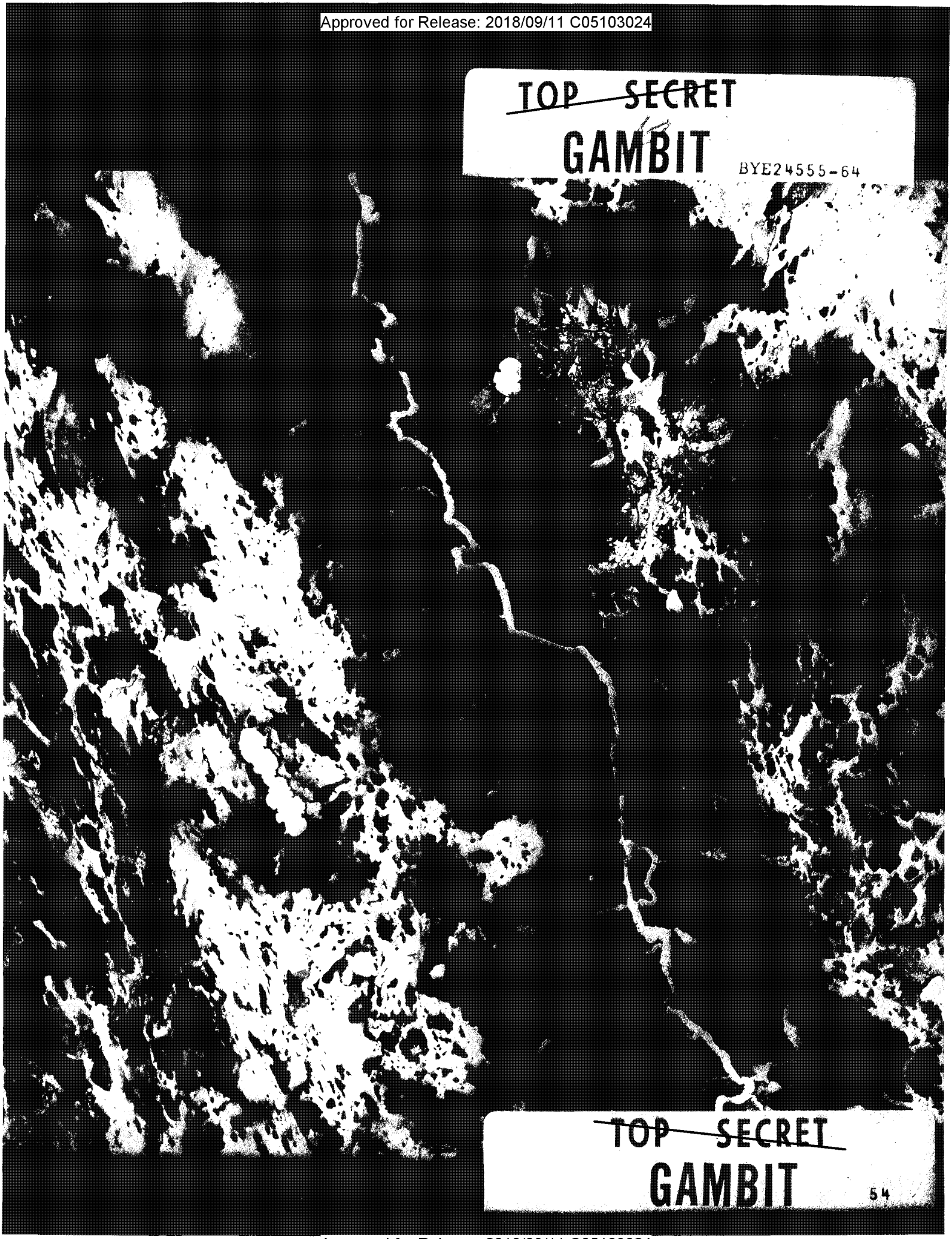

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Photograph No. 15

Example of medium roll rate during photography, to permit measurement of settling time.

Settling time here is estimated at 2.5 seconds.

Rev D48, Frames 003 to 004

Altitude: 92.8 NM Obliquity: -0.6 degrees to 11.0 degrees

Scale: 1/89,800 to 1/87,900; Strip with mirror at zero position.

Contact Print.

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Photographs No. 16, 17, & 18

These 40X photographic enlargements demonstrate the effect of IMC errors at the frame edge during oblique photography. Photograph No. 16 is a 4% slow IMC showing no displacement along the yaw slit and smear in the main photo area. Photograph No. 17 illustrates correct IMC with good imagery in the photo and imagery displaced along the yaw slit. Photograph No. 18 illustrates the results of 4% fast IMC creating a large displacement along the yaw slit and some smear in the main photo area. Area of photographic coverage is the South Texas plains.

Rev D48, Frames 014, 015, and 016.

Altitude: 91.3 NM Obliquity: Frame 014 - 31.4 degrees
Frame 015 - 32.4 degrees
Frame 016 - 33.0 degrees

Scale: Frame 014 - 1/105565
Frame 015 - 1/102870
Frame 016 - 1/107513

Stereo Mirror: Frame 014 - Forward
Frame 015 - Vertical
Frame 016 - Aft

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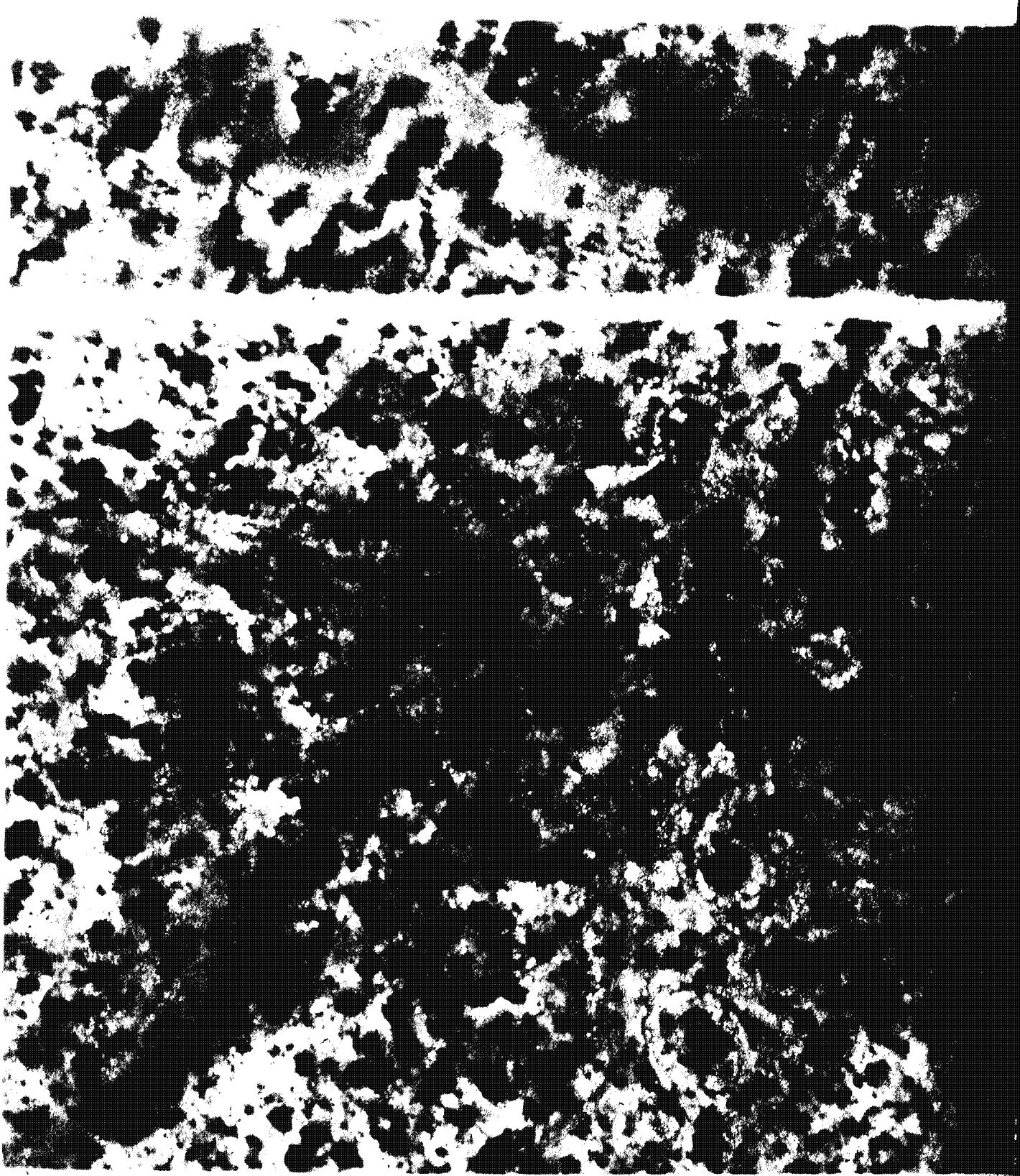

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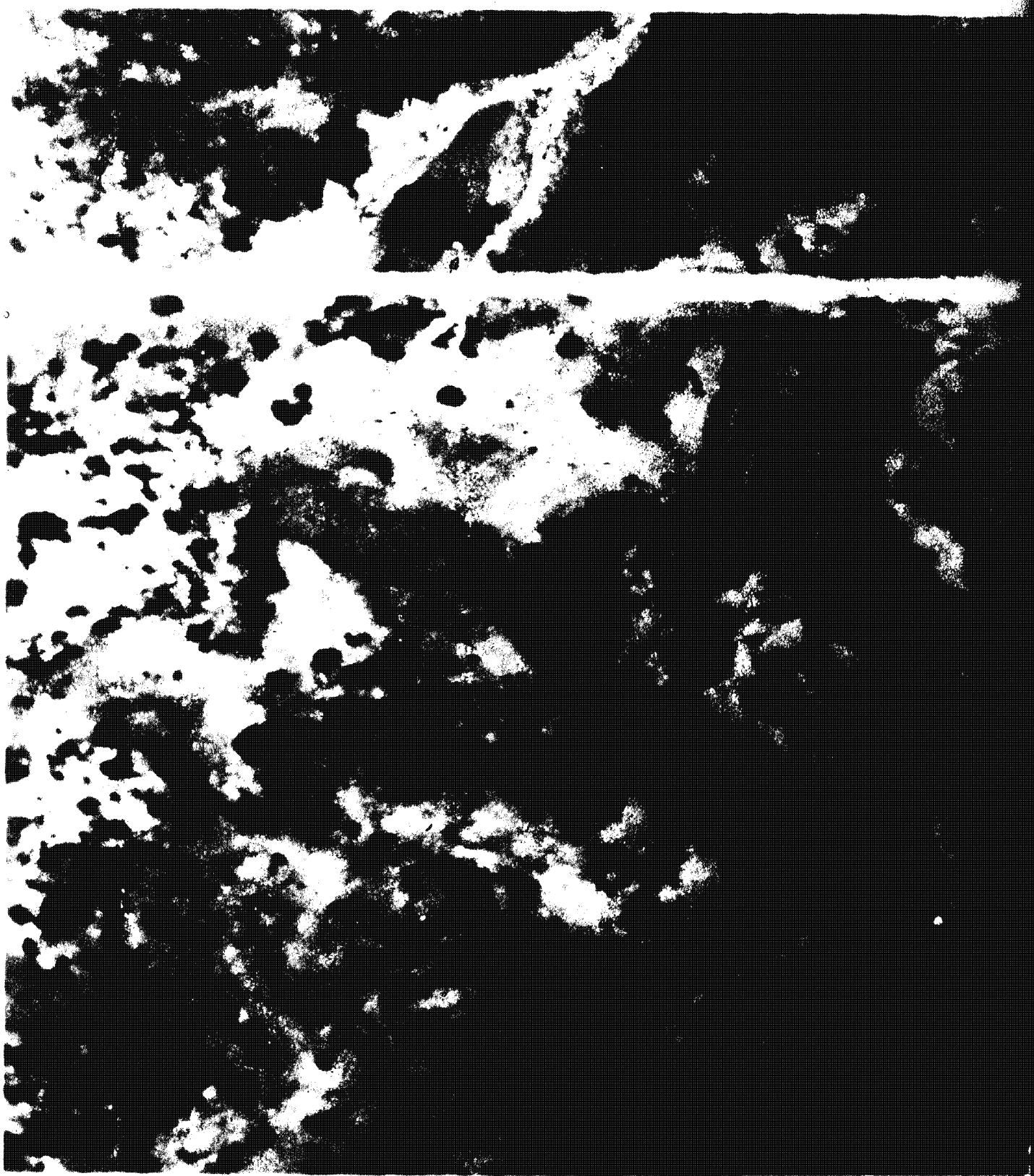

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C. New Operational Modes

1. Description.

Several photographs were taken over the ZI to test the effectiveness of various modes of operation not presently included as standard system capabilities. If these techniques prove to have operational utility, computer programs can be prepared to provide using agencies with these new capabilities. Three varieties of experimentation, of the following general types, were tried:

15 Degree Stereo: One strip is taken either with the stereo mirror forward or in the nadir position. The second strip overlaps the first and is taken from either the nadir or aft stereo position depending on the position of the stereo mirror for the first strip. A stereo triplet consists of a 15 degree stereo shot in which the first frame of the photograph is taken with the stereo mirror forward, followed by a frame with the stereo mirror in the vertical position and finally, another frame taken with the stereo mirror in the aft position. The stereo triplet provides the evaluator with a normal (30 degree) stereo of a target, plus two 15 degree stereo pairs of the same target for purposes of comparison. Operationally, the triplet might prove useful in itself, as it requires no more time than a normal short burst stereo pair; however, the real value of the 15 degree stereo is that it

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would permit two adjoining targets approximately 40 miles apart to be taken in stereo.

Lateral Triplet: Three strips are taken so that the edges of each are nearly adjoining, and the centers of each strip lie on a line perpendicular to the ground track. Each strip is taken with a different position of the stereo mirror and a slight roll is required between strips to insure proper alignment. This technique has an obvious advantage in photographing targets or target complexes which are nearly three times the width of the photographic swath.

Angled Triplet: Three strips are taken so that at least one point on the edges of each strip adjoins another and the centers of the strip lie on a straight line at some selected angle to the ground track. This is a variation of the lateral triplet.

2. Results.

15 Degree Stereo. In the four experiments conducted with this mode of operation, all photography was of good quality and all frames overlaped with edge displacements that varied from 2.2 down to 0.2 nautical miles.

The following photographs were taken in 15 degree stereo:

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Rev	Frame	(stereo triplet)
D15	001	Riverstri/Land-o-Lake/Rhineland, Wis.
	002	
	003	
D15	004	Madison, Wis.
	005	
	006	
D31	003	Collins/Stripster/Coast, Mich.
	004	
	005	
D31	013	Panama City, Fla.
	014	
	015	

Lateral Triplets. Both attempts to demonstrate this capability were successful. For example, the following comment applies to the triplet of Chattanooga: Displacement between the first and second frames was 0.3 nautical miles North and they overlapped by 1.0 nautical miles. Displacement between the second and third frames was 0.3 nautical miles and they overlapped by 1.3 miles. The photography of St. Louis was equally good.

The following lateral triplets were taken:

Rev	Frame	
D15	008	St. Louis, Mo.
	009	
	010	
D31	007	Chattanooga, Tenn.
	008	
	009	

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Angled Triplets. One attempt to demonstrate this capability was suqcessful. The other attempt was not successful because the additional constraint of using only medium roll rates was imposed. This limitation caused a gap between the strip shots which would not have occurred without the restriction on roll rates. This experiment will be redone on the next mission.

The following angled triplets were taken:

Rev	Frame	
D15	011 012 013	Little Rock, Ark. Center lines were aligned in a direction south-west from the north-south ground track. This shot was successful.
D31	010 011 012	Martin, Ala. Center lines were in north-west direction from ground track.

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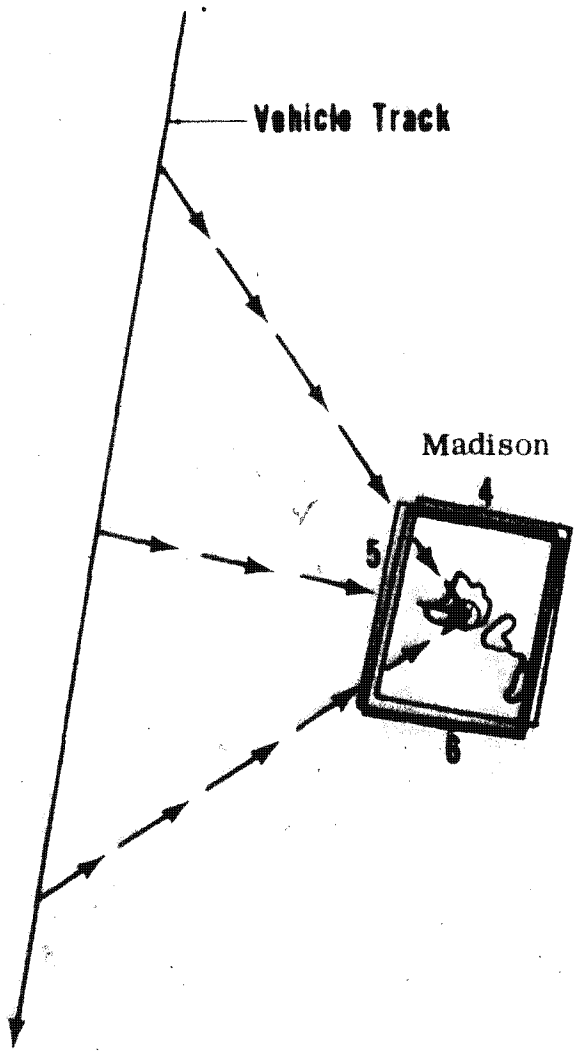
TRIPLE STEREO



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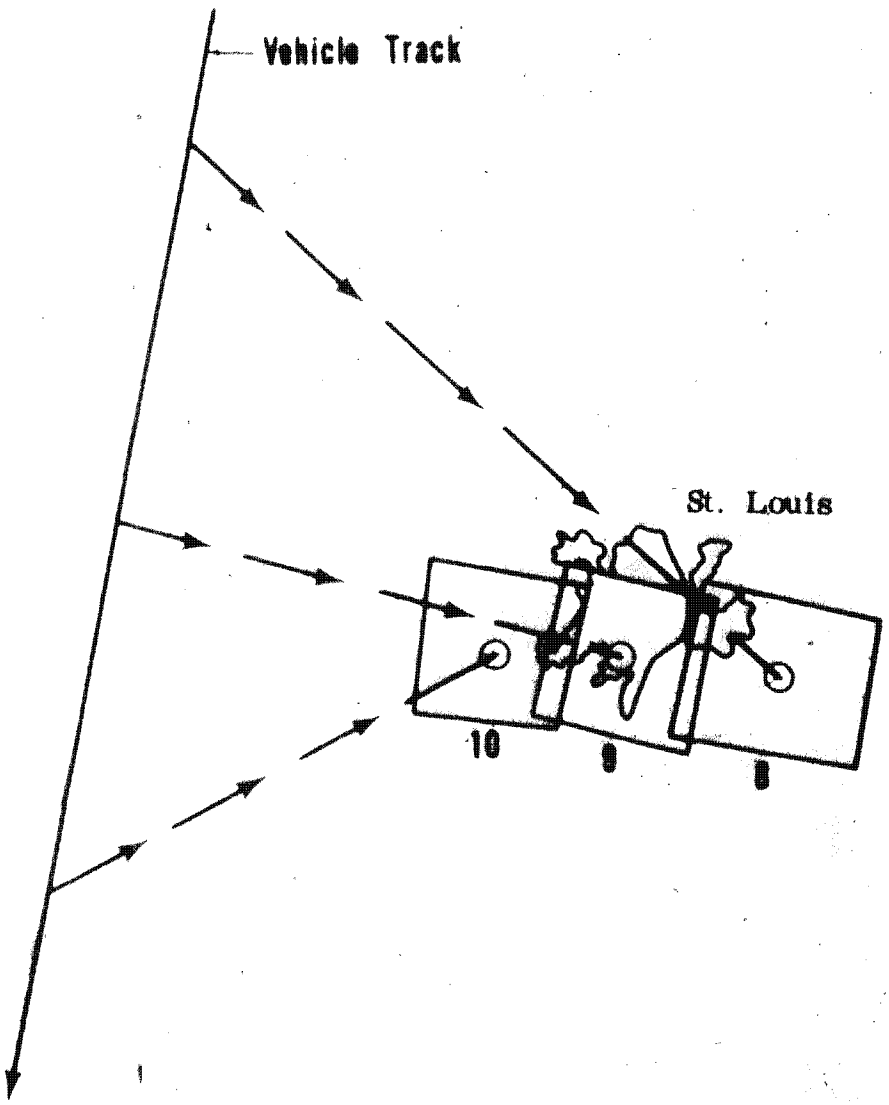
LATERAL TRIPLET



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DISPLACED LATERAL TRIPLET

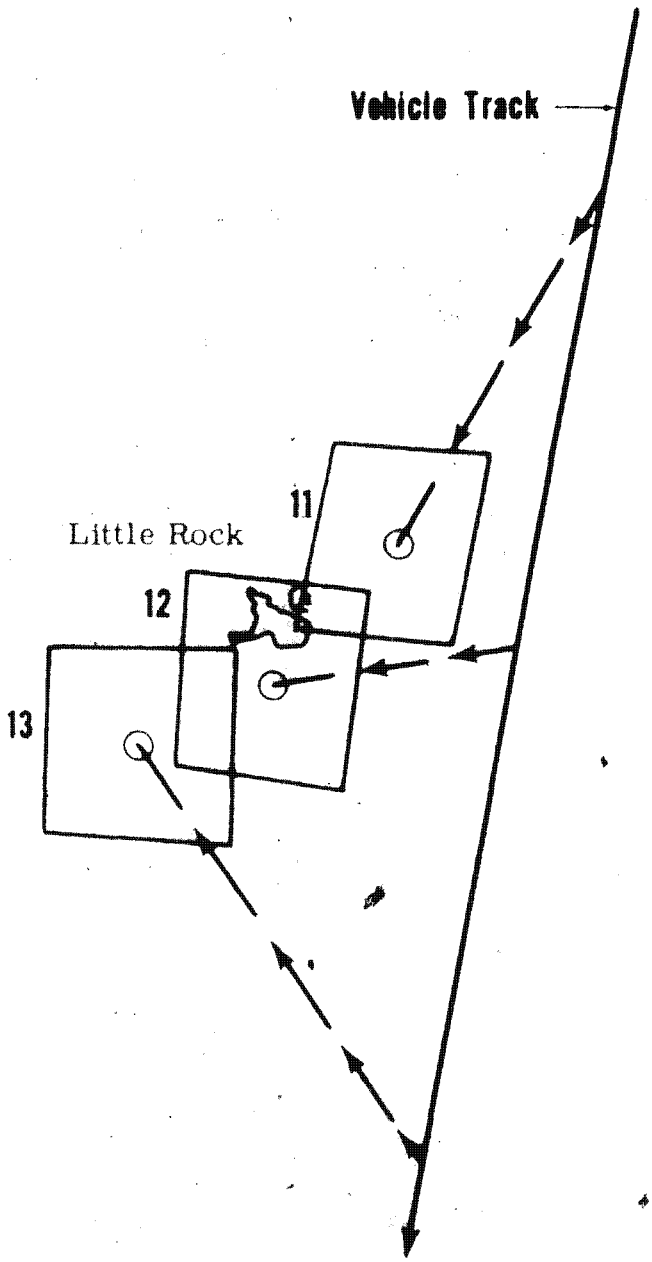

ILLUSTRATION 8

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D. Pointing Error Program (PEP)

During the evaluation of Flight 6 results an IBM 1620 computer program was written which will calculate satellite pointing error in roll, pitch, and yaw coordinates. This program is available at the 6594 Test Squadron, Westover. The program as presently written will calculate pointing error only when map-matching measurements of in-track and cross-track pointing error on each half of a stereo pair are provided. The program assumes that the satellite attitude is the same with respect to the local horizon for both halves of the stereo pair.

The results are valid only for the approximation of small angular pointing error.

Pointing Error Program (PEP) Structure

This program is written in 1620 PDQ-P Fortran but is generally compatible with any Fortran II compiler accepting PRINT and TYPE statements. Subroutines used are COSF, SINF and ABSF. Data are generally read in a combination A and F format.

Initial Cards

Three initial cards must be entered at the beginning of program operation. These cards define alphameric constants and are entered only once. Cards must be left justified:

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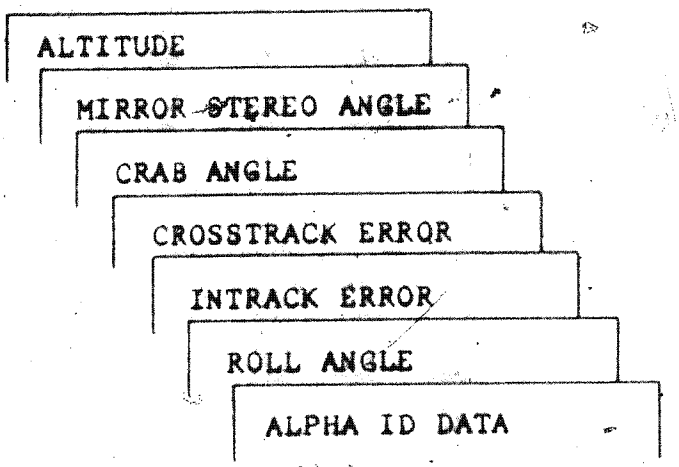
CARD 1: ALTMIRCRAINTCROROL

CARD 2: LAST

CARD 3: NEXT

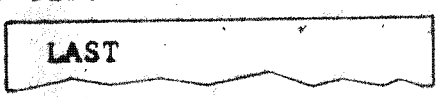
Data Cards

Data consists of a normal six-card set, preceded by an alphameric ID card:



The ID card must be entered first, but the following cards may come in any order. If more than one set is to be run, the first set and each succeeding set, except the last, is followed by a NEXT card:

The last set is followed by a LAST card:



Data format is actually

A3, 22X, F8.3, 2X, F8.3

which places the decimals in columns 30 and 40. The first three alphameric characters only are significant. In some

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systems, it may be necessary to format the NEXT and LAST cards as data due to handling of blank fields. These cards, under such circumstances, would require decimal points in Columns 30 and 40 in addition to the appropriate NEXT or LAST punched in Columns 1-4.

Error Checks:

The program automatically sorts and counts data. If too few cards are available, or if some data cannot be identified, the alphameric ID is printed, an appropriate error message is typed, and the program proceeds to the following NEXT or LAST card.

Output:

Output consists of a complete listing of input as well as computed quantities. Results for flight are shown in table which follows this narrative.

Growth:

It is intended that the PEP program will be expanded to handle cases other than stereo; for example, strip forward, strip aft, lateral pair, triplet, and the case when there is a difference in orientation for each frame of a given sequence.

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TYPICAL INPUT DATA LISTING

TYPE	CONTENTS		
Initial	ALTMIRCRAINTCROROL		
ID	BOOLA-BOOLA TEST	3/23/64	SORRELS PGM
	ALTITUDE	102.68	102.01
Data	MIRROR STEREO ANGLE	30.02	-27.65
	CRAB ANGLE	1.05	1.25
	INTRACK ERROR	9.67	11.23
	CROSSTRACK ERROR	10.55	9.22
	ROLL ANGLE	2.35	2.01
Next	NEXT		
Bad Set	ERROR ID CARD-GARBAGE ALPHA		
	JDTTESTERROR	.xx	.xx
Next	NEXT		
Bad Set	MISSING DATA TEST-THREE CARDS		
	CRAB ANGLE	1.05	1.25
	MIRROR STEREO ANGLE	30.02	27.65
	ALTITUDE	102.68	102.01
Last	LAST		

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THE FOLLOWING TABLES GIVE THE RESULTS OF THE ATTITUDE DETERMINATIONS WITH THE PEP 1620 COMPUTER PROGRAM FOR SEVEN CASES OF FLIGHT 6 AND FOR ONE CASE OF FLIGHT 5. AS NOTED FROM THE FIGURES OF THE TABLES, ON FLIGHT 6 THE ATTITUDE MEASURED SHOWED GOOD PERFORMANCE EVEN THOUGH MAP, EPHEMERIS, AND TDATA ERRORS WOULD TEND TO INCREASE THE MEASURED ATTITUDE ERRORS. FLIGHT 5 SHOWS THAT BY REV D06, FRAMES 011 AND 012, THE YAW ANGLE ERROR HAD REACHED 17.3 DEGREES, WHILE THE PITCH AND ROLL ERRORS WERE ONLY ABOUT TWO DEGREES. ALL MEASUREMENTS ARE IN NAUTICAL MILES AND DEGREES.

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TOP SECRET GAMBIT

STEREO Rev D04, Frames 001/002

ALTITUDE	98.700	98.500	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	.500	.500	DEGREES
INTRACK ERROR	.000	- 4.000	NAUTICAL MILES
CROSSTRACK ERROR	1.200	.100	NAUTICAL MILES
ROLL ANGLE	-34.700	-34.700	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.25837751E 00	
FROM ALL MEASUREMENTS	.11696499E 01		-.19162189E 00

STEREO Rev D05, Frames 001/002

ALTITUDE	99.000	98.800	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	1.500	1.500	DEGREES
INTRACK ERROR	.700	2.300	NAUTICAL MILES
CROSSTRACK ERROR	- .800	- .300	NAUTICAL MILES
ROLL ANGLE	33.300	33.300	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		-.21484891E 00	
FROM ALL MEASUREMENTS	-.35262787E 00		.68893248E 00

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STEREO Rev D05, Frames 006/007

ALTITUDE	94.400	94.200	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	2.500	2.500	DEGREES
INTRACK ERROR	- .900	1.600	NAUTICAL MILES
CROSSTRACK ERROR	.600	1.100	NAUTICAL MILES
ROLL ANGLE	40.400	40.400	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.27713792E 00	
FROM ALL MEASUREMENTS	.86734959E 01		.33467186E 00

STEREO Rev D05, Frames 009A/010A

ALTITUDE	94.100	93.900	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	2.500	2.500	DEGREES
INTRACK ERROR	- .300	.800	NAUTICAL MILES
CROSSTRACK ERROR	.000	.800	NAUTICAL MILES
ROLL ANGLE	22.700	22.700	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.19961166E 00	
FROM ALL MEASUREMENTS	.17954116E 00		.73883288E 00

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TOP SECRET GAMBIT

STEREO Rev D05, Frames 012A/013A

ALTITUDE	94.400	94.600	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	3.500	3.500	DEGREES
INTRACK ERROR	- 2.000	.000	NAUTICAL MILES
CROSSTRACK ERROR	1.500	.000	NAUTICAL MILES
ROLL ANGLE	- 1.400	- 1.400	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.45411779E 00	
FROM ALL MEASUREMENTS	.50698695E 00		-.17145201E 01

STEREO Rev D05, Frames 014A/015A

ALTITUDE	95.900	95.700	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	3.500	3.500	DEGREES
INTRACK ERROR	- 2.000	1.000	NAUTICAL MILES
CROSSTRACK ERROR	2.000	1.000	NAUTICAL MILES
ROLL ANGLE	- 9.200	- 9.200	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.88826600E 00	
FROM ALL MEASUREMENTS	.37865272E 00		-.10727142E 01

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STEREO Rev D23, Frames 017A/018A

ALTITUDE	91.700	91.700	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	3.000	3.000	DEGREES
INTRACK ERROR	- 1.400	.000	NAUTICAL MILES
CROSSTRACK ERROR	.700	.000	NAUTICAL MILES
ROLL ANGLE	26.200	26.200	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		.16663732E 00	-.72801180E 00
FROM ALL MEASUREMENTS	.27873959E 01		

MISSION 4005

STEREO Rev D06, Frames 011/012

ALTITUDE	96.000	96.000	NAUTICAL MILES
MIRROR STEREO ANGLE	15.000	-15.000	DEGREES
CRAB ANGLE	3.000	3.000	DEGREES
INTRACK ERROR	-27.900	-23.600	NAUTICAL MILES
CROSSTRACK ERROR	3.200	-14.500	NAUTICAL MILES
ROLL ANGLE	34.000	34.000	DEGREES

ERRORS

MEASUREMENTS	PITCH	ROLL	YAW
FROM CROSSTRACK		-.21507852E 01	-.1731[illegible]E 02
FROM ALL MEASUREMENTS	.20858637E 01		

TOP SECRET GAMBIT
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PERFORMANCE EVALUATION TEAM
REPORT 4006/64

APPENDIX A

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COMMAND INFORMATION

Rev D04

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	7450.3	8.3	69 57N	165 03E	69 58.4N	165 04.7E	2.4427	2.442	15°F	0.6	- 34.7
002	7466.0	8.3			68 56.9N	164 09.3E	2.4918	2.497	15°A	0.5	- 34.7
003	7515.1	50.0	65 42N	161 42E	65 42.8N	161 42.8E	3.2598	3.256	0	1.5	3.5
004	7606.0	40.0	59 39N	158 23E	59 39.7N	158 24.0E	2.4427	2.443	0	1.5	42.1
005	7686.3	10.0	54 15N	156 14E	54 16.1N	156 14.3E	2.2558	2.254	15°F	2.0	41.1
006	7701.8	10.7	53 12N	155 52E	53 13.5N	155 52.5E	2.2334	2.234	15°A	1.0	41.8

TOP SECRET GAMBIT
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PHOTO-MAP POSITIONING

Rev D04

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	195	0	1.2W	2.0S	0	0	0.6	.00	1.1	+ .26	.19	8,000
002A	195	4.0N	.1W	2.0S	1.3W	0	0.5	.21				8,000
003A	196	5.0N	0		0	- 0.1	0	.12				10,000
#003B		1.0N	0	1.0N	0							10,000
#003C		0	4.0E									10,000
004A	195	.5S	.7W	0	2.3E	0	0.1	.13				7,000
#004B		1.2S	1.0E									8,000
005A	192	.5N	1.0W			- 0.1	0.2	.07				4,500
#005B		2.2N	.8W	1.0N	.7E							4,500
006A	192	1.5S	.9W	2.6N	1.3W	0	0.2	.03				4,500
#006B		3.0S	.4W									4,500

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

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PHOTOGRAPHIC EVALUATION

Rev D04

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.42	1.99	2.03	16.0	1.78	-	98.7
002	1.39	2.00	2.14	16.0	1.82	-	98.5
003	1.09	2.24	5.10	19.9	13.82	-	97.9
004	1.15	2.23	4.65	26.2	8.23	-	96.7
005	1.32	2.32	5.17	-	1.94	-	95.7
006	1.09	2.30	6.13	32.1	2.05	-	95.5

TOP SECRET / GAMBIT
Handle Via BYEMAN Controls Only
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COMMAND INFORMATION

Rev 005

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Epheremis Lat Deg	Best Epheremis Lat Min	Best Epheremis Long Deg	Best Epheremis Long Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	12725.3	8.3	71	38N	144	04E	71	39.9N	144	43.0E	2.4427	2.442	15°F	1.5	33.3
002	12741.0	8.3					70	38.9N	143	38.4E	2.4185	2.419	15°A	1.5	33.3
003	12763.9	80.0	69	07N	142	12E	69	09.4N	143	14.0E	3.2275	3.232	0	1.5	- 8.5
004	12953.4	50.0					56	33.8N	134	60.0E	3.1326	3.139	0	2.0	17.7
005	13087.0	5.8	47	30N	132	01E	47	32.4N	132	01.6E	2.2113	2.214	15°F	2.5	42.5
006	13097.3	7.6	46	48N	131	49E	46	50.5N	131	50.0E	2.3241	2.324	15°F	2.5	40.4
007	13114.4	7.6					45	41.0N	131	31.3E	2.2558	2.254	15°A	2.5	40.4
008	13128.9	5.0	44	40N	131	15E	44	42.0N	131	15.8E	2.9805	2.989	15°F	2.5	17.7
009	13140.4	8.3	43	53N	131	03E	43	55.2N	131	03.9E	2.8642	2.862	15°F	2.5	22.7
010	13154.0	8.3					42	59.8N	130	50.0E	2.8078	2.806	15°A	2.5	22.7
011	13212.3	15.0	39	00N	129	53E	39	02.1N	129	53.9E	2.7800	2.785	0	2.0	- 37.6
012	13765.8	6.9	01	10N	123	06E	01	13.5N	123	06.5E	3.1639	3.168	15°F	3.5	- 1.4
013	13778.0	6.9					00	22.7N	122	58.5E	3.1639	3.165	15°A	3.5	- 1.4
014	13844.0	6.9	04	11S	122	14E	04	08.7S	122	15.2E	3.1015	3.105	15°F	3.5	- 9.2
015	13856.2	8.3					04	58.2S	122	07.1E	3.1326	3.136	15°F	3.5	- 9.2

TOP ~~SECRET~~ GAMBIT

Handle Via BYEMAN Control Only

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PHOTO-MAP POSITIONING

Rev D05

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	200	.7S	.8E			0.6	1.5	.03	-.35	-.21	.68	7,000
001B		1. S	1.5E	1.5S	0							15,000
002A		2.3S	.3E	1.5S	1.5W	0.7	1.4	.02				7,000
002B		1. S	1.5E									15,000
003A	195	0	1. W			0.8	0.8	.14				15,000
003B		1. S	1. E									15,000
003C		0	1. W									15,000
003D		.1N	0	1.0N	1.0N							15,000
003E		0	0									15,000
003F		3. N	4. E									15,000
003G		0	0									15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Gapplot Section.

TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only
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Rev D05 (Contd)

Acc/ PAM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
004A		TIME				1.3	0.8	.20				5,000
004B			WORDS									5,000
004C				UNREADABLE								5,000
005A	193	.7N	1.1E	1.5N	1.1E	0.7	0.2	.12				1,700
006A	192	.9N	.6W	1.9S	1.9W	0.7	1.2	.00	.09	+.28	.33	1,700
006B		1.7N	.4E									1,600
007A	192	1.6S	1.1W	2.6S	1.5E	0.7	0.2	.08				1,700
007B		2.0S	.1E									1,600
#008A	190	4.0N	1.1W	1.0N	.3W	0.7	0.2	.28				1,300
008B		.3N	1.1W									1,300
009A	192	.3N	0	1.5S	0	0.7	0.2	.08	.18	+.20	.74	1,300
009B		.2N	0									1,200

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTO-MAP POSITIONING

Rev D05 (Contd)

Acc/ P&M No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) T	Attitude Error (deg) Y	Map Accuracy (± ft)
010A	192	.8S	.8E	1.5S	3. W	0.7	0.2	.06				1,000
010B		.6S	.6E									1,000
011A	189	.6N	.1W	1.3N	.4W	0.7	0.2	.18				1,000
011B		.2N	1.2W									1,000
012A	188	2.0N	1.5W	1.5N	0	1.4	0.1	.13	.51	+.45	.17	5,000
013A	188	0	0	1.5N	3. E	0.7	0.1	.08				5,000
014A	189	2. N	2. W	3. N	0	0.1	0.2	.11	.28	.89	-1.1	5,000
014B		2. N	1. W									5,000
015A	189	1. S	1. W	3. N	3. E	0.7	0.1	.11				5,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in booklet section.

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PHOTOGRAPHIC EVALUATION

Rev D05

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.23	1.82	1.96	14.4	1.78	-	99.0
002	1.21	1.83	2.03	14.4	1.76	-	98.8
003	0.96	2.06	3.79	16.4	21.75	-	98.5
004	0.48	1.96	6.00	29.3	13.27	-	96.1
005	1.12	2.14	3.73	39.1	1.21	2.18	94.5
006	1.98	2.12	4.16	39.7	1.54	2.00	94.4
007	1.06	2.14	3.98	39.7	1.49	2.00	94.3
008	0.31	1.36	4.46	41.8	1.43	1.98	94.1
009	0.38	1.54	4.40	42.6	2.14	0.98	94.0
010	0.45	1.80	4.95	42.6	2.10	0.80	93.9
011	0.81	1.66	2.40	47.0	3.62	2.02	93.4
012	0.53	1.44	2.65	85.2	2.04	2.14	94.4
013	0.56	1.52	2.80	85.2	2.04	2.25	94.5

TOP SECRET GAMBIT

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PHOTOGRAPHIC EVALUATION

Rev 005 (Contd)

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.70	1.42	2.20	88.8	1.99	2.34	95.5
015	0.74	1.67	2.77	88.8	2.01	2.27	95.7

TOP SECRET GAMBIT
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TOP SECRET - GAMBIT
BYE
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COMMAND INFORMATION

Rev D06

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	18001.9	8.3	73 11N	124 27E	73 14.2N	124 31.3E	2.8359	2.841	15°F	1.0	- 18.4
002	18015.5	8.3			72 21.9N	123 24.7E	2.8642	2.863	15°A	1.0	- 18.4
003	18033.3	99.0	71 09N	122 04E	71 12.8N	122 07.4E	3.2275	3.238	0	1.5	0.7
004	18155.7	6.9	63 06N	115 56E	63 09.4N	115 58.4E	2.6982	2.703	15°F	1.0	- 27.7
005	18170.0	6.9			62 12.3N	115 27.4E	2.7525	2.753	15°A	1.0	- 27.7
006	18293.4	8.3	53 52N	111 54E	53 55.8N	111 55.7E	2.5167	2.517	15°F	2.0	33.3
007	18309.1	8.3			52 52.4N	111 33.9E	2.4671	2.471	15°A	2.0	33.3
008	18317.7	7.6	52 13N	111 21E	52 17.6N	111 22.4E	2.5673	2.569	15°F	2.0	32.6
009	18332.7	7.6			51 16.7N	111 02.8E	2.5167	2.520	15°A	2.0	32.6
010	18474.4	8.3	41 37N	108 24E	41 40.9N	108 25.2E	2.4427	2.444	15°F	2.5	37.6
011	18490.1	8.3			40 36.7N	108 09.8E	2.3708	2.373	15°A	2.5	37.6
012	18522.1	6.9	38 22N	107 39E	38 23.1N	107 39.4E	3.2275	3.235	15°F	3.0	0
013	18534.3	6.9			37 36.3N	107 25.2E	3.2275	3.233	15°A	3.0	0
014	18569.4	7.6	35 09N	106 57E	35 11.9N	106 58.6E	2.5673	2.571	15°F	2.5	34.7
015	18584.4	7.6			34 11.6N	106 46.1E	2.4918	2.496	15°A	2.5	34.7

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COMMAND INFORMATION

Rev D06 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	18609.1	6.9	32 26N	106 24E	32 30.6N	106 25.2E	3.1015	3.105	15°F	3.0	- 17.0
017	18621.3	6.9			31 40.7N	106 15.3E	3.1639	3.166	15°A	3.0	- 17.0
018	18652.4	6.9	29 29N	105 49E	29 33.4N	105 50.4E	3.1955	3.201	15°F	3.0	- 12.8
019	18664.6	6.9			28 43.4N	105 40.8E	3.2275	3.230	15°A	3.0	- 12.8
020	19041.0	50.0	02 54N	101 17E	02 58.7N	101 17.8E	3.1326	3.136	0	3.0	- 25.5

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TOP SECRET - GAMBIT

BYE

TOP SECRET GAMBIT

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Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D06

Acc/ PMM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						3.3	4.7	.18				--
002						3.4	3.7	.14				--
003A	197	5.0N	1.0E	1.0N	1.3W	3.3	3.8	.32				15,000
003B		4.1N	1.5E									15,000
003C	196	5.0N	1.6E									15,000
003D		4.5N	1.9E									15,000
003E		4.5N	1.0E									15,000
004A		3.0N	1.0E	0	1.0W	3.3	2.0	.18				15,000
005A		0	11.0E	.5S	2.0W	3.4	1.8	.02				15,000
006A	196	6.5N	1.5W	2.5S	0	3.4	1.1	.01				6,000
006B		3.5N	2.8W									6,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D06 (Contd)

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
007A	190	8.5N	1.4W	3.5N	2.8W	3.5	1.1	.16				6,000
007B		4.0N	0.5W									6,000
008C		3.3N	1.8E	2.8S	0	3.5	1.1	.07				6,000
009A	197	0.5N	1.3E	2.0S	2.0W	3.3	1.0	.13				850
009B	188	0	1.0E									850
009C		0	1.5E									850
010A		1.65N	1.0E	2.6S	1.7E	3.5	0.7	.05				3,500
011A		1.4N	2.1E	1.3S	1.7W	3.3	0.5	.09				3,500
012						3.4	0.6	.23				15,000
013						3.3	3.4	.17				15,000
014						2.3	0.7	.11				15,000
015						3.3	1.0	.17				15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only
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Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Key D06 (Contd)

Acc/ P&M No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
016						3.3	0.6	.11				15,000
017						3.3	0.7	.16				--
018						3.3	0.6	.17				--
019						3.3	0.5	.08				--
020						3.3	0.4	.11				--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Booklet Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D06

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	12.7	2.12	1.71	99.3
002	-	-	-	12.7	2.14	1.62	99.1
003	0.96	1.38	1.60	14.4	26.86	1.58	98.9
004	0.68	2.02	4.85	23.1	1.69	-	97.3
005	0.74	2.08	5.17	23.1	1.73	-	97.1
006	0.10	2.18	4.34	32.6	1.84	2.12	95.5
007	1.10	2.24	5.04	32.6	1.80	2.15	95.4
008	0.54	2.12	6.80	34.2	1.74	2.18	95.3
009	0.62	2.05	5.46	34.2	1.70	-	95.1
010	0.87	1.87	3.14	45.0	1.78	2.30	93.7
011	1.00	1.88	2.75	45.0	1.72	2.32	93.5
012	0.66	1.56	2.66	48.1	2.08	2.08	93.3
013	0.76	1.73	2.91	48.1	2.06	2.07	93.2

TOP SECRET GAMBIT
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Handle Via BYEMAN Controls Only
TOP SECRET - GAMBIT
BYE

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev 086 (Contd)

Acq. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	-	-	-	51.4	1.74	2.34	93.2
015	-	-	-	51.4	1.68	2.36	92.2
016	-	-	-	54.0	1.99	2.36	92.9
017	-	-	-	54.0	2.04	2.37	92.7
018	-	-	-	57.0	2.06	2.33	92.5
019	-	-	-	57.0	2.08	2.36	92.5
020	0.82	1.40	1.91	83.0	13.27	2.36	94.0

TOP SECRET GAMBIT

Handle via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D07

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	23308.4	8.3	72 47N	101 51E	72 52.9N	101 56.7E	2.8642	2.866	15°F	1.0	15.6
002	23322.0	8.3			72 00.5N	100 53.4E	2.8642	2.868	15°A	1.0	15.6
003	23377.6	99.0	68 17N	97 19E	68 23.3N	97 23.0E	3.2598	3.260	0	1.5	2.1
004	23515.1	4.6	59 09N	91 54E	59 15.5N	91 55.4E	3.0708	3.076	15°F	2.0	4.3
005	23543.4	6.2	57 15N	91 05E	57 21.6N	91 06.9E	2.8929	2.899	15°F	2.0	19.1
006	23557.0	6.2			56 26.9N	90 23.5E	2.8642	2.864	15°A	2.0	19.1
007	23588.2	10.0	54 15N	89 57E	54 21.0N	89 58.3E	2.8359	2.836	0	2.0	29.8
008	23731.5	7.6	44 33N	87 03E	44 39.8N	87 03.4E	3.0103	3.015	15°F	2.5	17.0
009	23744.4	7.6			43 47.3N	86 50.0E	3.0708	3.074	15°A	2.5	12.8
010	23773.6	30.0	41 42N	86 20E	41 47.9N	86 20.8E	3.4260	3.427	0	2.5	5.0
011	23930.1	50.0	31 02N	84 02E	31 09.3N	84 03.0E	3.5652	3.501	0	3.0	5.7

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE

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TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

PHOTO-MAP POSITIONING

Rev D07

Acq/ PMM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	202	6.3N	0.2E	6.4S	0	8.5	9.5	.06				5,000
001B	197	11.2N	0.6W									5,000
001C		11.4N	0.4W									6,000
002A	201	5.65N	1.0E	6.8S	0	8.6	8.8	.13				5,000
002B	199	6.25N	0.4E									5,000
002C		5.4N	0.5E									6,000
003A	194	9.0N	0.6W	3.0S	0	8.8	6.1	.01				15,000
003B		9.0N	0.6W									15,000
003C		10.0N	0.6W									15,000
003D		9.5N	0.6W									15,000
004A	192	8.2N	0	0	0.9E	9.0	2.9	.17				15,000
004B		8.5N	0									15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Approved for Release: 2018/09/11 C05103024
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Rev D07 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg)			Map Accuracy (± ft)
005A	190	6.8N	1.4W	4.6N	0.2W			.21				2,000
005B		7.2N	0.7W									2,000
006A	190	4.2N	0.9W	5.1N	1.9E	9.1	2.2	.01				2,000
006B		5.6N	0.2W									2,000
007A		8.3N	0.8E	2.5N	1.2W	9.1	2.2	.00				3,000
008A		8.8N	1.7W	4.5N	0	9.2	1.3	.16				15,000
009						9.2	1.3	.11				--
010						8.8	1.2	.03				--
011						9.5	1.0	.12				--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Report Section.

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT
BYE

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D07

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.62	1.54	2.71	13.2	2.14	1.80	99.1
002	0.74	1.36	1.98	13.2	2.14	1.78	98.9
003	0.53	1.77	3.84	17.4	27.30	1.93	98.2
004	0.41	2.02	6.66	27.2	1.38	-	96.5
005	0.30	2.10	13.53	29.1	1.66	1.57	96.1
006	0.38	2.05	8.71	29.2	1.64	1.38	95.9
007	-	-	-	31.8	2.52	2.13	95.6
008	0.90	2.26	6.62	42.0	2.10	-	94.0
009	1.41	2.32	4.68	42.0	2.15	-	93.9
010	0.84	1.85	3.15	44.4	8.83	-	93.6
011	0.48	2.24	13.14	55.1	15.14	2.18	92.6

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D08

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Ephemeris Lat Deg Min	Best Ephemeris Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mir For Pos.	Crab Pos.	Roll Angle
001	28494.1	8.3	79 52N	95 15E	79 53.4N	95 21.1E	2.8359	2.833	15°F	0.5	+ 14.9
002	28508.3	8.3			79 06.8N	92 51.1E	2.8642	2.867	15°A	0.6	+ 14.8
003	28589.1	7.6	74 08N	81 36E	74 10.1N	81 37.0E	2.9805	2.978	15°F	1.0	+ 3.5
004	28602.0	7.6			73 20.8N	80 27.9E	2.9805	2.991	15°A	1.0	+ 3.5
005	28618.9	99.0	72 14N	79 05E	72 15.8N	79 05.5E	3.2275	3.231	0	1.0	0.7
006	28869.1	8.3	55 39N	68 22E	55 41.6N	68 22.2E	2.8929	2.900	15°F	2.0	+ 18.4
007	28882.7	8.3			54 46.7N	68 00.8E	2.8642	2.865	15°A	2.0	+ 18.4
008	28915.2	7.6	52 33N	67 16E	52 35.3N	67 16.4E	2.9510	2.952	15°F	2.5	+ 15.6
009	28928.1	7.6			51 43.0N	66 59.4E	2.9218	2.925	15°A	2.5	+ 15.6
010	28955.5	5.1	49 50N	66 25E	49 52.0N	66 34.8E	2.7525	2.753	15°A	2.0	+ 30.5
011	28983.4	5.1	47 57N	65 52E	47 58.8N	65 51.7E	3.0708	3.072	15°F	2.5	+ 12.1
012	29004.3	7.6	46 32N	65 28E	46 33.9N	65 28.1E	2.5167	2.520	15°F	1.5	+ 37.6
013	29019.3	7.6			45 33.0N	65 11.8E	2.5673	2.567	15°A	1.5	+ 37.6
014	29091.3	6.8	40 38N	63 59E	40 39.8N	63 59.0E	2.2334	2.236	15°F	2.5	42.6
015	29107.1	6.8	39 33N	63 44E	39 35.3N	63 44.1E	2.1894	2.191	15°A	1.5	42.2

Approved for Release: 2018/09/11 C05103024

Controls Only

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev 008 (Contd)

Acs No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Ephemeris Lat Deg Min	Best Ephemeris Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	29161.8	6.9	35 51N	62 55E	35 53.3N	62 55.3E	3.1015	3.108	15°F	2.5	- 14.9
017	29173.7	6.9					3.1326	3.136	15°A	2.5	- 14.9

TOP ~~SECRET~~ - GAMBIT

Handle Via BYEMAN
Controls Only

Approved for Release: 2018/09/11 C05103024

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Handle Via BYEMAN Controls Only

PHOTO-MAP POSITIONING

Rev D08

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) [illegible]	Attitude Error (deg) Y	Map Accuracy (± ft)
001						7.5	38.0	.10				--
002						7.8	47.1	.10				--
003A	200	8.3N	0.3E	9.1S	0.3E	8.6	12.4	.08				7,000
003B		7.7N	0.3E									7,000
004A	200	6.3N	0	9.2S	0.3E	8.6	11.7	.35				7,000
004B		5.9N	0									7,000
#005A	196	8.5N	7.0W	7.4S	1.0W	8.7	10.0	.11				7,000
005B		10.9N	1.2E									10,000
005C		8.2N	0									--
006						9.1	3.0	.24				--
007						9.1	1.7	.03				--

#Questionable BM

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

~~TOP SECRET~~ - GAMBIT

BYE [redacted]

~~TOP SECRET~~ GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D08 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
008						9.1	2.6	.03				--
009						9.0	2.5	.11				--
010						9.0	12.3	.02				--
011						9.0	2.1	.04				--
012						9.0	2.0	.13				--
013						9.1	2.0	.01				--
014A	190	8.2N	0.8W	7.9S	1.5E	9.1	1.6	.07				1,300
014B		8.8N	0.6W									1,300
015A		5.6N	1.4E	6.3S	0.4W	9.0	1.6	.07				1,300
016A		6.8N	0.5W	7.2S	0.5W	9.1	1.5	.21				6,000
017A		5.2N	0	3.0S	1.0W			.11				6,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Replot Section.

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE 2[illegible]-69

PHOTOGRAPHIC EVALUATION

Rev D08

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.65	0.70	1.07	5.7	2.12	-	100.7
002	0.54	0.60	1.09	5.7	2.14	-	100.5
003	0.69	1.29	1.95	11.8	2.07	-	99.6
004	0.57	1.14	1.98	11.8	2.07	-	99.4
005	0.59	1.37	2.46	13.4	26.86	1.87	99.2
006	-	-	-	30.9	2.17	1.90	96.2
007	-	-	-	30.9	2.14	1.90	96.1
008	1.27	1.92	2.10	34.0	2.05	-	95.7
009	1.24	1.95	2.29	34.0	2.02	-	95.6
010	1.53	2.04	2.01	35.8	1.31	-	95.3
011	-	-	-	38.6	1.51	2.04	95.0
012	1.57	2.20	2.61	40.1	1.70	-	94.8
013	1.57	2.18	2.50	40.1	1.74	-	94.6

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D08 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	1.59	2.16	2.35	46.2	1.32	-	94.0
015	1.02	1.43	1.56	46.1	1.29	-	93.9
016	1.15	1.54	1.54	50.8	1.99	-	93.5
017	0.41	0.80	1.54	50.8	2.01	1.23	93.4

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only
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Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D09

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	33889.1	6.9	74 11N	59 43E	74 12.9N	59 36.5E	2.3241	2.325	15°F	0.5	- 37.6
002	33905.5	6.9			73 10.2N	58 08.7E	2.3703	2.387	15°A	0.5	- 37.6
003	33979.5	7.6	68 20N	53 10E	68 22.0N	53 11.1E	3.0103	3.014	15°F	1.5	4.3
004	33992.4	7.6			67 31.1N	52 32.5E	3.0103	3.019	15°A	1.5	4.3
005	34102.2	8.9	60 11N	48 11E	60 13.7N	48 11.1E	2.8078	2.813	15°F	2.0	22.0
006	34116.4	6.9	59 14N	47 44E	59 16.7N	47 45.0E	2.8078	2.813	15°A	1.5	22.7
007	34141.6	9.2	57 33N	47 01E	57 35.3N	47 01.4E	2.8078	2.813	15°F	2.0	22.7
008	34155.7	7.3	56 36N	46 38E	56 38.5N	46 38.6E	2.7800	2.786	15°A	1.5	22.7
009	34174.1	7.6	55 22N	46 10E	55 24.3N	46 10.3E	2.3011	2.303	15°F	2.0	39.7
010	34191.1	7.6			54 15.3N	45 45.3E	2.2558	2.254	15°A	2.0	39.7
011	34217.6	9.9	52 26N	45 08E	52 28.3N	45 08.7E	2.7525	2.754	15°F	2.5	24.8
012	34231.4	10.4	51 30N	44 50E	51 32.3N	44 50.4E	2.7252	2.727	15°A	2.0	26.2
013	34256.4	10.2	49 49N	44 19E	49 51.3N	44 19.1E	2.3011	2.305	15°F	2.0	39.7
014	34271.5	10.9	48 47N	44 01E	49 10.5N	44 06.9E	2.2783	2.281	15°A	1.5	41.1
015	34337.2	5.4	44 20N	42 48E	44 23.2N	42 48.1E	2.4671	2.466	0	2.0	40.4

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
BYE 2

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D09 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	34363.2	9.0	42 34N	42 21E	42 57.3N	42 26.7E	3.1015	3.107	15°F	2.5	- 12.1
017	34375.4	9.0			41 47.5N	42 09.5E	3.1326	3.133	15°A	2.5	- 12.1

TOP SECRET - GAMBIT
A-28
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

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PHOTO-MAP POSITIONING

Rev D09

Acc/ PSM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						16.5	24.1	.04				--
002						16.6	21.4	.70				--
003A	195	16.2N	.3E	16.5S	.8W	17.0	13.1	.12				5,500
003B		16.7N	.5E									5,500
004A	193	14.0N	.1W	17.0S	.3E	17.0	13.7	.29				5,500
004B		13.5N	.5E									5,500
005A	194	18.0N	.3W	12.5S	2.6W	17.3	7.3	.18				3,000
005B		17.0N	0									3,000
006A	194	15.0N	.4W	9.7S	4.5W	17.3	6.9	.00				3,000
006B		15.0N	.35W									3,000
007A	195	18.0N	0.3W	13.7S	4.7W	17.3	6.1	.18				700
007B		19.0N	0.7W									700

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTO-MAP POSITIONING

Rev D09 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
008A	194	15.7N	0.3W	14.3S	7.2W	17.2	5.8	.22				700
008B		15.6N	0.3W									700
#009A	190			18.3S	0.4W	17.4	5.5	.35				1,100
009B		15.6N	0.1W									1,100
009C		11.3N	0									1,100
#010A	190			19.4S	2.2W	17.4	5.3	.08				1,100
010B		12.5N	0.4W									1,100
010C		13.4N	0									1,100
011A	192	16.5N	1.5W	15.2S	0.8E	17.2	4.8	.05				900
011B		15.6N	1.5W									900
011C		16.2N	1.5W									900

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Handle Via BYEMAN Controls Only

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Handle Via BYEMAN Controls Only

PHOTO-MAP POSITIONING

Rev D09 (Contd)

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
012A	192	14.0N	0.6W	15.3S	0.6W	17.1	4.5	.07				900
012B		14.7N	0.6W									900
012C		14.0N	0.6W									900
013A	196	15.5N	0.5E	11.5S	4.0W	17.4	4.3	.03				1,000
013B		16.4N	0.1E									1,000
014A	196	14.6N	0.4W	5.8S	4.6W	17.9	4.5	.12				1,000
014B		14.6N	0.7W									1,000
015						17.6	3.5	.04				--
016						37.5	3.4	.18				--
017						17.4	3.1	.01				--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

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TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D09

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.43	1.58	4.02	12.0	1.41	1.39	99.5
002	0.35	1.41	4.14	12.0	1.44	1.44	99.3
003	0.67	1.49	2.49	18.0	2.10	-	98.4
004	0.57	1.51	2.95	18.0	2.10	-	98.2
005	0.56	1.61	3.34	26.4	2.24	1.86	96.9
006	0.47	1.50	3.39	26.5	1.77	1.80	96.8
007	0.55	1.81	4.30	29.1	2.31	1.92	96.5
008	0.43	1.86	5.59	29.1	1.84	1.90	96.3
009	0.08	1.97	2.82	31.5	1.52	-	96.1
010	0.86	2.03	4.02	31.5	1.49	-	95.9
011	0.69	1.95	4.23	34.3	2.41	1.86	95.6
012	0.89	1.99	3.62	34.3	2.50	1.60	95.5
013	1.46	2.05	2.16	37.1	2.02	-	95.2

TOP SECRET - GAMBIT
A-22
Handle Via BYEMAN
Control Only

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Control Only

Approved for Release: 2018/09/11 C05103024

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Rev D09 (Contd)

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	1.60	2.13	2.18	36.9	2.13	-	95.0
015	-	-	-	42.0	1.20	2.07	94.4
016	-	-	-	44.2	2.53	2.06	94.2
017	-	-	-	44.2	2.56	2.06	94.1

TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only
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TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D10

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	39077.1	7.6	80 53N	55 36E	81 55.5N	55 23.4E	2.5167	2.517	15°F	0	- 30.5
002	39092.1	7.6			80 06.5N	52 01.8E	2.5167	2.519	15°A	0	- 30.5
003	39252.0	8.3	70 09N	32 41E	70 12.1N	32 43.2E	2.8929	2.886	15°F	1.5	14.9
004	39263.5	9.0	69 24N	31 59E	69 27.1N	31 57.2E	2.8642	2.867	15°A	1.0	15.6
005	39282.7	5.5	68 09N	30 55E	68 11.7N	30 41.3E	2.6189	2.620	15°A	1.0	27.7
006	39368.4	5.3	62 28N	27 14E	62 31.3N	27 14.7E	2.3011	2.303	0	1.0	44.0
007	39405.5	6.4	59 59N	26 00E	60 02.7N	26 00.4E	2.8929	2.898	15°F	1.5	- 19.1
008	39416.7	6.4	59 15N	25 39E	59 38.5N	25 26.5E	2.9218	2.922	15°A	2.0	- 19.9
009	39447.2	4.8	57 12N	24 47E	57 15.0N	24 47.8E	3.2275	3.232	0	2.0	- 14.9
010	39457.8	5.5	56 29N	24 30E	56 32.3N	24 30.9E	2.9218	2.930	15°F	1.5	- 18.4
011	39491.5	8.3	54 13N	23 40E	55 36.5N	23 47.5E	2.1678	2.173	15°F	2.0	43.2
012	39509.3	8.3			No Coords		2.1040	2.107	15°A	2.0	43.2
013	39528.5	5.7	51 44N	22 49E	51 46.6N	22 49.6E	2.8078	2.808	15°A	2.0	22.7
014	39544.2	5.1	50 40N	22 29E	50 43.1N	22 29.5E	2.1678	2.170	15°A	1.0	44.0
015	39568.4	7.6	49 02N	21 59E	49 04.9N	21 59.2E	3.0103	3.014	15°F	2.5	13.5

TOP SECRET - GAMBIT
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Handle Via Byeman Controls Only

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COMMAND INFORMATION

Rev D10 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	39581.3	7.6			No Coords.		2.9805	2.985	15°A	2.5	13.5
017	39622.2	6.9	45 23N	20 59E	45 26.3N	20 59.2E	3.0708	3.080	15°F	2.5	- 14.2
018	39634.4	6.9			No Coords		3.1015	3.108	15°A	2.5	- 14.2
019	39687.8	6.9	40 57N	19 53E	41 00.1N	19 52.7E	3.1326	3.138	15°F	2.5	- 9.9
020	39699.8	6.9			No Coords		3.1639	3.167	15°A	2.5	- 9.9

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev D10

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						80.5	86.0	.01				--
002						21.4	26.4	.09				--
003A	195	32.4N	1.0W	23.2S	0.3W	25.0	22.5	.23				450
003B		26.0N	0.6W									450
004A	195	23.1N	1.1W	22.5S	0.2E	25.1	16.8	.10				450
004B		22.7N	0.7W									450
005A	195	23.7N	0.8W	22.1S	0	25.2	2.7	.04				2,500
005B		23.2N	0									2,500
006A	187	24.6N	0.2E	23.7S	1.0E	25.5	12.2	.03				850
007A	181	25.7N	1.3W	23.3S	0.2W	34.4	10.3	.18				500
007B		26.1N	0.8W									500
008A	183	25.0N	0.6E	22.4S	0	46.4	3.6	.01				500

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Cockpit Section.

TOP SECRET · GAMBIT

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TOP SECRET - GAMBIT

PHOTO-MAP POSITIONING

Rev D10 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
008B		24.4N	0.3E									500
009A	192	25.5N	0.4E	22.3S	0.5E	25.7	8.8	.14				900
009B		25.5N	0.4E									900
010A	190	26.5N	0.7W			25.7	8.6	.28				500
010B		26.4N	1.0W	23.6S	0.6E							500
011A	183	25.8N	1.6W	26.7S	1.5E	36.0	14.9	.24				500
011B		24.4N	0.7E									500
012A	183	22.3N	0.6W	26.0S	1.8W	25.6	8.6	.14				--
012B		24.1N	1.5W									--
013						25.8	6.8	.00				--
014						25.9	6.5	.10				--
015A	191	25.4N	1.3W	26.6S	0.3E	25.8	5.4	.13				800

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

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Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev D10 (Contd)

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat.	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
015B		25.0N	1.3W									800
016A	192	23.5N	1.7W	26.8S	1.7W	25.8	5.4	.15				800
016B		23.3N	1.7W									800
017A	190	25.4N	1.6W	23.1S	09.E	34.2	5.4	.30				700
017B		25.4N	1.4W									700
018A	189	22.5N	0.8W	21.5S	1.6W	34.2	5.4	.21				700
018B		22.6N	0.7W									700
019A	191	25.1N	0.5W	25.1S	0.7E	26.0	4.4	.11				600
019B		25.2N	0.7W									600
020A	190	22.5N	0.5W	22.8S	1.8W	26.0	4.4	.10				600
020B		22.8N	0.6W									600

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only
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TOP SECRET GAMBIT

PHOTOGRAPHIC EVALUATION

Rev D10

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	4.8	1.70	0.62	100.6
002	-	-	-	4.7	1.70	0.50	100.5
003	0.52	1.60	3.18	16.4	2.17	0.99	98.6
004	0.47	1.75	3.96	16.4	2.31	0.98	98.5
005	0.47	1.75	3.44	17.5	1.32	-	98.3
006	0.61	2.06	5.63	28.3	1.08	-	97.2
007	0.51	1.96	5.09	26.7	1.71	-	96.8
008	0.46	1.91	4.98	26.6	1.73	-	96.7
009	0.45	2.01	5.93	29.1	1.52	-	96.3
010	0.61	2.13	6.49	30.3	1.51	-	96.2
011	1.13	2.31	6.12	32.8	1.54	-	95.8
012	1.26	2.23	4.11	32.8	1.49	2.22	95.6
013	0.65	2.19	7.21	34.7	1.49	2.21	95.4

TOP SECRET GAMBIT
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PHOTOGRAPHIC EVALUATION

Rev D10 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	-	-	-	35.2	0.97	2.26	95.2 [a]
015	1.07	1.95	2.80	37.9	2.10	2.11	95.0
016	1.12	2.00	2.90	37.9	2.07	2.04	94.9
017	0.87	1.30	1.61	41.5	1.97	2.12	94.5
018	0.93	1.30	1.51	41.5	1.99	2.14	94.4
019	0.30	1.83	8.56	46.0	2.01	2.10	93.9
020	0.35	1.77	6.50	46.0	2.04	2.23	93.8

TOP SECRET GAMBIT

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TOP SECRET GAMBIT
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COMMAND INFORMATION

Rev D11

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle.
001	44254.7	8.0	84 14N	97 39E	84 11.4N	98 06.9E	3.1326	3.140	0	0	- 0.7
002	44305.1	8.0	83 55N	63 53E	83 55.6N	64 32.4E	3.1326	3.188	0	0	- 0.7
003	44371.0	8.0	81 13N	35 15E	81 16.3N	35 41.0E	3.1639	3.165	0	0.5	- 0.7
004	44404.8	8.0	79 22N	27 08E	79 25.8N	26 19.3E	3.1639	3.171	0	0.5	0
005	44438.7	8.0	77 21N	21 19E	77 24.8N	21 29.8E	3.1955	3.201	0	0.5	0
006	44480.5	8.0	74 46N	16 17E	74 49.5N	16 23.6E	3.1955	3.204	0	1.0	0
007	44527.0	8.0	71 48N	12 18E	71 51.3N	12 21.1E	3.2598	3.231	0	1.0	- 1.4
008	44571.7	8.0	68 53N	09 27E	68 56.9N	09 29.9E	3.2275	3.231	0	1.0	- 0.7
009	44986.6	6.9	41 01N	02 12W	41 05.8N	02 11.1W	2.6189	2.620	15°F	2.0	- 35.4
010	45000.9	6.9			40 07.4N	02 24.7W	2.6982	2.701	15°A	2.0	- 35.4
011	45059.7	8.3	36 03N	03 19W	36 07.3N	03 17.8W	2.4427	2.446	15°F	2.5	37.6
012	45075.4	8.3			35 03.3N	03 31.4W	2.3474	2.349	15°A	2.5	37.6
013	45123.0	7.6	31 44N	04 12W	31 48.6N	04 11.0W	2.8451	2.849	15°F	3.0	31.9
014	45138.0	7.6			30 47.1N	04 23.1W	2.5419	2.545	15°A	3.0	31.9

Handle Via BYEMAN
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TOP SECRET GAMBIT
BYE

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PHOTOGRAPHIC EVALUATION

Rev D11

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	0.4	2.30	-	101.9
002	-	-	-	0.8	2.30	-	101.4
003	0.48	0.55	1.14	3.8	2.33	0.59	100.7
004	0.70	0.95	1.35	5.8	2.33	1.45	100.3
005	0.98	1.50	1.83	7.9	2.35	1.74	99.9
006	-	-	-	10.6	2.35	1.75	99.4
007	-	-	-	13.7	2.38	1.37	98.8
008	-	-	-	16.8	2.38	1.69	98.2
009	0.77	1.63	2.58	45.5	1.63	2.30	93.7
010	0.76	1.84	3.39	45.5	1.69	2.38	93.6
011	0.74	1.55	2.44	50.6	1.78	2.21	93.2
012	0.89	1.42	1.80	50.6	1.70	2.35	93.1
013	1.37	1.95	2.01	54.9	1.80	-	92.9
014	1.67	2.00	1.58	54.9	1.72	-	92.9

TOP SECRET - GAMBIT

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Handle Via [illegible] Controls Only

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Handle Via [illegible] Controls Only

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COMMAND INFORMATION

Rev D12

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	49612.9	5.0	83 42N	37 24E	83 44.7N	38 04.7E	3.1326	3.138	0	0	0
002	49680.9	5.0	80 42N	10 29E	80 46.5N	10 48.5E	3.1639	3.167	0	0.5	1.4
003	49748.2	5.0	76 47N	02 04W	76 51.7N	01 54.5W	3.1955	3.200	0	0.5	1.4
004	49827.0	5.0	71 48N	09 48W	71 53.0N	09 42.7W	3.2275	3.237	0	1.0	1.4
005	49903.4	5.0	66 48N	14 17W	66 53.5N	14 13.6W	3.2598	3.265	0	1.5	1.4
006	49978.6	5.0	61 48N	17 16W	61 53.9N	17 15.9W	3.2924	3.298	0	1.5	0.7
007	50053.3	5.0	56 48N	19 33W	56 53.9N	19 31.6W	3.3253	3.329	0	2.0	2.1
008	50127.6	5.0	51 48N	21 20W	51 53.7N	21 18.7W	3.3585	3.360	0	2.0	2.1
009	50201.5	5.0	46 48N	22 49W	46 53.8N	22 48.0W	3.3921	3.399	0	2.5	2.1
010	50275.2	5.0	41 48N	24 06W	41 53.9N	24 05.1W	3.3921	3.398	0	2.5	3.5
011	50348.7	5.0	36 48N	25 14W	36 53.9N	25 13.8W	3.4260	3.431	0	3.0	2.1
012	50422.0	5.0	31 49N	26 16W	31 54.3N	26 15.4W	3.4260	3.432	0	3.0	1.4
013	50495.3	5.0	26 49N	27 14W	26 54.1N	27 12.9W	3.4260	3.431	0	3.0	1.4
014	50568.5	5.0	21 48N	28 08W	21 54.0N	28 07.1W	3.4260	3.431	0	3.0	2.8
015	50641.6	5.0	16 48N	29 00W	16 54.1N	28 58.0W	3.4260	3.431	0	3.0	2.8

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

[illegible] (cont'd)

Exp No.	Shutter Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	50714.6	5.0	11 48N	29 49W	11 53.6N	29 48.8W	3.4260	3.431	0	3.5	- 3.5
017	50787.6	5.0	06 48N	30 38W	06 54.0N	30 37.5W	3.3921	3.400	0	3.5	- 3.5

TOP SECRET - GAMBIT

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PHOTOGRAPHIC EVALUATION

Rev D12

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	1.1	1.52	-	101.2
002	0.40	0.76	1.74	4.3	1.53	-	100.5
003	0.73	1.34	2.06	8.5	1.55	-	99.7
004	-	-	-	13.7	1.57	1.80	98.8
005	-	-	-	18.9	1.59	0.54	97.8
006	-	-	-	24.0	1.61	1.84	96.9
007	-	-	-	29.1	1.63	-	96.0
008	-	-	-	34.2	1.65	2.26	95.2
009	-	-	-	39.2	1.67	2.27	94.4
010	-	-	-	44.3	1.67	-	93.8
011	-	-	-	49.3	1.69	1.86	93.3
012	-	-	-	54.3	1.69	2.06	92.9
013	-	-	-	59.3	1.69	-	92.7

TOP SECRET GAMBIT
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Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only

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PHOTOGRAPHIC EVALUATION

Mav 518 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	-	-	-	64.3	1.69	2.18	92.7
015	-	-	-	69.3	1.69	2.36	92.9
018	-	-	-	74.3	1.69	2.32	93.3
017	-	-	-	79.3	1.67	2.30	93.9

TOP SECRET - GAMMA

Controls Only

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D15

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	66097.5	3.0	47 15N	88 58W	47 12.1N	88 59.1W	3.1326	3.135	15°F	2.5	- 2.8
002	66102.9	20.6	46 53N	89 04W	46 50.2N	89 05.2W	3.3921	3.405	0	2.5	- 1.4
003	66125.7	3.0	45 20N	89 29W	45 17.5N	89 30.0W	3.1326	3.136	15°A	2.5	- 1.4
004	66148.3	4.0	43 49N	83 53W	43 45.5N	89 53.7W	3.0404	3.043	15°F	2.5	18.5
005	66154.6	4.0	43 23N	89 59W	43 19.8N	90 00.1W	3.2275	3.231	0	2.5	14.2
006	66161.0	4.0	42 57N	90 06W	42 53.8N	90 06.6W	3.0103	3.011	15°A	2.5	14.3
007	66181.0	6.0	41 35N	90 26W	41 32.2N	90 26.3W	3.3921	3.401	0	2.5	- 2.8
008	66213.9	3.0	39 21N	90 57W	39 18.1N	90 57.8W	2.8359	2.835	15°F	3.0	24.1
009	66220.7	3.0	38 53N	91 03W	38 50.4N	91 03.8W	3.1326	3.131	0	2.5	19.9
010	66227.0	3.0	38 27N	91 09W	38 24.6N	91 09.6W	3.0103	3.012	15°A	2.5	15.6
011	66270.9	4.0	35 28N	91 48W	35 25.3N	91 48.4W	3.1639	3.165	15°F	3.0	- 3.5
012	66279.1	4.0	34 56N	91 55W	34 51.9N	91 55.5W	3.3585	3.365	0	3.0	- 12.8
013	66287.6	4.0	34 20N	92 02W	34 17.1N	92 02.7W	3.1015	3.099	15°A	3.0	- 17.0
014	66311.2	6.0	32 43N	92 22W	32 40.6N	92 22.8W	3.4250	3.426	0	3.0	0.7

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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PHOTO-MAP POSITIONING

Rev D15

Acc/ P&M No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	192	0.7S	0.7W	2.9S	0	0	0	.08				450
002A	190	1.4S	0.5E	3.0N	0.6E	0	0	.38				450
002B		1.3S	0			0	0					450
003B	190	2.8S	0	3.0S	0.6W	0	0	.11				450
004A		0.4N	0.5W			0	0	.08				700
004B		0	0.5W			0	0					700
005A	190	1.6S	0.5E	3.0S	0	0	0	.11				700
005B		1.0S	0.5E									700
006A		1.6S	0			0	0	.02				700
006B		1.0S	0									700
007A	190	0.6S	0.6W	3.1S	0.2W	- 0.1	0	.26				850

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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Handle Via BYEMAN Controls Only

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TOP SECRET - GAMBIT

PHOTO-MAP POSITIONING

Rev D15 (Contd)

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error		*Predict Error		M.C.D. Error (Δ in min)		Film Velocity Error (%)	Attitude Error (deg)			Map Accuracy (± Ft)
		In-Track (NM)	Cross Track (NM)	In-Track (NM)	Cross Track (NM)	Lat	Long		P	R	Y	
008A	191	2.2S	0.8E	3.3S	1.1E	0	0	.03				650
008B		1.4S	0.4W									650
009A	191	3.5S	0.2W	3.2S	0.7W	0	0	.05				650
009B		3.2S	0.6E									650
010A	192	4.0S	0.3W	3.0S	0.5W	0	0	.06				650
010B		4.2S	0.8W									850
011A	189	2.0S	1.0W	3.2S	0	- 0.1	0	.04				750
011B		1.5S	1.0W									750
012A	196	2.5S	1.8W	3.5S	0.2E	0	0	.19				750
012B		1.0S	0.6W									750
013A	185	3.0S	1.3W	3.5S	0.1E	0	0	.00				750
013B		2.0S	1.0W									750

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev 015 (Contd)

Acc/ PSM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
014A	187	0.7S	0	3.0S	0.4E	0	0	.00				450
014B		0.2N	0.4E									450

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTOGRAPHIC EVALUATION

Rev D15

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.39	2.22	11.90	39.4	0.99	-	94.5
002	0.40	2.20	10.56	39.4	6.03	-	94.4
003	0.60	2.20	7.75	40.5	0.99	-	94.2
004	0.64	2.24	8.23	42.9	1.21	-	94.0
005	0.72	2.24	7.62	42.9	1.30	-	94.0
006	0.64	2.26	8.65	42.9	1.19	-	93.9
007	0.60	1.48	2.84	44.7	1.95	2.20	93.8
008	0.96	2.16	5.57	47.4	0.87	-	93.5
009	0.74	1.96	4.69	47.4	0.99	-	93.5
010	0.66	2.10	6.88	47.4	0.94	-	93.5
011	0.54	1.88	5.29	51.3	1.27	-	93.2
012	0.57	1.92	5.37	51.4	1.37	-	93.2
013	0.94	2.00	3.99	51.6	1.24	-	93.1
014	0.73	1.92	4.41	53.6	1.97	-	93.0

TOP SECRET GAMBIT

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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COMMAND INFORMATION

Rev D15

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	71385.5	6.9	48 05N	110 50W	48 00.3N	110 50.9W	3.1015	3.109	15°F	2.5	- 9.9
002	71397.7	6.9			47 10.7N	111 04.8W	3.1326	3.133	15°A	2.5	- 9.9
003	71430.5	7.0	45 02N	111 40W	44 52.4N	111 40.6W	2.9510	2.951	0	2.0	26.9
004	71470.8	6.9	42 18N	112 21W	42 13.3N	112 21.7W	3.1639	3.162	15°F	2.5	- 2.1
005	71483.0	6.9			41 23.6N	112 33.7W	3.1639	3.161	15°A	2.5	- 2.1
006	71504.5	10.0	33 12N	114 21W	33 0.74N	114 22.2W	3.4260	3.427	0	3.0	- 1.4

TOP SECRET GAMBIT

Handle Via BYEMAN Control System Only

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Handle Via BYEMAN Cgntrols Only

PHOTO-MAP POSITIONING

Rev D16

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						0	0	.02				
002						0	0	.01				
003						0	0	.00				
004						0	0.1	.06				
005						0	0	.09				
006A	188	1.0S	1.5W	4.8S	1.4E	0	0	.03				3,000
006B		1.9S	1.0W									3,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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PHOTOGRAPHIC EVALUATION

Rev D16

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	38.6	1.99	2.12	94.5
002	-	-	-	38.6	2.01	2.10	94.4
003	-	-	-	41.3	1.90	2.24	94.1
004	-	-	-	44.5	2.04	2.24	93.8
005	-	-	-	44.5	2.04	2.24	93.7
006	0.67	1.86	3.80	53.2	3.12	2.05	93.0

TOP SECRET - GAMBIT

Controls Only

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COMMAND INFORMATION

Rev D17

Seq No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mir-ror Pos.	Crab Deg.	Roll Angle
001	77631.4	30.0	16 27S	144 52W	16 34.4W	144 52.8W	3.0708	3.086	0	3.0	- 17.7

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PHOTO-MAP POSITIONING

[illegible]

[illegible] No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
[illegible]A	192	0.5S	3.2W	0.3S	1.0E	0.1	0	.49				15,000
[illegible]		1.0S	1.0W									--

*These data should be corrected by the amount shown in the [illegible] (Position Correlation Data) column.
[illegible] in [illegible] Section.

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PHOTOGRAPHIC EVALUATION

Rev D17

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.20	1.88	2.20	77.0	7.88	2.86	99.8

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COMMAND INFORMATION

[redacted]

Arc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Epheremis Lat Deg	Best Epheremis Lat Min	Best Epheremis Long Deg	Best Epheremis Long Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
[redacted]	0684.0	40.0	66	46N	168	56W	66	44.4N	168	56.3W	2.6715	2.672	0	1.0	- 36.2

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PHOTO-MAP POSITIONING

Rev D19

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	200	0	2.0W	1.0S	0.2W	0	0	.02				15,000
001B		1.2S	0.7E									5,000
001C		0.5S	0.2W									--
001D		1.2S	0.3W									--
001E		0.3S	0.5W									--
001F		0	1.3W									--

*This data should be [illegible] by the [illegible] in the M.C.D. ([illegible]) column. See detailed explanation in [illegible].

TOP SECRET GAMBIT

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TOP SECRET GAMBIT

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PHOTOGRAPHIC EVALUATION

Rev D19

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.96	1.68	2.19	19.2	9.04	-	96.8

Handle via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D20

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	5847.6	7.6	70 24N	172 02E	70 21.8N	172 00.4E	3.0103	3.015	15°F	1.0	4.3
002	5860.5	7.6			70 12.3N	171 12.4E	3.0103	3.015	15°A	1.0	4.3
003	5959.2	50.0	63 02N	166 39E	63 00.1N	166 38.0E	3.3253	3.334	0	1.5	2.8
004	6028.0	7.6	58 27N	164 25E	58 24.1N	164 24.0E	2.4918	2.496	15°F	1.0	36.8
005	6043.0	7.6			57 23.6N	163 58.9E	2.5419	2.542	15°A	1.0	36.8
006	6058.4	6.3	56 24N	163 35E	56 21.4N	163 34.1E	3.1326	3.136	0	1.5	21.3
007	6096.7	6.9	53 49N	162 38E	53 46.9N	162 37.3E	2.2334	2.235	15°F	1.3	44.0
008	6113.1	6.9			52 40.5N	162 14.8E	2.3708	2.377	15°A	1.0	41.8

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PHOTO-MAP POSITIONING

Rev 328

Acc/ Cart No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						0.3	0.8	.16				--
002						41.3	0.2	.16				--
003A	124	0	0	3.0S	2.0W	0.4	0.5	.26				15,000 6,000
003B		2.0W	0									15,000 6,000
003C		1.0W	1.0E									15,000
003D		0	1.0E									15,000
003E		0	2.0E									6,000
003F		0	2.0E									6,000
003G		1.3S	0									7,000
004						0.3	0.2	.16				--
005						0.3	0.3	.00				--

*This data should be corrected by the amount shown in the M.C.D. (Mincips Correlation Data) column.
See detailed explanation in Geoplot Section.

Controls Only

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PHOTO-MAP POSITIONING

Rev D20 (Contd)

Acc/ PøM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± Ft)
006						0.2	0.2	.15				—
007A		0.7S	1.3W	3.0S	1.5E	0.4	0.2	.07				6,000
007B		1.2S	0									—
008A		0.2N				0.3	0.3	.26				6,000
008B		1.2S										—

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTOGRAPHIC EVALUATION

[redacted]	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
[redacted]	0.53	1.12	2.06	15.9	3.01	1.48	97.4
[redacted]	0.57	1.31	2.38	16.0	3.01	1.23	97.3
[redacted]	1.05	1.88	2.52	23.1	3.33	-	96.1
[redacted]	-	-	-	28.3	2.49	-	95.3
[redacted]	-	-	-	28.3	2.54	-	95.1
[redacted]	-	-	-	29.8	3.13	1.80	94.9
[redacted]	0.69	2.11	5.68	33.0	2.23	-	94.5
[redacted]	0.76	2.26	7.09	32.9	2.37	-	94.5

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Controls Only

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COMMAND INFORMATION

Rev D21

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	11137.7	6.9	70 59N	150 32E	70 55.4N	150 29.2E	2.6189	2.617	15°F	0.5	- 29.8
002	11152.0	6.9			69 59.3N	149 33.7E	2.6451	2.645	15°A	0.5	- 29.8
003	11181.2	99.0	68 08N	147 56E	68 04.7N	147 54.6E	3.2924	3.296	0	1.5	- 1.4
004	11301.6	7.6	60 08N	143 05E	60 05.0N	143 03.7E	3.0404	3.042	15°F	2.0	9.2
005	11314.5	7.6			59 13.2N	142 40.4E	3.0103	3.012	15°A	2.0	9.2
006	11395.3	6.9	53 51N	140 33E	53 47.3N	140 33.4E	3.0708	3.074	15°F	2.0	6.4
007	11407.5	6.9			52 58.3N	140 15.5E	3.0708	3.075	15°A	2.0	6.4
008	11668.9	6.9	35 18N	135 39E	35 13.7N	135 38.2E	3.1955	3.202	15°F	3.0	- 4.3
009	11681.1	6.9			34 23.8N	135 27.8E	2.1955	3.198	15°A	3.0	- 4.3
010	12206.3	6.9	01 26S	129 15E	01 30.9S	129 14.3E	2.6982	2.702	15°F	3.0	- 31.2
011	12220.6	6.9			02 30.0S	129 04.4E	2.7800	2.784	15°A	3.0	- 31.2

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PHOTO-MAP POSITIONING

Rev D21

Acc/ PMM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						1.7	2.4	.07				--
002						1.4	1.8	.00				--
003A	194	1.0N	0.1E	6.5S	1.5W	1.6	1.8	.11				15,000
003B		2.5N	1.5E									--
003C		1.5N	1.0E									--
004A	194	0.6N	.5E	6.5S	0.9E	1.7	0.6	.05				6,000
004B		0.7S	0.6E									--
005A	194	0.4N	0	8.2S	0.9E	1.7	0.9	.06				6,000
005B		0.2N	0.3E									--
006A	192	1.3N	0.5W	4.8S	0.1W	1.7	1.7	.10				1,500
006B		1.4N	0.5W									--
007A	192	0.2S	0.5S	4.5S	2.2W	2.1	0.7	.14				1,500

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. The detailed explanation is [illegible]

TOP SECRET GAMBIT
[illegible]

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PHOTO-MAP POSITIONING

Rev D21 (Contd)

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Map Accuracy [illegible]
008						1.6	0.3	.20				[illegible]
009						1.6	0.3	.08				[illegible]
010						1.7	0.3	.14				[illegible]
011						1.3	0.3	.04				[illegible]

*This data should be corrected by the amount shown in the M.C.D. [illegible] column. See detailed explanation in [illegible].

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PHOTOGRAPHIC EVALUATION

[illegible]	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
[illegible]	-	-	-	15.4	1.63	1.35	97.5
[illegible]	-	-	-	15.4	1.66	1.34	97.3
[illegible]	0.72	1.48	2.31	17.9	27.41	-	96.9
[illegible]	0.10	1.97	9.77	26.5	2.12	-	95.5
[illegible]	0.29	1.94	9.72	26.6	2.10	-	95.4
[illegible]	0.26	2.05	13.77	32.9	1.97	-	94.5
[illegible]	0.24	2.00	12.57	32.9	1.97	-	94.3
[illegible]	-	-	-	51.6	2.06	2.13	92.2
[illegible]	-	-	-	51.6	2.06	2.13	92.1
[illegible]	-	-	-	87.7	1.69	2.24	94.5
[illegible]	-	-	-	87.7	1.75	2.21	94.7

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COMMAND INFORMATION

Rev D22

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg	Lat Min	Long Deg	Long Min	Best Ephemeris Lat Deg	Lat Min	Long Deg	Long Min	Film Velocity in./sec. Command	Actual	Mirror Pos.	Crab Deg.	Reid Angle
001	16416.9	7.6	72	15N	129	51E	72	10.6N	129	45.6E	3.0103	3.014	15°F	1.0	3.5
002	16429.8	7.6					71	20.6N	128	25.9E	3.0103	3.014	15°A	1.0	3.5
003	16494.0	8.3	67	13N	125	09E	67	08.6N	125	06.2E	2.8929	2.904	15°F	1.0	10.4
004	16507.6	8.3					66	14.7N	124	28.1E	2.9218	2.924	15°A	1.0	10.4
005	16567.5	50.0	62	20N	122	06E	62	16.0N	122	03.9E	3.3253	3.331	0	1.5	4.4
006	16727.9	7.7	51	34N	117	43E	51	29.5N	117	42.7E	2.6189	2.628	15°F	1.5	10.0
007	16740.1	9.1	50	45N	117	27E	50	40.0N	117	25.8E	2.6451	2.648	15°A	2.0	34.7
008	16830.0	6.9	44	39N	115	44E	44	34.7N	115	42.8E	3.1015	3.109	15°F	2.5	9.9
009	16842.2	6.9					43	45.0N	115	30.1E	3.0708	3.074	15°A	2.5	9.9
010	16886.3	9.7	40	50N	114	48E	40	45.2N	114	46.6E	2.5419	2.542	15°F	2.5	34.9
011	16901.3	9.7					39	44.0N	114	32.2E	2.4671	2.469	15°A	2.5	34.9
012	16937.4	6.9	37	21N	114	00E	37	16.6N	113	59.4E	2.4918	2.493	15°A	2.5	42.1
013	16966.1	6.9	35	24N	113	35E	35	19.3N	113	34.3E	3.1955	3.199	15°F	3.0	8.8
014	16978.3	6.9					34	29.5N	113	34.0E	3.1639	3.165	15°A	3.0	8.8
015	17066.9	7.6	28	32N	112	13E	28	26.[illegible]N	112	12.[illegible]E	3.0788	3.079	15°F	3.0	10.1

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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COMMAND INFORMATION

[illegible]	[illegible]	[illegible]	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Ephemeris Lat Deg	Best Ephemeris Lat Min	Best Ephemeris Long Deg	Best Ephemeris Long Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
[illegible]	[illegible]	7.6					27	34.0N	112	02.5E	3.0103	3.009	15°A	3.0	14.2
[illegible]	[illegible]	20.0	24	00N	111	25E	24	04.0N	111	23.8E	3.4603	3.463	0	3.0	- 3.5
[illegible]	[illegible]	7.6	20	06N	110	42E	20	00.7N	110	40.9E	2.5673	2.570	15°F	2.5	- 37.6
[illegible]	[illegible]	7.6					18	59.1N	110	30.3E	2.6715	2.677	15°A	2.5	- 37.6
[illegible]	[illegible]	5.3	18	18N	110	23E	18	11.1N	110	22.1E	2.4165	2.420	15°A	3.0	- 44.0

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TOP SECRET - GAMBIT
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PHOTO-MAP POSITIONING

Rev D22

Acc/ PhM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) [illegible]	Film Velocity	Attitude Error (deg) [illegible]	Map Accuracy (± ft)
001A	200	5.6N	1.0W	13.4S	1.1E	6.0	6.2	.12		[illegible]
001B		5.9N	1.2W							"
002A	200	1.7N	1.1W	14.3S	0.2E	6.0	5.0	.12		5,200
002B		4.1N	1.2W							"
003A	194	5.7N	0.9W	13.8S	0.8E	6.1	4.6	.38		6,000
004A	195	3.0N	0.3W	15.0S	0.9E	6.1	4.6	.08		6,000
004B		1.5N	0.8W							"
005B	192	7.0N	1.2E	10.0S	0	6.2	3.1	.17		14,000
#005C	193	7.5N	5.5E							15,000
005D	192	6.3N	0.3E							5,000
005E		5.8N	0.2E							5,000
005F		5.7N	0.2E							5,000

#Questionable PM

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) Volume. See detailed explanation in Chapter Eighteen.

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PHOTO-MAP POSITIONING

Rev D22 (Contd)

Acc/PAN No.	Azimuth of Photos (deg)	#Positioning Error		*Predict Error		M.C.D. Error (Δ in min)		Film Velocity Error (%)	Attitude Error (deg)			Map Accuracy (± ft)
		In-Track (NM)	Cross Track (NM)	In-Track (NM)	Cross Track (NM)	Lat	Long		P	R	Y	
006A	184	5.6N	1.2W	10.6S	0.4E	6.2	3.1	.35				1,000
006B		6.8N	0.3W									1,000
A007A	179	5.0N	0.3W	11.3S	0.4W	6.2	1.7	.11				1,000
007B		4.3N	1.7E									1,000
008	Clos.					6.2	1.2	.02				--
009	Clos.					6.2	1.2	.10				--
010A	190	6.5N	0.3W	10.2S	0.9W	6.2	1.2	.00				1,700
010B		6.2N	0.2E									--
011A	190	3.9N	0.7W	10.2S	3.2W	6.2	1.0	.08				1,700
011B		3.8N	0									--
012A	190	4.9N	0.8W	11.6S	0.5E	6.2	1.0	.25				4,000
012B		6.6N	1.6W									4,000

#Questionable PM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTO-MAP POSITIONING

Rev D22 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Map Accuracy (± ft)
013A	190	7.5N	0	11.0S	0.3E	6.2	1.0	.11				2,500
013B		7.0N	0									--
014A	189	5.8N	0.5W	12.5S	2.0W	6.3	1.1	.34				2,500
014B		5.4N	0.2W									2,500
015	Clos.					6.3	1.1	.20				--
016	Clos.					6.3	1.1	.04				--
017A	189	7.0N	1.0W	11.2S	0.5W	6.2	0.8	.08				2,000
017B		6.0N	0.5W									10,000
018A	187	5.3N	2.6W	13.3S	.5E	6.2	0.8	.10				1,000
018B		6.7N	0.7W									1,000
019A	184	5.8N	1.1W	14.9S	3.1W	6.2	0.8	.23				1,000
019B		4.3N	0.5W									1,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in [illegible] Section.

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PHOTO-MAP POSITIONING

[illegible] (Contd)

[illegible]	Azimuth of [illegible] (deg)	*Positioning Error Along Track (NM)		*Predict Error Along Track (NM)		M.C.D. Error (Δ in min) Lat	Long	Film Velocity Error (%)	Attitude Error (deg) P	R	Y	Map Accuracy (± ft)
			Across Track (NM)		Across Track (NM)							
[illegible]	275	3.0N	2.0W	12.1S	.2E	6.2	0.9	.06				1,900
[illegible]		[illegible]	1.0W			6.2	0.9					1,900

*[illegible] should be corrected by the amount shown in [illegible] Data) column,
[illegible] in [illegible] Section.

PHOTOGRAPHIC EVALUATION

Rev D22

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud [illegible]	Alt[illegible] (NM)
	Dmin	Dmax					
001	0.61	1.18	1.83	14.2	2,10	1,62	97,6
002	0.50	1.24	2.18	14.2	2,10	1,62	97,6
003	0.98	1.82	2.59	19.4	2,17	-	96,7
004	0.90	1.84	2,91	19.4	2,19	-	96,5
005	0.78	2,02	5.04	24,0	14,11	-	95,8
006	1.24	2,28	5,89	35,4	1,80	-	94,1
007	1,17	2,28	6,39	35,4	2,13	2,24	93,9
008	-	-	-	42,3	1,99	2,32	93,1
009	-	-	-	42,3	1,97	2,32	93,0
010	0,96	2,22	6,53	46,3	2,16	2,22	92,9
011	1,06	2,18	5,21	46,3	2,02	2,25	92,5
012	1,10	1,90	2,74	48,1	1,53	-	92,3
013	1,06	1,84	2,44	51,6	2,06	2,22	92,1

TOP SECRET GAMBIT

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PHOTOGRAPHIC EVALUATION

Rev 882 (Cont'd)

Frame No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
[illegible]	1.07	1.68	1.95	51.7	2.04	2.04	92.1
[illegible]	"	"	"	58.6	2.15	2.40	91.8
[illegible]	"	"	"	58.6	2.10	2.39	91.7
[illegible]	0.84	1.21	1.51	62.5	6.04	2.15	91.7
[illegible]	0.70	1.47	2.32	67.0	1.74	2.34	91.8
[illegible]	0.63	1.54	2.68	67.0	1.82	2.13	91.8
[illegible]	0.72	1.58	2.86	67.7	1.15	2.28	91.9

Controls Only

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TOP SECRET GAMBIT
Handle Via BYEMAN
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COMMAND INFORMATION

Rev D23

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Ephemeris Lat Deg	Best Ephemeris Lat Min	Best Ephemeris Long Deg	Best Ephemeris Long Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirr FDF Pos.	Gmb Deg.	Roll Angle
001	21683.9	7.6	74	16N	110	28E	74	11.5N	110	21.9E	2.9805	2.988	15°F	1.9	7.1
002	21696.8	7.6					73	22.3N	109	11.7E	2.9805	2.981	15°A	1.9	7.1
003	21722.7	6.9	71	47N	107	14E	71	42.3N	107	08.6E	2.4185	2.424	0	.5	- 41.1
004	21776.7	99.0	68	16N	103	52E	68	10.9N	103	49.1E	3.2924	3.301	0	1.5	- 2.1
005	21932.6	9.7	57	54N	97	56E	57	48.3N	97	53.9E	2.3011	2.303	15°F	2.0	39.7
006	21949.7	9.7					56	38.3N	97	25.0E	2.2568	2.257	15°A	2.9	39.7
007	21968.7	6.9	55	28N	96	58E	55	22.6N	96	56.7E	2.6716	2.686	15°A	1.5	29.4
008	22143.1	6.9	43	40N	93	24E	43	34.0N	93	22.8E	3.1326	3.139	15°F	2.5	- 12.1
009	22155.5	6.9					42	44.2N	93	10.3E	3.1630	3.168	15°A	[illegible]	- 12.1
010	22187.5	5.1	40	40N	92	40E	40	33.7N	92	39.0E	2.4918	2.492	0	2.0	41.1
011	22300.8	8.3	32	20N	90	52E	32	13.5N	90	15.5E	2.8820	2.888	15°F	3.0	25.2
012	22323.5	8.3					31	17.0N	90	40.5E	2.8078	2.807	15°A	3.0	25.2
013	22338.4	5.1	30	21N	90	29E	30	14.7N	90	28.1E	3.1315	3.135	15°A	1.9	15.3
014	22345.5	6.2	29	55N	90	24E	29	[illegible]	90	[illegible]	3.2880	3.309	0	[illegible]	[illegible]
015	22356.7	6.2	28	27N	90	07E	28	[illegible]	90	06.4E	2.7525	2.751	15°F	[illegible]	- [illegible]

TOP SECRET GAMBIT
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COMMAND INFORMATION

Rev [illegible] (Contd)

Acq No.	[illegible]	Burst Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Ephemeris Lat Deg	Best Ephemeris Lat Min	Best Ephemeris Long Deg	Best Ephemeris Long Min	Film Velocity In./Sec. Command	Film Velocity In./Sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	22380.[illegible]	6.2					22	25.1N	89	55.9E	2.9350	2.934	15°A	2.5	- 34.0
017	22443.[illegible]	7.6	23	11N	88	09E	23	04.3N	89	08.4E	2.9218	2.923	15°F	3.0	- 26.2
018	22456.[illegible]	7.6					22	11.4N	88	59.0E	2.9805	2.985	15°A	3.0	- 26.2

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PHOTO-MAP POSITIONING

Rev D23

Acc/ PBM No.	Azimuth of Photo (deg)	*Position-ing Error		*Predict Error		M.C.D. Error (A in min)		Film Velocity	Attitude Error (MRE)			Map Accuracy (C.E.)
		Cross Track (NM)	Along Track (NM)	Cross Track (NM)	Along Track (NM)	Cross	Along					
001A	203	.5SN	0.2E	6.0S	0.3W	0.1	1.2	.25				5,000
001B		0.1N	0									5,000
002A	202	2.4S	0.4E	6.5S	1.3W	0	0.3	.02				5,000
002B		1.7S	0.5E									5,000
#003A	185	.3N	3.4W	4.9S	0.7E	0	0.2	.23				5,000
003B		0.1N	0.5W									5,000
004A	196	0	0.5E	6.0S	1.0W	0	0.5	.26				15,000
004B		2.0N	1.0E									15,000
004C		1.5N	1.3E									15,000
004D		2.0N	1.0E									15,000
004E		1.8N	1.0E									15,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Motion Correlation Data) column.
See detailed explanation in Graphic Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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Rev 021 (Cont'd)

Acq/Rev No.	Azimuth of Photo (Deg)	Position-ing Error		Predict Error		M.C.D. Error (± in min)		Film Velocity	Attitude Error (deg)			Map Accuracy (± ft)
		In-Track (NM)	Cross-Track (NM)	In-Track (NM)	Cross-Track (NM)	Lat	Long	Error (%)	P	R	Y	
004F		2.0N	1.9E									15,000
004G		2.1N	1.6E									15,000
004H		1.2N	1.1E									15,000
004J		1.2N	0.9E									15,000
004K		1.2N	1.3E									15,000
005	Clos.					0	0.2	.08				
006	Clos.							.05				
007	Clos.							.20				
008	Poor Source							.20				
009	Poor Source							.13				
010	Poor Source					0	0	.01				
011	Poor Source					0	0	.21				

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column.
See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev D23 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (Deg) [illegible]	Attitude Error (Deg) [illegible]	Attitude Error (Deg) [illegible]	Map Accuracy (± ft)
012	Poor Source					0	0	.03				
013	Clos.					0	0	.11				
014	Clos.					0	0	.23				
015	Clos.					- 0.1	0	.05				
016	Clos.					0	0	.06				
017A	184	1.4N	0.7W	8.0S	1.5E	0	0	.04	.03	.17	.73	6,000
017B		1.5N	1.0E									
018A	187	0	0	7.5S	1.0W	0	0	.15				6,000
018B		0	1.0E									

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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PHOTOGRAPHIC EVALUATION

Rev D23

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.83	1.18	1.47	12.0	2.07	-	97.6
002	0.84	1.13	1.38	12.0	2.07	-	97.5
003	0.80	1.37	1.87	14.1	1.48	-	97.2
004	0.63	1.08	1.70	17.8	27.41	-	96.5
005	-	-	-	28.1	1.93	2.07	94.7
006	-	-	-	29.1	1.88	2.09	94.5
007	0.54	1.34	2.57	30.4	1.67	2.08	94.3
008	0.59	1.32	2.33	43.3	2.01	1.76	92.7
009	0.76	1.55	2.38	43.3	2.04	1.23	92.6
010	0.85	1.59	2.34	45.9	1.16	-	92.4
011	0.28	1.82	8.69	54.7	2.17	1.96	91.8
012	0.34	1.97	8.40	54.7	2.10	1.94	91.7
013	0.59	2.00	5.37	55.8	1.54	2.09	91.7

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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PHOTOGRAPHIC EVALUATION

Rev D23 (Contd)

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Cover	Altitude (nm)
	Dmin	Dmax					
014	0.32	1.42	4.56	56.7	1.94	2.22	91.7
015	0.48	2.27	11.10	58.6	1.57	2.35	91.7
016	0.96	2.30	7.09	58.6	1.62	2.42	91.8
017	0.67	1.75	3.26	63.8	2.02	-	91.7
018	0.84	1.67	2.49	63.8	2.07	-	91.7

TOP SECRET CAMBIT Handle Via BYEMAN Controls Only

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TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

COMMAND INFORMATION

Acc No.	[illegible] Time Sec	[illegible] Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Ephemeris Lat Deg	Best Ephemeris Lat Min	Best Ephemeris Long Deg	Best Ephemeris Long Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	26893.[illegible]	8.3	79	33N	100	37E	79	36.7N	100	52.0E	2.1678	2.170	15°F	0	- 42.5
002	26911.[illegible]	8.3					78	34.6N	97	28.2E	2.1894	2.192	15°A	0	- 42.5
003	26969.[illegible]	30.0	74	57N	89	28E	75	01.6N	89	34.6E	3.2598	3.258	0	1.0	- 0.7
004	27100.[illegible]	99.0	66	27N	80	26E	66	31.0N	80	30.0E	3.2924	3.299	0	1.5	- 2.8
005	27260.[illegible]	7.1	55	45N	75	01E	55	49.6N	75	01.5E	2.8078	2.810	15°F	1.5	- 25.5
006	27272.[illegible]	6.4	54	56N	74	42E	54	59.8N	74	43.1E	2.8359	2.838	15°A	2.0	- 26.2
007	27333.[illegible]	6.9	50	50N	73	19E	50	54.5N	73	20.5E	2.6982	2.699	15°F	1.5	- 31.2
008	27347.[illegible]	6.9					49	56.4N	73	02.6E	2.7800	2.788	15°A	1.5	- 31.2
009	27387.7	9.7	47	10N	72	15E	47	14.4N	72	15.6E	3.0103	3.010	15°F	2.5	17.0
010	27400.[illegible]	9.7					46	21.9N	72	01.3E	2.9510	2.949	15°A	2.5	17.0
011	27412.1	5.3	45	31N	71	48E	45	35.0N	71	48.8E	3.0103	3.010	15°A	2.5	15.6
012	27440.[illegible]	6.9	43	34N	71	18E	43	37.8N	71	18.6E	3.1639	3.163	15°F	2.5	2.1
013	27453.1	6.9					42	48.1N	71	06.2E	3.1639	3.163	15°A	2.5	2.1
014	27481.[illegible]	6.9	40	47N	70	37E	40	50.8N	70	37.9E	3.1955	3.196	15°F	3.0	- 0.7
015	27494.1	6.9					40	00.9N	70	26.3E	3.1955	3.196	15°A	3.0	- 0.7

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COMMAND INFORMATION

Rev. D24 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg	Command Position Lat Min	Command Position Long Deg	Command Position Long Min	Best Ephemeris Lat Deg	Best Ephemeris Lat Min	Best Ephemeris Long Deg	Best Ephemeris Long Min	Film Velocity In./Sec. Command	Film Velocity In./Sec. Actual	Mirr Pos Pos.	Crab Deg.	Roll Angle
016	27512.1	25.0	38	44N	70	09E	38	47.5N	70	09.6E	[illegible]	[illegible]	0	[illegible]	- [illegible]
017	27706.3	6.9	25	29N	67	30E	25	32.7N	67	30.2E	3.1326	3.136	1607	0.0	- 16.[illegible]
018	27718.5	6.9					24	42.7N	67	21.0E	3.1630	3.163	1594	0.0	- 15.8

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TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

PHOTO-MAP POSITIONING

Rev P2#

Acq/ Rev No.	Azimuth of Photog. (deg)	#Positioning Error In-Track (NM)	#Positioning Error Cross Track (NM)	#Predict Error In-Track (NM)	#Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001	No Entry					1.0	5.6	.10				
002	No Entry					1.0	6.0	.12				
003A	204	2.0N	0	3.1N	0	1.2	2.3	.23				10,000
003B		1.0N	0									
003C		4.5S	2.0E									
004A	194	3.0N	.5W	2.0N	1.0W	1.2	2.0	.26				10,000
004B		3.0N	1.0W									10,000
004C		3.0N	.5W									10,000
004D		2.0N	.5W									7,000
004E		7.0S	.5W									7,000
004F		1.0N	.5E									3,000
005A	191	1.6N	1.6W	3.5N	0.6E	1.3	0.2	.08				900

#Questionable RM
This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column.
See earlier explanation in Gooplot Section.

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Controls Only

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PHOTO-MAP POSITIONING

Rev D24 (Contd)

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Attitude Error (deg) [illegible]	Map Accuracy (± ft)
006A	191	1.2N	.4W	2.6N	0	1.2	0.3	.05				3,000
007	No Entry					1.2	0.4	.03				
008	No Entry					1.2	0.3	.29				
009	No Entry					1.2	0.2	.01				
010	No Entry					1.2	0.2	.07				
011	No Entry					1.1	0.2	.01				
012A	190	1.8N	1.2W	2.3N	.9W	1.2	0.2	.03				650
012B		2.2N	.9W									
013A	190	0	0.5W	1.5N	2.9W	1.2	0.2	.03				650
014A	189	2.3N	1.6W	2.5N	0	1.3	0.1	.02				
014B		2.0N	1.7W									2,500
015A	189	0.3N	1.2W	2.0N	2.0W	1.2	0.1	.02				2,500

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Doppler Section.

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PHOTO-MAP POSITIONING

Rev D24 (Contd)

Acc/ Trk No.	Azimuth of Photo (deg)	*Position-ing Error Track (NM)	*Position-ing Error Cross Track (NM)	*Predict Error Along Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in Min) Lat	M.C.D. Error (Δ in Min) Long	Film Velocity Error (%)	*Attitude Error (deg) P	*Attitude Error (deg) Y	Map Accuracy (± ft)
016B		0.3N	1.0W								2,500
016A	191	8.2N	2.1W	2.2N	0.8E	1.3	0.1	.03			3,500
016B		3.0N	5.5W								6,000
017A	190	2.0N	2.1W	2.0N	0	1.3	0.2	.08			1,600
017B		2.2N	1.3W								1,600
018A	190	1.2N	1.2W	1.8N	3.5W	1.3	0.1	.03			1,600
018B		1.5N	0.8W								1,600

*This data should be corrected by the amount shown in the M.C.D. (Mission Correction Data) column. See detailed explanation in Snapshot section.

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE

PHOTOGRAPHIC EVALUATION

Rev D24

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	1.39	-	6.2	1.54	1.28	98.6
002	-	1.90	-	6.2	1.56	1.29	98.4
003	0.92	2.24	1.69	10.7	8.38	1.59	97.7
004	0.73	2.22	3.71	19.6	27.41	-	96.2
005	0.99	2.34	5.70	30.9	1.81	-	94.4
006	1.01	2.32	5.30	30.8	1.67	-	94.2
007	2.19	2.30	1.61	35.9	1.69	-	93.6
008	2.24	2.30	1.31	35.9	1.75	-	93.5
009	1.92	2.29	2.33	39.6	1.62	2.26	93.1
010	2.18	1.70	1.40	39.6	2.57	2.28	93.0
011	1.96	-	2.11	40.4	1.52	-	92.9
012	0.66	1.28	3.09	43.2	2.04	1.87	92.7
013	0.68	1.66	2.90	43.3	2.04	2.06	92.6

TOP SECRET - GAMBIT
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PHOTOGRAPHIC EVALUATION

Rev D24 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.63	1.71	3.22	46.0	2.06	-	92.4
015	0.70	2.07	5.27	46.1	2.06	-	92.3
016	1.22	2.39	8.92	47.7	6.07	-	92.2
017	0.72	1.90	3.76	61.4	2.01	-	91.6
018	0.60	1.71	3.54	61.4	2.04	-	91.6

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

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COMMAND INFORMATION

Rev D25

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	32337.4	7.6	70 26N	61 40E	70 33.6N	61 46.8E	3.0103	3.008	15°F	1.5	7.1
002	32350.3	7.6			69 43.2N	60 58.6E	3.0103	3.018	15°A	1.5	7.1
003	32379.1	60.0	67 42N	59 17E	67 49.8N	59 22.7E	2.9510	2.945	0	1.0	- 26.9
004	32489.2	7.6	60 23N	54 53E	60 31.1N	54 56.3E	2.5167	2.518	15°F	2.0	33.3
005	32504.2	7.6			59 30.7N	54 28.3E	2.4918	2.495	15°A	2.0	33.3
006	32514.8	7.8	58 40N	54 07E	58 48.1N	54 09.5E	2.4427	2.440	15°F	2.0	35.4
007	32528.8	7.8	57 44N	53 43E	57 51.8N	53 45.5E	2.4427	2.443	15°A	1.0	36.2
008	32548.5	5.0	56 25N	53 11E	56 32.4N	53 13.4E	3.1015	3.102	0	2.0	20.6
009	32587.4	9.0	53 48N	52 13E	53 55.2N	52 15.3E	2.5930	2.596	15°F	1.5	- 34.0
010	32601.7	9.0			52 57.3N	51 55.5E	2.6715	2.677	15°A	1.5	- 34.0
011	32650.7	7.6	49 31N	50 51E	49 38.7N	50 52.4E	3.1015	3.106	15°F	2.0	- 12.1
012	32661.5	9.9	48 47N	50 38E	48 54.8N	50 39.5E	3.1015	3.106	15°A	2.5	- 12.8
013	32688.2	8.5	46 59N	50 07E	47 06.3N	50 08.6E	2.3011	2.303	15°F	1.5	- 43.2
014	32702.6	8.5	46 00N	49 51E	46 07.7N	49 52.7E	2.3474	2.347	15°A	2.0	- 44.0
015	32741.5	6.6	43 22N	49 10E	43 39.4N	49 11.6E	2.4671	2.465	15°F	1.5	- 39.7

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

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COMMAND INFORMATION

Rev D25 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position		Best Epheremis		Film Velocity in./sec.		Mirror Pos.	Crab	Roll
			Lat Deg Min	Long Deg Min	Lat Deg Min	Long Deg Min	Command	Actual		Deg.	Angle
016	32755.2	6.6	42 26N	48 56E	42 33.5N	48 57.8E	2.5167	2.517	15°A	2.0	- 40.4
017	33101.9	99.0	18 48N	44 14E	18 54.2N	44 14.8E	3.2275	3.230	0	3.0	16.3

TOP SECRET - GAMBIT
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Handle via BYEMAN Control System Only

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

PHOTO-MAP POSITIONING

Rev D25

Acc/ PoM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						3.8	4.1	.08				
002						3.9	3.9	.26				
003A	193	3.1N	0.2W	3.0N	0.3E	3.9	3.3	.20				6,000
003B		3.8N	0.1E									6,000
003C		4.2N	0.7E									6,000
003D		4.3N	1.2E									6,000
#003E		3.8S	6.6E									6,000
003F		4.1N	0.1W									9,000
003G		4.1N	0.5W									9,000
004A	190	5.5N	0.7W	2.5N	0.5E	4.0	1.7	.05				3,000
004B		4.0N	0.7E									3,000

#Questionable BM

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev D25 (Contd)

Acc/ P&M No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
005A	190	1.3N	0			3.9	1.6	.13				3,000
005B		1.8N	1.4E									3,000
006A	194	2.5N	3.3E	2.5N	0.9W	3.9	1.7	.11				800
006B		5.7N	0.6W									1,800
007A	194	2.7N	1.3W	3.0N	2.0W	4.0	1.6	.01				700
008A	191	5.3N	0.9W	3.8N	0.6W	4.0	2.0	.02				2,100
008B		5.0N	0.5W									2,100
009						4.0	1.3	.12				
010						4.0	1.3	.20				
011						4.1	1.1	.14				
012						4.0	1.1	.14				
013						4.0	0.9	.08				

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle via BYEMAN Control Only

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PHOTO-MAP POSITIONING

Rev D25 (Contd)

Acc/PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error		*Predict Error		M.C.D. Error (Δ in min)		Film Velocity Error (%)	Attitude Error (deg)			Map Accuracy (± ft)
		In-Track (NM)	Cross Track (NM)	In-Track (NM)	Cross Track (NM)	Lat	Long		P	R	Y	
014						4.0	1.0	.02				
015						4.1	0.8	.08				
016						4.0	0.8	.01				
#017A	190	16.5N	4.2W	2.3N	0.5W	4.0	0.5	.08				6,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Handle Via BYEMAN Controls Only
TOP SECRET - GAMBIT
BYE

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D25

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.45	1.20	2.54	15.9	2.10	1.23	96.8
002	0.43	0.98	2.10	15.9	2.10	1.31	96.7
003	-	-	-	18.3	14.95	1.16	96.3
004	0.46	2.08	7.55	26.4	1.70	2.15	95.1
005	0.65	2.10	5.89	26.4	1.68	2.18	94.9
006	0.68	2.17	6.67	28.1	1.68	2.23	94.8
007	0.71	2.16	6.32	28.1	1.68	2.36	94.6
008	0.61	2.09	5.98	29.9	1.50	-	94.4
009	2.08	2.20	1.31	33.0	2.06	2.22	94.0
010	1.94	2.20	1.71	33.0	2.13	2.21	93.9
011	-	-	-	37.2	2.17	2.30	93.4
012	-	-	-	37.2	2.76	2.31	93.3
013	-	-	-	39.9	1.70	2.31	93.1

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

TOP SECRET GAMBIT
Handle Via BYEMAN
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PHOTOGRAPHIC EVALUATION

Rev D25 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	-	-	-	39.9	1.74	2.29	92.9
015	-	-	-	43.5	1.45	2.12	92.6
016	-	-	-	43.5	1.49	2.08	92.5
017		1.80	3.11	67.7	26.86	-	91.8

TOP SECRET GAMBIT
Handle Via BYEMAN
Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D26

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	37663.6	7.6	68 36N	37 56E	68 44.6N	38 02.0E	2.2113	2.210	15°F	.5	- 42.5
002	37680.7	7.6			67 36.8N	37 07.5E	2.2558	2.258	15°A	.5	- 42.5
003	37718.3	7.6	65 00N	35 19E	65 07.8N	35 24.0E	3.0103	3.015	15°F	1.5	- 11.3
004	37731.2	7.6			64 16.2N	34 52.6E	3.0404	3.046	15°A	1.5	- 11.3
005	37765.9	5.3	61 50N	33 31E	61 57.5N	33 35.7E	2.4427	2.444	0	1.0	- 42.5
006	37783.6	6.9	60 39N	32 56E	60 46.8N	33 00.4E	2.6189	2.620	15°F	1.0	- 31.9
007	37797.9	6.9			59 49.1N	32 33.3E	2.6715	2.675	15°A	1.0	- 31.9
008	37843.4	5.3	56 38N	31 11E	56 46.4N	31 14.1E	3.2924	3.295	0	2.0	9.2
009	37866.5	6.9	55 05N	30 36E	55 13.1N	30 38.7E	3.1326	3.134	15°F	2.0	- 4.3
010	37878.7	6.9			54 23.8N	30 20.9E	3.1326	3.134	15°A	2.0	- 4.3
011	37894.7	6.9	53 11N	29 56E	53 19.1N	30 01.9E	2.9510	2.952	15°F	2.5	17.7
012	37931.7	7.3	50 41N	29 07E	50 49.1N	29 13.3E	2.9515	2.675	15°F	2.5	29.8
013	37944.4	8.0	49 50N	28 51E	49 57.6N	28 53.3E	2.6451	2.646	15°A	2.0	30.5
014	37958.4	5.1	48 53N	28 34E	49 00.8N	28 36.5E	2.5930	2.598	15°A	1.5	32.6
015	37987.8	5.5	48 15N	28 24E	48 23.[illegible]	28 25.7E	2.7525	2.754	0	2.0	33.3

TOP SECRET - GAMBIT

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Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D26 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mir-ror Pos.	Crab Deg.	Roll Angle
016	37988.4	8.3	46 51N	28 00E	46 58.9N	28 01.7E	2.5419	2.542	15°F	2.5	34.0
017	38004.1	8.3			45 55.1N	27 43.5E	2.4671	2.477	15°A	2.5	34.0
018	38015.4	6.9	45 01N	27 30E	45 09.1N	27 31.4E	2.7525	2.754	15°F	2.5	27.7
019	38029.7	6.9			44 10.8N	27 16.4E	2.6715	2.671	15°A	2.5	27.7
020	38041.8	7.6	43 14N	27 03E	43 21.6N	27 04.8E	3.0708	3.078	15°F	2.5	12.8
021	38054.7	7.6			42 29.1N	26 51.8E	3.0404	3.044	15°A	2.5	12.8
022	38668.2	15.0	00 27N	19 09E	00 34.2N	19 10.6E	3.1639	3.178	0	3.5	22.7

Handle Via BYEMAN Controls Only
TOP SECRET - GAMBIT
BYE
TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

TOP SECRET GAMBIT
A-100

PHOTO-MAP POSITIONING

Rev D26

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity* Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	193	5.7N	0.1W	2.0S	1.6E	9.0	7.2	.06				2,000
001B		13.0N	2.8W									2,000
#002A	192	8.1N	1.3W	2.1S	0.4E	8.7	6.2	.09				2,000
002B		7.7N	2.2W									2,000
003A				4.0S	0.6E	8.9	5.6	.17				450
004A				4.2S	0.7W	8.7	5.6	.20				450
005A	191	10.7N	1.0W	1.2S	0.5E	8.7	5.6	.07				750
005B		10.2N	0									550
006A	187.5	9.5N	0.3W	1.0S	0.4E	8.7	5.6	.04				500
006B		6.0N	0.5W									500
007A	187.5	7.8N	0.5W	0.2S	1.1W	8.7	5.6	.13				500

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Handle Via Byeman Control

Approved for Release: 2018/09/11 C05103024

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

PHOTO-MAP POSITIONING

Rev D26 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
008A	192	10.5N	0	1.5S	0.7E	9.2	3.2	.08				650
008B		10.5N	0									650
009A	192	10.6N	1.3W	1.0S	0.5W	9.2	3.2	.04				600
009B		9.7N	1.3W									600
010A	192	7.5N	1.0W	1.0S	2.5W	9.2	3.2	.04				600
010B		7.7N	1.0W									600
011A	192	9.3N	1.2E	1.7S	0.7E	9.2	5.6	.83				500
011B		9.3N	0.2W									500
#012A	195	6.5S	0.8E	1.5S	0.2W	9.2	5.6	.13				500
012B		9.5N	0.1E									500
013A	195		0.3E	1.5S	0	9.2	2.4	.03				500
013B			0.2W									500

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT
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Handle Via BYEMAN Controls Only

BYE

Approved for Release: 2018/09/11 C05103024

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PHOTO-MAP POSITIONING

Rev D26 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
014A						9.2	2.4	.19				600
015						9.2	2.4	.05				
016						9.3	1.1	.00				
017						9.3	1.1	.40				
018						9.3	1.1	.05				
019						9.3	1.1	.02				
020						9.4	1.8	.23				
#021A		9.1S	1.1W	4.2S	3.0W	9.4	1.8	.12				1,000
021B		2.2S	1.1W					.44				1,000
022						9.4	1.8					

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D26

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.87	1.80	2.81	8.0	1.45	-	96.3
002	0.81	1.58	2.32	8.0	1.49	-	96.1
003	0.26	1.52	6.78	21.6	2.10	-	95.7
004	0.33	1.64	5.61	21.6	2.12	-	95.6
005	0.45	1.92	5.74	24.4	1.17	-	95.2
006	0.59	2.12	6.50	26.1	1.63	-	95.0
007	0.60	2.12	6.42	26.1	1.67	1.89	94.8
008	0.55	2.10	6.47	29.7	1.69	1.64	94.4
009	0.64	2.22	7.84	31.7	2.01	-	94.1
010	0.77	2.17	6.11	31.7	2.01	-	94.0
011	0.63	2.18	7.17	33.7	1.88	-	93.8
012	0.72	2.16	6.12	36.3	1.76	-	93.5
013	0.60	2.00	5.29	36.1	1.89	-	93.4

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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Approved for Release: 2018/09/11 C05103024

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TOP SECRET GAMMA

PHOTOGRAPHIC EVALUATION

Rev D26 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.70	2.10	5.50	37.1	1.22	-	93.2
015	-	-	-	38.2	1.40	2.06	93.1
016	-	-	-	40.2	1.86	2.11	93.0
017	-	-	-	40.2	1.80	2.11	92.8
018	-	-	-	42.0	1.73	2.06	92.7
019	-	-	-	42.0	1.67	2.04	92.6
020	0.41	0.78	1.76	43.7	2.15	2.01	92.5
021	0.72	1.17	1.66	43.8	2.12	2.20	92.5
022	-	-	-	85.9	4.17	2.36	94.2

Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D27

Acq No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	42740.7	7.6	82 00N	46 33E	82 08.2N	46 47.8E	2.5673	2.567	15°F	.5	29.1
002	42755.7	7.6			81 23.2N	41 59.6E	2.5673	2.563	15°A	.5	29.1
003	43154.3	15.0	55 43N	08 45E	55 55.3N	08 49.4E	2.6715	2.684	0	1.5	34.7
004	43427.9	8.3	37 11N	03 34E	37 23.3N	03 36.4E	2.8078	2.812	15°F	2.0	29.8
005	43441.5	8.3			36 27.6N	03 24.2E	2.8929	2.902	15°A	2.0	29.8

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

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Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D27

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						9.9	5.8	.01				
002						10.0	4.5	.17				
003A	192	16.0N	0.5E	3.0S	0.9W	14.3	4.7	.47				700
003B		17.6N	1.1E									500
004A	191	16.1N	1.8W	6.0S	0.5E	14.7	2.3	.15				5,000
004B		14.0N	1.8W									
005A	194	14.2N	0.5W	6.2S	2.5E	14.6	2.1	.31				5,000
005B		13.6N	0									5,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only
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Controls Only
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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

PHOTOGRAPHIC EVALUATION

Rev D27

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	3.8	1.74	0.62	98.7
002	-	-	-	3.9	1.74	0.61	98.5
003	0.81	1.70	2.83	30.7	3.47	2.22	94.2
004	0.78	1.68	2.87	49.8	2.10	2.34	92.0
005	0.94	1.74	2.54	49.8	2.17	1.89	91.9

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D31

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	64403.6	30.0	52 01N	80 52W	52 01.3N	80 51.9W	3.3921	3.397	0	2.0	- 2.1
002	64448.2	30.0	49 01N	81 48W	49 01.2N	81 47.4W	3.3921	3.400	0	2.5	- 2.1
003	64498.3	3.0	45 37N	82 44W	45 37.6N	82 44.2W	3.0103	3.014	15°F	2.0	- 19.9
004	64504.0	20.6	45 14W	82 50W	45 14.4N	82 50.3W	3.2598	3.263	0	2.5	- 19.1
005	64527.0	3.0	43 40N	83 14W	43 40.8N	83 14.4W	3.0708	3.094	15°A	2.5	- 18.4
006	64542.4	10.0	42 38N	83 30W	42 38.0N	83 30.0W	3.4260	3.431	0	2.5	- 1.4
007	64646.2	2.5	35 34N	85 06W	35 34.4N	85 06.1W	3.1955	3.196	15°F	3.0	- 0.7
008	64651.9	2.5	35 11N	85 11W	35 11.1N	85 11.0W	3.4603	3.462	0	3.0	- 5.0
009	64657.7	2.5	34 47N	85 16W	34 47.4N	85 16.0W	3.1955	3.203	15°A	3.0	- 9.9
010	64674.1	2.0	33 40N	85 30W	34 40.4N	85 29.9W	3.1015	3.108	15°F	3.0	- 16.3
011	64683.5	2.0	33 02N	85 38W	33 02.0N	85 37.7W	3.4260	3.445	0	3.0	- 8.5
012	64693.0	2.0	32 23N	85 45W	32 23.2N	85 45.5W	3.1955	3.193	15°A	3.0	0
013	64716.0	4.0	30 49N	86 04W	30 49.1N	86 04.2W	3.1015	3.106	15°F	3.0	12.1
014	64722.2	4.0	30 23N	86 09W	30 23.7N	86 09.1W	3.3253	3.326	0	3.0	13.5
015	64728.4	4.0	29 58N	86 14W	29 58.4N	86 14.1W	3.0708	3.079	15°A	3.0	14.2

TOP SECRET - GAMBIT
A-109
Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT
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Approved for Release: 2018/09/11 C05103024

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PHOTO-MAP POSITIONING

Rev D31

Acq/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A		1.4N	1.0W	0	0.5W	0	0.8	.14				3,000
002						0	0.8	.23				
003A		0.4S	1.2W			0	0.7	.12				750
004A	190	3.5N	0.7W	0.2S	1.1W	0	0.7	.10				750
004B		1.5N	1.0W									750
004C		2.0S	0	0.5S	1.0W							3,000
004D		1.5S	0									3,000
004E		2.0S										3,000
004F		0.8S										650
005A	190	0.5N	0.5W	0.5N	1.0W	0	0.7	.76				650
006						0	0.6	.14				
007A		2.0S	1.1W	0	0	0	0.6	.02				750

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Ray D31 (Contd)

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
008A		1.7S	1.1W	0	0.4E	0	0.6	.05				750
009A		2.4S	0.9W	0.2S	0.8W	0.1	0.5	.23				750
010A		0.5N	0	0	0	0.1	0.5	.21				750
011A		0.4S	0.2W	0	0.4W	0.2	0.5	.55				750
012A		1.9S	0.5W	0.4N	0.8W	0.2	0.5	.08				650
013A		1.8S	0	0	0.1W	0.3	0.4	.14				850
014A		1.8S	0	0	0	0.3	0.4	.02				850
015A		1.8S	0.6W	0	0	0.3	0.4	.27				850

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via Byeman Controls Only

Controls Only

Approved for Release: 2018/09/11 C05103024

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PHOTOGRAPHIC EVALUATION

Rev D31

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.23	1.92	2.25	34.5	8.74	2.20	94.1
002	-	-	-	37.5	8.74	2.00	93.7
003	1.24	2.04	2.75	41.4	0.94	-	93.3
004	0.94	1.66	2.21	41.3	5.83	-	93.2
005	0.70	1.84	3.59	42.5	0.97	2.22	93.1
006	2.07	2.07	1.00	44.0	3.12	-	93.0
007	0.57	2.07	5.97	51.5	0.89	-	92.4
008	0.40	1.72	4.57	51.5	0.99	-	92.4
009	0.66	1.82	3.63	51.4	0.89	-	92.4
010	0.39	1.44	3.62	53.4	0.72	1.55	92.3
011	0.66	1.62	2.84	53.6	0.83	2.00	92.3
012	0.37	1.70	5.46	53.9	0.75	1.44	92.2
013	0.57	2.06	5.85	56.3	1.24	2.22	92.2

TOP SECRET CAMBIT
Handle Via BYEMAN Controls Only
Handle Via BYEMAN Controls Only
TOP SECRET CAMBIT

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D31 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.50	1.88	4.60	56.3	1.35	2.24	92.2
015	0.68	1.80	3.46	56.3	1.22	2.24	92.2

TOP SECRET - GAMBIT
A-112
Handle Via Byeman Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D32

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	69947.0	10.0	35 20N	107 14W	35 20.4N	107 13.9W	3.4603	3.450	0	3.0	- 5.7

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
BYE
TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D32

Acc/ P&M No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A		0.4S	0.5W			0	0.4	.30				1,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

A-114

A-115

Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D32

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.65	2.00	4.79	51.3	3.15	2.18	92.3

TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Mar 013

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	76073.3	8.3	21 18S	139 00W	21 17.7S	139 01.3W	No Meas.		15°F	3.5	2:1
002	76086.9	8.3			22 13.4S	139 10.5W	No Meas.		15°A	3.5	2.1

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D33

Acc/ PsM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001				3.2S	0	0.1	1.0					
002A		3.2S	0.9W	4.5S	3.0W	- 0.1	0.4					15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET / GAMBIT
Handle Via BYEMAN Controls Only
TOP SECRET / GAMBIT
Handle Via BYEMAN Controls Only
Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D33

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.02	1.60	1.89	71.5	2.19	2.24	101.3
002	0.80	2.10	5.07	71.5	2.14	2.18	101.6

TOP SECRET
A-119
Special Handling

TOP SECRET GAMMA
A-119
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D36

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	4195.0	7.6	71 41N	179 56W	71 32.3N	179 56.2E	3.0103	3.012	15°F	1.0	10.6
002	4207.9	7.6			70 42.0N	179 03.4E	2.9809	2.986	15°A	1.0	10.6
003	4221.8	7.6	69 56N	178 18E	69 47.7N	178 10.8E	2.5167	2.519	15°F	1.5	33.3
004	4236.8	7.6			68 48.7N	177 18.7E	2.4918	2.496	15°A	1.5	33.3
005	4282.8	8.7	65 56N	175 07E	65 46.8N	175 02.1E	2.2783	2.279	15°F	1.5	40.4
006	4298.6	8.0	64 53N	174 26E	64 44.0N	174 21.8E	2.2558	2.255	15°A	1.0	41.1

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

A-119

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D36

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						0	0	.06				
002						0	0	.18				
#003A	201	4.0S	2.0W	10.0S	2.0W	0	0	.09				15,000
003B		0	0									7,000
004A	200	6.0S	3.0E	9.0S	0	0	0	.13				15,000
004B		4.0S	1.0W									7,000
005A				9.1S	0.4E	0	0	.03				5,000
005B		2.0S	1.2E			[redacted]						6,000
006A				9.1S	0.6E	0	0	.04				5,000
006B		1.0S	0									6,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
A-120
Handle Via BYEMAN Controls Only

A-121

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D36

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.98	1.26	1.35	15.1	2.10	1.62	96.6
002	1.02	1.24	1.27	15.1	2.07	1.46	96.5
003	0.62	1.95	4.69	17.0	1.72	-	96.3
004	0.68	1.92	4.06	17.0	1.68	-	96.2
005	1.06	2.10	3.66	21.2	1.71	-	95.7
006	0.77	2.09	4.98	21.7	1.56	-	95.5

TOP SECRET GAMBIT
A-121
Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT BYE-2
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev 287

Acq No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	9546.7	6.9	68 06N	154 38E	67 54.5N	154 29.9E	3.0708	3.082	15°F	1.5	- 2.8
002	9558.9	6.9			67 06.3N	153 53.3E	3.1015	3.101	15°A	1.5	- 2.8
003	9590.1	50.0	65 14N	152 35E	65 02.4N	152 28.8E	3.3253	3.329	0	1.5	- 7.1
004	9603.4	7.6	60 21N	149 54E	60 09.2N	149 49.8E	2.9510	2.952	15°F	2.0	17.7
005	9676.2	7.6			59 17.4N	149 26.1E	2.9218	2.921	15°A	2.0	17.7

TOP SECRET GAMBIT

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D37

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A		1.0S	0	11.2S	3.0E	0	0	.36				15,000
002A		2.5S	0	10.5S	1.5E	0	0	.02				15,000
003A	193	0.3N	0	12.0S	0	0	0	.11				15,000
003B		0.7N	0									15,000
003C		0	0									9,000
#003D		22.0N	0.8W									6,000
004A	193	1.5S	0.6E	14.0S	1.0E	0	0	.03				4,000
004B		1.5S	1.0E									6,000
005A	192	3.0S	0	14.0S	1.5W	0	0	.03				4,000
005B		2.5S	0.8E									6,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column.
See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
BYE
Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D37

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.76	1.78	3.12	18.9	1.97	-	96.0
002	0.70	1.80	3.40	18.8	1.99	-	95.8
003	0.57	1.90	4.42	21.4	14.11	-	95.5
004	0.47	2.00	5.69	26.8	2.05	-	94.7
005	0.40	2.00	6.85	26.8	2.02	-	94.6

TOP SECRET GAMBIT

A-125

Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D38

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	14754.3	7.6	73 53N	138 42E	73 38.4N	138 22.1E	2.6189	2.626	15°F	1.0	29.8
002	14769.3	7.6			72 40.8N	137 06.5E	2.5930	2.594	15°A	1.0	29.8
003	14899.0	6.9	64 25N	130 00E	64 10.4N	129 52.3E	2.6715	2.674	15°F	1.0	31.2
004	14913.3	6.9			63 13.2N	129 19.3E	2.6982	2.700	15°A	1.0	31.2
005	15052.1	7.6	54 10N	125 19E	53 54.7N	125 14.5E	3.0708	3.070	15°F	2.0	12.8
006	15065.0	7.6			53 02.6N	124 56.6E	3.0404	3.041	15°A	2.0	12.8
007	15143.3	7.6	48 00N	123 22E	47 44.8N	123 18.8E	3.0404	3.041	15°F	2.5	14.2
008	15156.2	7.6			46 52.4N	123 04.2E	3.0103	3.013	15°A	2.5	14.2
009	15228.3	15.0	42 14N	121 51E	41 58.7N	121 48.8E	2.6451	2.647	0	2.0	36.9
010	15266.7	6.9	39 38N	121 15E	39 22.2N	121 12.2E	3.1015	3.105	15°F	3.0	12.1
011	15278.9	6.9			38 32.2N	121 1.0E	3.0708	3.073	15°A	3.0	12.1
012	15309.5	6.9	36 43N	120 36E	36 27.2N	120 33.6E	3.1955	3.200	15°F	3.0	7.1
013	15321.7	6.9			35 37.4N	120 23.0E	3.2275	3.225	15°A	3.0	7.1
014	15372.1	30.0	32 27N	119 43E	32 12.2N	119 40.7E	2.8642	2.868	0	2.5	31.9
015	15454.6	7.6	26 49N	118 38E	26 33.2N	118 35.8E	2.9510	2.951	15°F	3.0	21.8

Handle Via BYEMAN Controls Only

TOP SECRET · GAMBIT

BYE 2

TOP SECRET · GAMBIT

Handle Via BYEMAN Controls Only

A-125

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev 038 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	15467.5	7.6			25 40.4N	118 26.2E	2.8642	2.865	15°A	3.0	21.3
017	15495.1	7.6	24 03N	118 07E	23 47.4N	118 05.7E	2.4918	2.495	15°F	2.0	- 39.7
018	15510.1	7.6			22 45.7N	117 54.7E	2.5930	2.595	15°A	2.0	- 39.7
019	15953.0	7.6	07 16S	112 58E	07 32.2S	112 56.3E	3.0708	3.080	15°F	3.5	- 5.0
020	15965.9	7.6			08 25.2S	112 47.7E	3.0404	3.044	15°A	3.5	- 5.0

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

A-126

A-127

Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D38

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	209	1.7N	0.4E	17.5S	1.0E	0.4	0.6	.27				15,000
#001B		1.5N	1.5W									15,000
002A	206	0.5S	0	17.5S	1.0W	0.5	0.6	.04				15,000
002B		2.0S	1.0W									15,000
003A	191	0	1.0W			0.5	0.6	.09				15,000
003B		1.0N	0									15,000
#004A	191	4.0S	2.5E			0.4	0.6	.07				15,000
004B		2.0S	0									15,000
005A	191	1.2N	0	20.5S	0.3E	0.5	0.6	.03				3,000
005B		0.7N	0.4E									3,000
006A	187	1.7S	1.8W	22.0S	1.0W	0.6	0.6	.02				3,000
006B		1.2S	0.2E									3,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Readout Section.

TOP SECRET GAMBIT
A-127
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D38 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
007A	191	1.0S	0.5E	17.5S	0.5E	0.5	0.6	.02				10,000
007B		1.0N	0.5E									10,000
#008A	191	6.5S	2.5E	19.5S	1.0E	0.5	0.6	.09				10,000
008B		2.0S	0									10,000
009						0.5	0.5	.07				
010A	191	0.2S	0.5W	16.0S	1.4E	0.6	0.6	.11				
011A	191	2.1S	0.5W	16.0S	1.4E	0.5	0.6	.07				1,400
012A	191	0.5S	1.0W	16.0S	0	0.5	0.6	.14				10,000
013A	191	1.0S	1.0W	17.0S	1.5E	0.5	0.6	.08				10,000
014A	191	1.5N	0.8E	16.0S	0.7W	0.5	0.6	.13				3,000
014B		2.5N	0.5E									3,000

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
A-128
Handle Via BYEMAN Control Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Handle Via BYEMAN Controls Only

PHOTO-MAP POSITIONING

Rev D38 (Contd)

Acc/ PSM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
014C		0.7N	1.1E									3,000
014D		1.7N	0									2,000
014E		1.0N	0.4E									2,000
014F		1.2N	1.5E									1,100
015						0.5	0.6	.00				
016						0.6	0.6	.03				
017A	185	2.0N	2.0W	17.3S	1.0W	0.7	0.6	.13				1,700
017B		2.0N	3.5W									5,000
018A	185	1.0S	1.0W	18.0S	1.5E	0.6	0.6	.08				1,700
018B		1.0N	2.0W									5,000
019A	188	1.0N	1.0W	19.5S	1.0W	0.7	0.6	.30				5,000
020A	188	0	0	21.9S	2.0E	0.6	0.6	.12				5,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

BYE

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D38

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.04	1.34	1.38	13.1	1.78	-	96.7
002	1.00	1.24	2.30	13.1	1.76	-	96.5
003	0.44	1.73	4.66	22.8	1.67	-	95.1
004	0.42	1.72	4.86	22.8	1.69	-	95.0
005	0.45	1.82	4.07	33.2	2.15	-	93.6
006	0.53	1.82	4.48	33.2	2.12	-	93.5
007	0.42	2.04	7.71	39.5	2.12	-	92.8
008	0.56	2.08	6.49	39.5	2.10	-	92.7
009	-	-	-	44.8	3.43	2.26	92.2
010	0.63	0.92	1.35	47.9	1.99	2.23	92.0
011	0.91	1.10	1.24	47.9	1.97	2.14	91.9
012	-	-	-	50.8	2.06	2.14	91.7
013	0.83	1.40	1.89	50.8	2.08	1.92	91.7

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

A-131

Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D38 (Contd)

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.70	1.42	2.20	54.7	7.33	-	91.5
015	-	-	-	60.8	2.05	2.26	91.4
016	-	-	-	60.8	1.98	2.32	91.4
017	1.56	2.02	1.86	63.5	1.68	2.27	91.5
018	1.53	1.96	1.71	63.5	1.76	2.32	91.5
019	1.02	1.62	1.94	85.1	2.15	2.36	96.2
020	0.78	2.10	5.18	85.1	2.12	2.32	96.4

TOP SECRET GAMBIT
Handle Via BYEMAN Controls Only
A-151
Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D39

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Ephemeris Lat Deg Min	Best Ephemeris Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	20204.0	8.3	63 52N	107 36E	63 34.5N	107 26.1E	2.7800	2.774	15°F	1.0	- 26.9
002	20216.6	8.3			63 40.0N	106 56.0E	2.8078	2.810	15°A	1.0	- 26.9
003	20308.8	8.3	56 51N	104 15E	56 33.5N	104 08.2E	2.4427	2.438	15°F	1.0	- 39.0
004	20324.5	8.3			55 29.9N	103 44.0E	2.4918	2.494	15°A	1.0	- 39.0
005	20356.7	7.6	53 38N	103 03E	53 19.7N	102 57.4E	3.0404	3.042	15°F	2.0	13.5
006	20369.6	7.6			52 27.3N	102 39.9E	3.0103	3.015	15°A	2.0	13.5
007	20514.6	5.1	42 56N	99 57E	42 38.0N	99 53.5E	2.7525	2.750	15°F	2.5	28.4
008	20528.8	9.6	41 58N	99 43E	41 40.1N	99 39.5E	3.0404	3.040	15°F	2.5	16.3
009	20541.5	8.4	41 07N	99 31E	40 48.3N	99 27.3E	3.0404	3.040	15°A	2.5	17.0
010	20592.7	6.9	37 38N	98 43E	37 19.3N	99 39.9E	3.2598	3.259	15°F	3.0	- 6.4
011	20604.9	6.9			36 29.4N	98 29.2E	3.2275	3.230	15°A	3.0	- 10.6
012	20710.9	6.9	29 34N	97 04E	29 15.6N	97 01.3E	3.1639	3.164	15°F	3.0	12.
013	20723.1	6.9			28 25.7N	96 51.8E	3.1015	3.104	15°A	3.0	12.
014	20811.5	6.9	22 42N	95 48E	22 23.2N	95 45.7E	3.1326	3.137	15°F	3.5	10.
015	20823.7	6.9			21 33N	95 36.9E	3.1015	3.105	15°A	3.5	10.

TOP SECRET - GAMBIT

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Handle Via BYEMAN Controls Only

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PHOTO-MAP POSITIONING

Rev D39

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A	192	1.0N	0	33.0S	0	1.8	.5	.22				15,000
002A	192	2.0S	0	32.2S	1.3E	1.7	.5	.08				15,000
003						1.7	.5	.19				
004						1.5	.5	.09				
005A	194	0.6N	0.8E	20.0S	0	1.5	.3	.05				4,000
005B		0.7N	0.8E									4,000
005C		1.2N	0.4E									4,000
006C	194	0.2S	0.4W	21.8S	2.0E	1.4	.3	.16				4,000
007A	192	3.0S	0.3E	19.5S	0.5W	1.5	.3	.09				15,000
007B		1.0S	0.3W									15,000
008A	191	1.6N	1.7W	20.7S	0	1.5	.3	.01				15,000
009	191	0.4S	1.2W	20.0S	0.6W	1.5	.3	.01				15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
BYE 2

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PHOTO-MAP POSITIONING

Rev D39

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
009B		0.7S	1.3W			1.5	.3					15,000
010						1.5	.2	.02				
011						1.5	.2	.08				
012						1.5	0					
013						1.5	0	.08				
014A	189	3.0N	0	20.5S	2.2W	1.5	0	.14				1,200
014B		0.7N	0.7E									1,200
015A	189	0.5S	0.4E	20.5S	0.5E	1.5	0	.11				1,200
#015B		2.5N	1.0E									1,200

*This data should be corrected by the amount shown in the M,C,D, (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

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Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D39

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.12	1.56	1.62	23.4	2.07	1.92	95.0
002	1.12	1.49	1.51	23.4	2.10	1.92	94.9
003	1.38	2.04	2.35	30.6	1.78	2.17	93.9
004	1.02	1.92	2.84	30.6	1.82	2.16	93.8
005	0.81	2.12	5.22	33.9	2.12	2.15	93.5
006	0.60	2.10	6.16	33.9	2.10	2.18	93.4
007	1.16	1.72	1.85	44.7	1.31	2.08	92.2
008	1.64	1.80	1.22	45.6	2.63	2.04	92.1
009	1.62	1.84	1.31	45.6	2.32	1.92	92.1
010	0.40	2.20	10.56	50.0	2.11	-	91.8
011	0.72	2.14	5.96	50.0	2.08	-	91.7
012	-	-	-	58.1	2.04	2.28	91.4
013	-	-	-	58.1	1.99	2.26	91.4

TOP SECRET - GAMBIT
BYEMAN Controls Only
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GAMBIT
A-...

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Controls Only

PHOTOGRAPHIC EVALUATION

Rev D30 (Contd)

Acq. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.85	1.33	1.71	65.0	2.01	-	91.5
015	0.88	1.44	1.86	65.0	1.99	-	91.5

~~TOP SECRET~~ - GAMBIT

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TOP SECRET - GAMBIT

COMMAND INFORMATION

Rev D40

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	25408.8	7.6	64 55N	89 58E	69 33.8N	89 39.1E	2.5167	2.519	15°F	.5	- 34.7
002	25423.8	7.6			68 34.9N	88 48.1E	2.5673	2.569	15°A	.5	- 34.7
003	25459.2	7.6	66 36N	87 17E	66 14.9N	87 02.5E	2.9805	2.998	15°F	1.5	14.2
004	25472.1	7.6			65 23.7N	86 28.3E	2.9510	2.952	15°A	1.5	14.2
005	25591.2	7.2	57 48N	82 33E	57 26.5N	82 25.2E	2.2783	2.281	15°F	2.0	41.1
006	25615.0	7.7	56 12N	81 55E	55 50.6N	81 47.5E	2.8642	2.867	15°F	2.0	22.7
007	25627.2	7.7	55 23N	81 36E	55 01.4N	81 29.2E	2.8359	2.837	15°A	1.5	23.4
008	25692.8	8.3	50 57N	80 06E	50 35.8	80 00.1E	2.3946	2.397	15°F	1.5	- 40.4
009	25708.5	8.3			49 32.2N	79 40.8E	2.4671	2.468	15°A	1.5	- 40.4
010	25737.2	7.6	47 57N	79 12E	47 35.7N	79 07.2E	3.0708	3.070	15°F	2.5	13.5
011	25750.1	7.6			46 43.3N	78 52.7E	3.0404	3.041	15°A	2.5	13.5
012	25779.2	6.9	45 06N	78 26E	44 45.5N	78 21.3E	3.1015	3.106	15°F	2.5	- 17.0
013	25791.4	6.9			43 55.4N	78 08.7E	3.1326	3.137	15°A	2.5	- 17.0
014	25874.3	7.6	38 38N	76 52E	38 17.3N	76 48.8E	3.0708	3.077	15°F	3.0	17.0
015	25887.2	7.6			37 24.7N	76 37.2E	3.0103	3.015	15°A	3.0	17.0

TOP SECRET - GAMBIT
A-137
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D#0 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	25905.0	7.0	36 33N	76 25E	36 12.1N	76 21.5E	3.3585	3.361	15°F	3.0	4.3

TOP SECRET - GAMBIT
A-138
Handle Via BYEMAN
Controls Only

Approved for Release: 2018/09/11 C05103024

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE 27660-68

PHOTO-MAP POSITIONING

Rev D40

Acc/ PsM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A		0.6S	2.6W	25.4S	0	1.2	.4	.09				6,000
002A		0.7S	1.9W	24.8S	0.8W	1.3	.4	.09				6,000
003A	198	0	0.5E	25.5S	0	1.3	.4	.59				10,000
#003B		4.0N	0									--
004A	197	0	0	26.0S	1.5E	1.4	.4	.03				10,000
004B		0.5S	0.5W									--
005A		2.5N	1.6E	23.5S	0	1.5	.5	.12				3,000
006A	184	2.2N	1.1W	24.0S	0	1.6	.5	.10				800
006B		2.1N	1.7W									--
007A	184		0.2E	23.5S	0	1.7	.5	.04				800
007B			0.3W									--
008						1.8	.5	.10				--

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column.
See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT
A-139
Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D#0 (Contd)

Acc/ PWM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
009						1.9	.6	.04				--
010						2.0	.6	.03				--
011						2.1	.6	.02				--
012A	190	0.6N	1.7W	25.0S	1.0E	2.2	.6	.14				3,000
012B		2.2N	1.6W									--
013A	189	0.6N	1.3W	24.8S	1.0W	2.3	.7	.14				3,000
013B		2.2N	1.1W									--
014A		4.0S	1.0W	25.5S	1.5W	2.4	.7	.20				15,000
015						2.5	.7	.16				15,000
016A		1.5N	0.5W	25.0S	1.5E	2.0	.7	.07				15,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
Handle Via BYEMAN Controls Only
A-141

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D40

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	1.67	1.99	1.55	17.3	1.70	-	95.9
002	1.54	1.92	1.60	17.3	1.74	-	95.8
003	1.63	1.82	3.74	20.7	2.07	-	95.4
004	0.59	1.79	3.72	20.7	2.05	-	95.3
005	1.17	2.12	3.50	29.9	1.43	2.34	94.0
006	1.33	2.21	3.62	31.4	2.00	-	93.8
007	1.21	2.14	3.49	31.3	1.98	1.97	93.7
008	-	-	-	36.7	1.74	-	93.1
009	-	-	-	36.7	1.80	-	93.0
010	-	-	-	39.7	2.15	2.04	92.7
011	-	-	-	39.7	2.12	2.20	92.6
012	0.93	2.17	4.90	42.5	1.96	-	92.4
013	1.20	2.17	3.65	42.5	1.99	-	92.3

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
TOP SECRET - GAMBIT
BYE
A-141

Approved for Release: 2018/09/11 C05103024

Rev D40 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	1.38	1.99	2.12	49.1	2.15	2.14	91.8
015	1.44	2.08	2.39	49.1	2.10	2.19	91.8
016	1.11	10.08	10.08	51.2	2.35	-	91.7

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024
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Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D41

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Ephemeris Lat Deg Min	Best Ephemeris Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mir-ror Pos.	Crab Deg.	Roll Angle
001	30524.8	9.0	80 38N	89 49E	80 40.5N	89 59.2E	2.6715	2.688	15°F	.5	27.7
002	305391.	9.0			79 53.1N	86 33.5E	2.6451	2.652	15°A	.5	27.7
003	30654.7	50.0	72 45N	70 59E	72 47.8N	71 02.2E	3.2924	3.294	0	1.0	0
004	30727.5	8.3	68 00N	66 17E	68 03.4N	66 18.9E	2.8078	2.812	15°F	1.0	- 24.8
005	30741.1	8.3			67 09.6N	65 37.8E	2.8359	2.837	15°A	1.0	- 24.8
006	30865.3	6.9	58 50N	60 57E	58 53.4N	60 57.7E	3.1326	3.137	15°F	2.0	0
007	30875.3	7.4	58 10N	60 40E	58 13.1N	60 40.4E	3.1639	3.163	15°A	2.0	0
008	30899.9	9.7	56 31N	59 59E	56 34.0N	60 00.0E	2.9524	2.952	15°F	2.0	19.1
009	30912.8	9.7			55 41.9N	59 40.0E	2.9218	2.921	15°A	2.0	19.1
010	30942.3	6.9	53 40N	58 56E	53 26.5N	58 51.4E	3.3921	3.397	0	2.0	2.8
011	30972.7	6.9	51 36N	58 15E	51 39.5N	58 15.9E	3.1639	3.164	15°F	2.5	5.7
012	30984.9	6.9			50 50.1N	58 00.3E	3.1326	3.137	15°A	2.5	5.7
013	31006.5	7.3	49 19N	57 33E	49 22.4N	57 33.6E	3.0404	3.043	15°F	2.5	15.6
014	31018.0	7.3	48 33N	57 19E	48 35.7N	57 20.0E	3.0404	3.043	15°A	2.0	15.6
015	31144.1	6.9	39 59N	55 08E	40 02.2N	55 08.0E	3.0708	3.076	15°F	2.5	- 18.4

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
A-143
TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
BYE 2

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev 241 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Ephemeris Lat Deg Min	Best Ephemeris Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	31156.3	6.9			39 12.4N	54 56.6E	3.1326	3.137	15°A	2.5	- 18.4

TOP SECRET - GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D41

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Lon	Film Velocity	Attitude Error (sec)			MAP Accuracy
001						0	0	.82				--
002						0	0	.26				--
003						0	0	.05				--
004						0	0	.15				--
005						0	0	.04				--
006A	192	0.5S	0	3.1N	0	0	0	.14				900
006B		0.6N	0.1E									900
007A	192	1.2S	0.3W	3.1N	0.2E	0	0	.03				900
007B		0.9S	0.2W									--
008A	193	0.3S	0.2W	0.4S	0	0	0	.01				1,200
008B		0.5N	0.3W									--
009A	192	2.0S	0.2E	0	1.9W	0	0	.03				1,200
009B		1.7S	0.2E									--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Exploit Section.

TOP SECRET GAMBIT

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE 2[illegible]

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev 041 (Contd)

Acq/ TPM No.	Azimuth of Photot (deg)	#Positioning Error In-Track (NM)	#Positioning Error Cross Track (NM)	#Predict Error In-Track (NM)	#Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
010						0	0	.14				--
011						0	0	.00				--
012						0	0	.14				--
013						0	0	.08				--
014						0	0	.08				--
015A		1.6S	0.7W	3.2N	0.4E	0	0	.17				3,500
016A		3.2S	0.2W	4.2N	2.2W	0	0	.14				3,500

#This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

[illegible]

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D41

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud [illegible]	Altitude
	Dmin	Dmax					
001	0.76	1.17	1.57	5.6	2,13	1,99	97,7
002	0.92	0.99	1.08	5.6	2.11	1,14	97,6
003	-	-	-	13.4	13.96	1,78	96,4
004	1.53	2.12	2.58	18.8	2,10	1,96	95,7
005	1.62	2.04	1.96	18.8	2.12	1,89	95,6
006	0.39	2.00	8.80	28.2	2.01	-	94,4
007	0.43	1.97	7.67	28.0	2.17	-	94,3
008	0.63	2.04	6.32	30.6	2.57	-	94,0
009	0.61	2.01	6.10	30.6	2.54	-	93,9
010	-	-	-	33.0	2,21	2,02	93,7
011	-	-	-	35.5	2,04	2,19	93,4
012	-	-	-	35.5	2,01	2,17	93,3
013	-	-	-	37.9	2,04	2,23	93,1

TOP SECRET GAMBIT

A-147

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

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Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev 041 (Contd)

Acq. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	-	-	-	37.8	2.04	2.23	93.0
015	0.87	1.56	2.15	47.3	1.97	2.10	92.2
016	1.00	1.80	2.46	47.2	2.01	2.16	92.1

TOP SECRET - GAMBIT

Handle Via [redacted]
Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D42

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	35915.9	7.6	74 54N	52 00E	74 58.8N	52 06.3E	2.6189	2.624	15°F	1.0	29.8
002	35930.9	7.6			74 01.8N	50 40.0E	2.5930	2.596	15°A	1.0	29.8
003	36004.9	7.6	69 10N	45 11E	69 14.7N	45 14.3E	2.9510	2.953	15°F	1.0	18.4
004	36017.8	7.6			68 23.9N	44 31.3E	2.9805	2.986	15°A	1.0	18.4
005	36064.1	9.6	65 15N	42 16E	63 20.5N	42 18.4E	2.7252	2.730	15°F	1.0	28.4
006	36079.0	7.6	64 16N	41 39E	64 21.2N	41 41.4E	2.7525	2.753	15°A	1.5	29.1
007	36102.1	6.9	62 44N	40 36E	62 48.9N	40 48.6E	3.1326	3.136	15°A	1.5	4.3
008	36155.5	7.0	59 09N	39 01E	59 14.7N	39 03.1E	2.2558	2.255	15°F	2.0	41.8
009	36171.2	7.0	58 06N	38 34E	58 11.5N	38 35.7E	2.2113	2.213	15°A	1.0	43.2
010	36182.5	5.1	57 21N	38 15E	57 26.0N	38 16.8E	2.6451	2.647	0	1.5	36.9
011	36204.1	7.6	55 54N	37 41E	55 58.9N	37 42.5E	2.9805	2.987	15°F	2.0	17.0
012	36217.0	7.6			55 06.7N	37 23.0E	2.9510	2.953	15°A	2.0	17.0
013	36236.9	6.5	53 33N	36 50E	53 38.2N	36 51.4E	2.9218	2.9235	15°A	2.0	25.5
014	36274.1	6.9	51 10N	36 03E	51 15.6N	36 04.3E	2.6982	2.704	15°F	1.5	32.6
015	36288.4	6.9			50 17.6N	35 46.3E	2.7800	2.787	15°A	1.5	32.6

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

BYE 24[illegible]

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

TOP SECRET GAMBIT
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Handle Via BYEMAN Controls Only

COMMAND INFORMATION

Rev D42 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
016	36305.2	9.0	49 04N	35 25E	49 09.4N	35 25.8E	3.1639	3.166	15°F	2.5	- 8.5
017	36317.4	9.0			48 19.9N	35 11.4E	3.1955	3.200	15°A	2.5	- 8.5
018	36333.4	5.6	47 10N	34 52E	47 14.8N	34 53.1E	3.3585	3.359	0	2.5	9.9
019	36356.0	6.9	45 38N	34 27E	45 42.9	34 28.2E	3.1326	3.137	15°F	2.5	- 13.5
020	36368.2	6.9			44 53.2N	34 15.1E	3.1639	3.168	15°A	2.5	- 13.5
021	36496.8	6.9	36 03N	32 11E	36 08.0N	32 12.3E	2.6715	2.673	15°F	3.0	31.9
022	36511.1	6.9			35 10.1N	31 59.9E	2.5930	2.599	15°A	3.0	31.9
023	36554.8	5.0	32 06N	31 23E	32 11.4N	31 23.4E	3.1015	3.106	15°F	3.0	13.5
024	36575.4	6.9	30 42N	31 06E	30 47.0N	31 06.8E	3.1639	3.169	15°F	3.0	- 14.9
025	36587.6	6.9			29 57.1N	30 57.1E	3.1955	3.202	15°A	3.0	- 14.9
026	36613.4	6.9	28 06N	30 36E	28 11.4N	30 36.9E	3.4260	3.433	0	3.0	6.4
027	37135.8	30.0	07 37S	24 38E	07 32.1S	24 38.9E	3.0103	3.007	0	3.0	21.3

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev 042

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001								.19				--
002								.11				--
003								.07				--
004								.18				--
005								.18				--
006								.02				--
007								.11				--
008								.04				--
009								.08				--
010								.07				--
011A	194	0.3N	0.3W	1.5N	0.2W			.22				700
011B		0.6N	0.8W									600

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

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TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D42 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
012A	194	1.5S	0.6W	2.0N	2.0W			.07				700
012B		2.2S	1.2W									600
013A	190	3.1N	1.1W	4.2N	0.0			.06				600
013B		3.2N	0.9W									--
#014A	190	1.2S	1.5W	4.6N	1.0W			.21				600
014B		0.3S	0.3W									--
014C		0.2N	0.7W									--
015A	190	2.2S	0.8W	4.2N	3.2W			.25				600
#015B		10.5S	0.5E									--
015C		3.0S	0.3E									--
016								.07				--

#Questionable BM
*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
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Handle Via Channels Controls Only

Approved for Release: 2018/09/11 C05103024

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Handle Via BYEMAN Controls Only

TOP SECRET GAMBIT

PHOTO-MAP POSITIONING

Rev D42 (Contd)

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
017								.14				--
018A	192	0.7S	0.0	4.7N	0.2E			.01				700
019A	190	0.3S	0.8W	4.1N	0.0			.14				1,100
019B		0.2S	0.7W									--
020A	190	3.0S	0.9W	5.0W	1.8W			.13				1,100
020B		3.0S	1.0W									--
021								.56				--
022								.23				--
023A	187	1.2S	0.5W	4.4N	0.0			.14				--
023B		1.2S	0.4W									--
024								.16				--
025								.20				--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Rev D42 (Contd)

Acc/ P&M No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
026A	191	1.2S	0.8E	5.0N	0.0			.20				--
026B		1.2S	0.7E									--
027								.32				--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT

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Handle Via [redacted] Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

PHOTOGRAPHIC EVALUATION

Rev D42

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	11.7	1.78	1.80	96.7
002	-	-	-	11.8	1.76	1.76	96.6
003	-	-	-	17.6	2.05	1.82	95.8
004	-	-	-	17.6	2.07	1.80	95.7
005	-	-	-	21.6	2.32	2.04	95.2
006	-	-	-	21.7	1.89	2.01	95.1
007	-	-	-	23.4	2.01	1.90	94.9
008	-	-	-	28.1	1.37	2.20	94.4
009	-	-	-	27.9	1.34	2.14	94.2
010	-	-	-	29.3	1.25	2.10	94.1
011	0.55	2.10	4.97	31.2	2.07	-	93.9
012	0.62	2.06	5.57	31.2	2.05	-	93.8
013	0.72	2.04	4.82	32.7	2.49	1.55	93.6

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D42 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	1.00	2.08	3.76	36.0	1.69	1.96	93.3
015	0.94	1.97	3.29	36.0	1.75	-	93.2
016	-	-	-	38.1	2.59	1.86	93.0
017	-	-	-	38.1	2.62	1.94	93.0
018	0.74	2.03	4.62	39.6	1.82	2.13	92.8
019	0.38	1.86	6.36	41.6	2.01	-	92.7
020	0.42	1.83	4.70	41.5	2.04	2.05	92.6
021	-	-	-	51.3	1.67	2.20	91.9
022	-	-	-	51.3	1.61	2.24	91.9
023	0.50	1.48	2.84	55.2	1.50	2.04	91.8
024	1.00	2.04	3.59	56.6	2.04	2.18	91.7
025	1.24	2.06	2.86	56.6	2.06	1.23	91.7
026	0.56	2.00	5.23	58.8	2.23	-	91.7
027	-	-	-	85.5	7.72	2.28	96.6

TOP SECRET GAMBIT

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D+3

Rec No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
002	41206.3	7.6	81 25N	49 48E	81 30.3N	50 13.4E	3.0103	3.023	15°F	.5	5.0
003	41113.3	7.6			80 49.9N	46 31.0E	3.0103	3.012	15°A	.5	5.0
003	41223.5	30.3	74 06N	28 41E	74 12.7N	28 48.9E	3.2924	3.300	0	1.0	- 4.3
004	41538.4	18.3	53 14N	14 40E	53 70.7N	14 41.6E	2.6451	2.636	0	1.5	- 40.4
005	41563.7	15.0	51 32N	14 06E	51 39.2N	14 07.6E	2.8929	2.897	0	1.5	- 33.3
006	41693.6	8.3	42 44N	11 39E	42 51.1N	11 40.1E	2.8929	2.897	15°F	2.5	23.4
007	41707.2	8.3			41 55.7N	11 26.7E	2.8359	2.835	15°A	2.5	23.4

Handle Via BYEMAN Controls Only

TOP SECRET GAMBIT

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

TOP SECRET · GAMBIT
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PHOTO-MAP POSITIONING

Rev D4.3

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001								.42				--
002								.06				--
003								.23				--
004A	181	1.6N	0.2E	5.5N	0.4W			.34				5,300
[redacted]		2.2N	0.5E									--
[redacted]C		1.5N	1.5E									5,000
005A	191	4.1N	0	5.5N	0.8W			.14				350
006A	195	0	1.0E	4.0N	0			.14				4,000
006B		0	0									--
007A	191	1.0S	0	2.0N	3.0W			.03				4,000

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

Approved for Release: 2018/09/11 C05103024

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Handle Via BYEMAN Controls Only

TOP SECRET - GAMBIT

PHOTOGRAPHIC EVALUATION

Rev D43

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.24	0.38	1.77	4.5	2.10	-	97.7
002	0.26	0.44	1.78	4.5	2.10	-	97.6
003	-	-	-	12.0	8.47	1.56	96.5 *
004	0.75	1.76	3.31	33.4	4.09	2.04	93.5
005	0.82	1.63	2.57	35.1	3.79	2.24	93.3
006	0.72	1.64	2.74	44.5	2.17	2.36	93.4
007	0.71	1.96	4.20	44.5	2.12	2.38	92.3

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D47

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	62921.0	9.0	39 38N	77 22W	39 37.1N	77 22.8W	3.1326	3.125	15°F	3.0	9.9
002	62933.2	9.0			38 47.3N	77 34.0W	3.1015	3.111	15°A	3.0	9.9
003	62954.3	8.0	37 22N	77 53W	37 21.1N	77 53.1W	3.4603	3.465	0	3.0	- 2.8

TOP SECRET GAMBIT
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Handle Via BYEMAN Controls Only

TOP SECRET GAMBIT

PHOTO-MAP POSITIONING

Rev D47

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001A								.24				--
001B												--
002A								.31				--
002B												--
003A								.14				--
003B												--
004A								.37				--
004B												--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

Handle Via BYEMAN Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTOGRAPHIC EVALUATION

Rev D47

Acc. No.	Density		Brightness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	-	-	-	47.8	2.56	-	91.7
002	-	-	-	47.8	2.53	-	91.7
003	-	-	-	49.7	2.57	-	91.6

TOP SECRET - GAMBIT
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Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT
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Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

COMMAND INFORMATION

Rev D48

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mirror Pos.	Crab Deg.	Roll Angle
001	68016.1	2.0	53 13N	95 42W	53 07.7N	95 44.1W	3.1955	3.211	15°A	2.0	- 2.8
002	68018.4	6.0	53 03N	95 45W	52 58.3N	95 47.3W	3.1955	3.194	15°F	2.0	- 2.8
003	68025.5	8.0	52 34N	95 55W	52 29.6N	95 56.9W	3.3598	3.376	0	2.0	- 13.5
004	68039.0	5.0	51 40N	96 13N	51 34.9N	96 14.7W	3.4260	3.429	0	2.0	- 1.4
005	68124.4	9.1	45 53N	97 54W	45 47.9N	97 55.6W	3.1326	3.135	15°F	2.5	- 13.5
006	68136.5	3.0	45 04N	98 07W	44 58.7N	98 08.6W	3.1955	3.203	15°A	2.5	- 13.5
007	68141.4	4.2	44 44N	98 12W	44 38.7N	98 13.7W	3.1326	3.139	15°A	2.5	- 17.0
008	68180.8	2.7	42 03N	98 52W	41 58.1N	98 53.7W	3.0404	3.044	15°F	2.5	16.3
009	68187.1	2.7	41 38N	98 59W	41 32.4N	98 59.9W	3.2598	3.255	0	2.5	16.3
010	68193.0	2.7			41 08.4N	99 05.6W	3.0103	3.016	15°A	2.5	16.3
011	68221.7	4.0	39 16N	99 31W	39 11.2N	99 32.7W	3.7252	2.725	0	2.0	35.4
012	68226.1	4.0	38 58N	99 35W	38 53.3N	99 36.7W	3.7252	2.781	0	1.0	35.4
013	68275.6	10.0	35 36N	100 20W	35 31.0N	100 20.8W	3.4948	3.499	0	3.0	- 2.8
014	68333.5	4.0	31 04N	101 08W	31 34.1N	101 09.1W	3.6733	2.675	15°F	3.0	28.4
015	68346.6	4.0	30 46N	101 18W	30 40.4N	101 18.6W	2.9218	2.824	0	2.5	[illegible]

Handle Via BYEMAN Controls Only
TOP SECRET GAMBIT
TOP SECRET GAMBIT
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Approved for Release: 2018/09/11 C05103024

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COMMAND INFORMATION

Rev D48 (Contd)

Acc No.	System Time Sec	Burst Time Sec	Command Position		Best Epheremis		Film Velocity in./sec.		Mirror Pos.	Crab Deg.	Roll Angle
			Lat Deg Min	Long Deg Min	Lat Deg Min	Long Deg Min	Command	Actual			
016	68359.6	4.0	29 53N	101 29W	29 47.2N	101 29.9W	2.8078	2.811	15°A	2.9	30.9

TOP SECRET · GAMBIT
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Handle Via Byeman Controls Only

Approved for Release: 2018/09/11 C05103024

Approved for Release: 2018/09/11 C05103024

PHOTO-MAP POSITIONING

Rev D48

Acc/ PoM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
001						0.1	0.1	.48				--
002						0.1	0.1	.05				--
003A	195	2.0S	0	0		0.1	0.1	.48				3,000
003B		0	0.6W									--
004A	183	1.5S	0			0.1	0.1	.09				3,000
004B		1.6S	0.6E									--
005A	191	0.7S	0			0.1	0.1	.08				3,000
005B		0.7S	0									--
006A		1.9S	0			0.1	0.1	.23				3,000
007A		2.1S	1.0W			0.1	0.1	.20				--
008A	183	0.6S	0			0.1	0.1	.12				475
008B		1.2S	0.7E									--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET - GAMBIT
Handle Via BYEMAN Controls Only
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TOP SECRET - GAMBIT
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TOP SECRET GAMBIT

PHOTO-MAP POSITIONING

Rev D48 (Contd)

Acc/ PBM No.	Azimuth of Photo ℄ (deg)	*Positioning Error		*Predict Error		M.C.D. Error (Δ in min)		Film Velocity Error (%)	Attitude Error (deg)			Map Accuracy (± ft)
		In-Track (NM)	Cross Track (NM)	In-Track (NM)	Cross Track (NM)	Lat	Long		P	R	Y	
009A	185	1.4S	0			0.1	0.1	.15				475
009B		1.4S	0	0	0							--
010A	187	0	0			0.1	0.1	.19				475
010B		0	0									--
011A	195	0	0			0.1	0.1	.01				3,000
011B		1.1S	0.3N									--
012A	198	1.1S	1.8W			0.1	0.1	.21				300
012B		1.0S	0.5E									550
013A	190	1.0S	0.8W			0.1	0.1	.12				750
013B		0.7S	0.5W									750
013C		0	0									3,000
014A	187	0.3N	0.9E			0.1	0.1	.06				700
014B		0.2S	2.2E									--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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Rev D48 (Contd)

Acc/ PBM No.	Azimuth of Photo℄ (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) R	Attitude Error (deg) Y	Map Accuracy (± ft)
#015A	186	1.1S	0.2E			0.1	0.1	.08				700
#015B		1.0S	0.5E									800
016A		1.5S	0.6E			0.1	0.1	.11				3,000

Questionable BM

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

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TOP SECRET - GAMBIT
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PHOTOGRAPHIC EVALUATION

Rev D48

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.69	1.92	4.01	33.4	0.75	-	93.0
002	0.74	1.72	2.96	34.3	1.82	-	93.0
003	0.60	2.14	6.91	34.4	2.49	-	92.9
004	0.69	1.98	4.47	35.3	1.69	2.14	92.8
005	0.43	1.20	2.67	41.6	2.59	2.28	92.2
006	0.54	1.14	2.07	41.8	1.02	2.32	92.1
007	0.71	1.34	2.01	41.9	1.31	2.33	92.1
008	0.56	1.45	2.81	45.5	0.89	2.08	91.8
009	0.59	1.62	3.23	45.5	0.97	1.98	91.8
010	0.76	1.32	1.86	45.9	0.87	2.14	91.8
011	0.68	1.60	2.76	47.9	1.05	-	91.6
012	0.50	1.48	3.18	48.2	1.05	-	91.6
013	0.62	1.46	2.59	51.5	3.18	-	91.4

TOP SECRET - GAMMA

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Controls Only

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PHOTOGRAPHIC EVALUATION

Rev D48 (Contd)

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
014	0.73	1.60	2.60	56.0	1.02	-	91.3
015	0.84	1.68	2.52	56.4	1.15	-	91.3
016	0.96	1.80	2.53	56.8	1.09	-	91.3

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TOP SECRET

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COMMAND INFORMATION

Rev D49

Acc No.	System Time Sec	Burst Time Sec	Command Position Lat Deg Min	Command Position Long Deg Min	Best Epheremis Lat Deg Min	Best Epheremis Long Deg Min	Film Velocity in./sec. Command	Film Velocity in./sec. Actual	Mir-ror Pos.	Crab Deg.	Roll Angle
001	73534.3	9.0	38 04N	121 52W	37 56.0N	121 53.5W	3.1955	3.194	15°F	3.0	– 4.3
002	73546.5	9.0			37 06.1N	122 04.4W	3.2275	3.225	15°A	3.0	– 4.3

TOP SECRET GAMBIT

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PHOTO-MAP POSITIONING

Rev D49

Acc/ PBM No.	Azimuth of Photo (deg)	*Positioning Error In-Track (NM)	*Positioning Error Cross Track (NM)	*Predict Error In-Track (NM)	*Predict Error Cross Track (NM)	M.C.D. Error (Δ in min) Lat	M.C.D. Error (Δ in min) Long	Film Velocity Error (%)	Attitude Error (deg) P	Attitude Error (deg) T	Attitude Error (deg) Y	Map Accuracy (± ft)
001A		0.35N	0	12.2S	0.2E	.2	.1	.05				300
001B		2.3N	0									450
002A		1.3S	0	12.4S	1.7W	.2	.1	.08				500
002B		1.7S	0									--

*This data should be corrected by the amount shown in the M.C.D. (Mission Correlation Data) column. See detailed explanation in Geoplot Section.

TOP SECRET GAMBIT

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TOP SECRET - GAMBIT

PHOTOGRAPHIC EVALUATION

Rev D49

Acc. No.	Density		Bright-ness Range	Sun Angle (deg)	Total Frame Length (ft)	Cloud Dmax	Altitude (NM)
	Dmin	Dmax					
001	0.30	1.54	5.96	49.5	2.62	-	91.5
002	0.48	1.90	6.14	49.6	2.65	-	91.4

TOP SECRET - GAMBIT

BYE 24565-64

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4006/64

APPENDIX B

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4006/64

Photograph No. 19

State Capitol, Madison, Wisconsin

Rev D15, Frame 005

Altitude: 94 NM Obliquity: 16.7 degrees

Scale: 1/93,000; Strip photo

40X

PHOTO - MAP POSITIONING DATA
REV D*15

ACC/FRM No	AZIMUTH OF PHOTO(DEG)	POSITIONING ERROR	
		IN-TRACK	CROSS-TRACK
005A	190	1.6 S	0.5 E
005B		1.0 S	0.5 E

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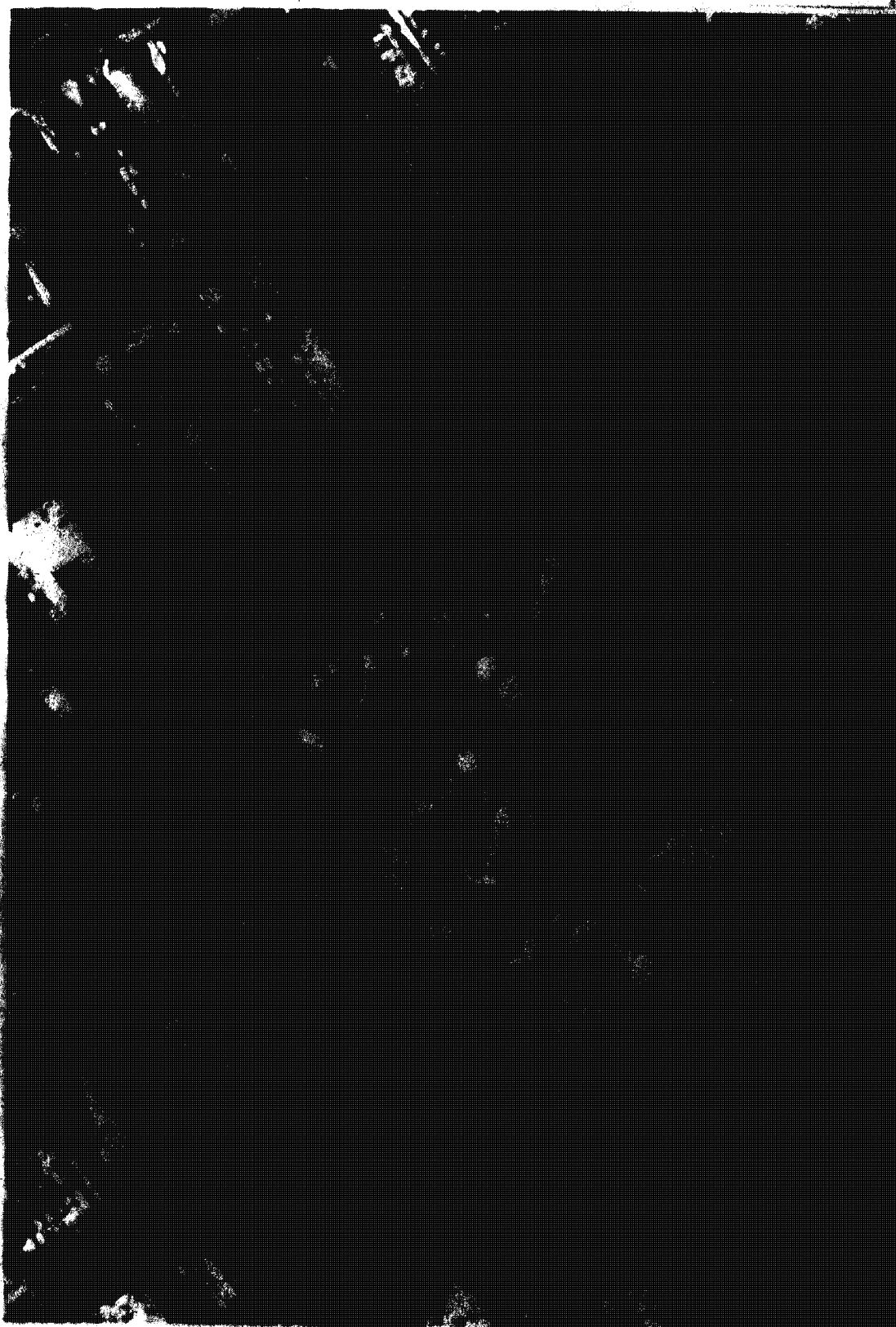
BYE24555-64



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PERFORMANCE EVALUATION TEAM
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Photograph No. 20

Pier and small pleasure boats, Panama City, Florida

Rev D31, Frame 014

Altitude: 92.2 NM Obliquity: 16.5 degrees

Scale: 1/91,200; Strip photo

40X

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Photograph No. 21

This is an example of almost pure X-axis motion, caused in this case by film velocity variations during camera startup. Notice how the "X" separation increases from right to left in the double yaw slit image area. This is typical of the startup banding conditions. The maximum IMC error indicated at the left side of the picture is approximately eight percent. In the main image area, notice the smear on those edges nearly perpendicular to the fiducial line; it is quite severe at the left edge of the picture.

Rev D31, Frame 008

Altitude: 92.4 NM Obliquity: 2.0 degrees

Scale: 1/87,600; Strip with mirror in zero position, 40X

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Photograph No. 22

This is an example of pure Y-axis motion, which occurred during a period of roll settling. A roll rate of approximately 0.1 degrees per second is indicated here. Note the smear along those edges, in the main image area, which are more or less parallel to the fiducial line.

Rev D31, Frame 008

Altitude: 92.4 NM Obliquity: 2.0 degrees

Scale: 1/87,600; Strip with mirror in zero position.

40X

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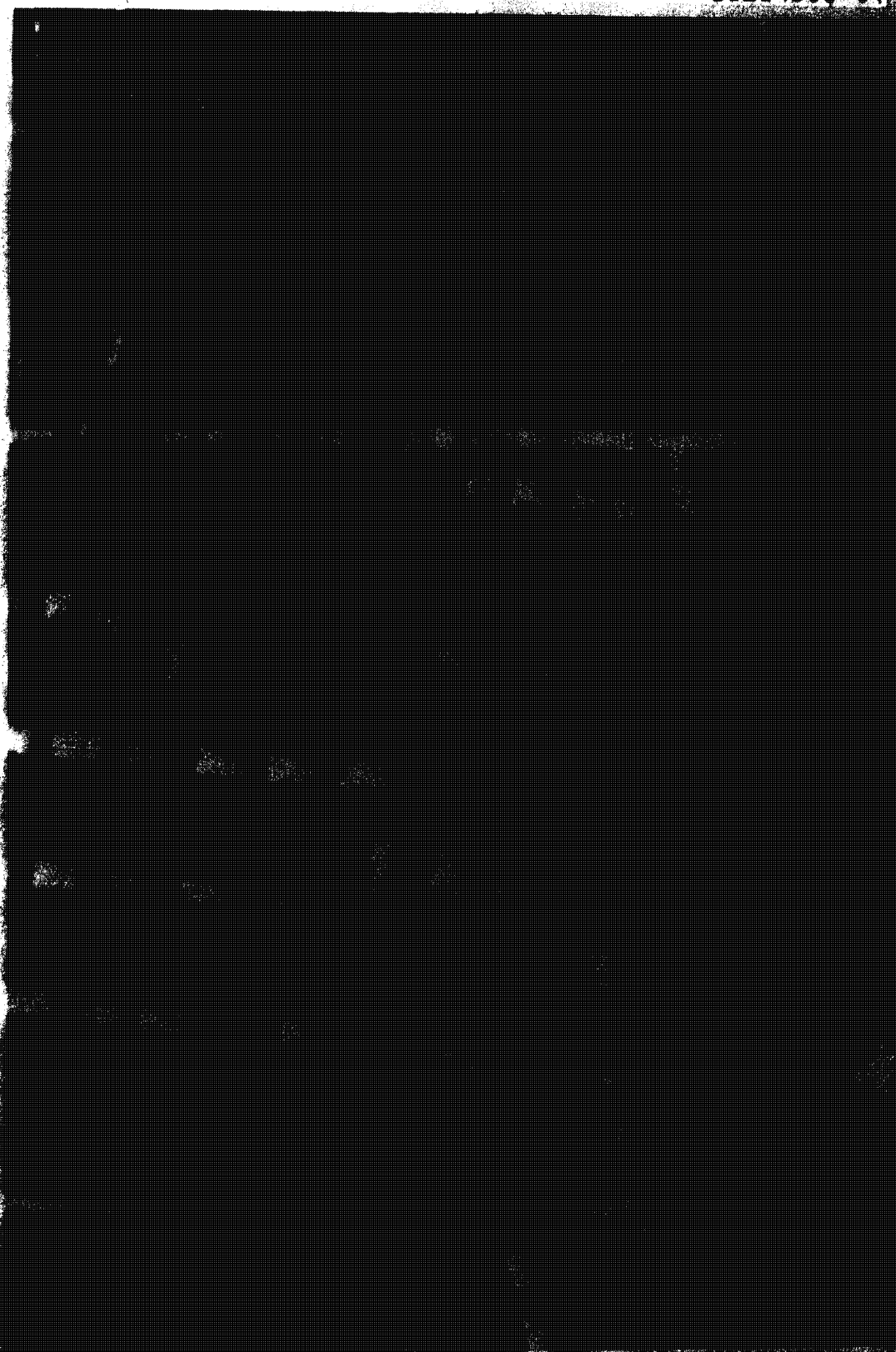

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Photograph No. 23

This is a case where no measurable motion is taking place. Notice the lack of smear and extreme detail visible in the main image area.

Rev D31, Frame 008

Altitude: 92.4 NM Obliquity: 2.0 degrees

Scale: 1/87,600; Strip with mirror in zero position, 40X

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GAMBIT B-10

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4083/64

Photograph No. 24

Railroad yard, Chatanooga, Tennessee.

The photograph was made from imagery in the approximate center of a frame at a point where no measurable vehicle motion was present. It represents a sample of the best photography available from this mission. Different types of railroad cars are clearly identifiable; individual rails are consistently seen; in some places, individual railroad ties are barely resolvable. A parked automobile is seen to have a particular type of wrap-around windshield.

Rev D31, Frame 008

Altitude: 92.4 NM Obliquity: 2.0 degrees

Scale: 1/87,600; Strip with mirror in zero position.

40X

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GAMBIT BYE24555-64

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4006/64

Photograph No. 26

Lockheed - STC Complex, Sunnyvale, California

Rev D49, Frame 001

Altitude: 91.5 NM Obliquity: 0.8 degrees

Scale: 1/89,900; Forward portion of stereo pair

10X

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PERFORMANCE EVALUATION TEAM
REPORT NO. 4005/64

Photograph No. 26

Satellite Test Center, Sunnyvale, California. In the center of the parking lot, behind the fourth car from the end, can be seen Capt Kohlhaas; as far as is known, the first man to pose for a satellite photograph!

Rev D49, Frame 001
Altitude: 91.5 NM Obliquity: 0.8 degrees
Scale 1/89,800; Forward portion of stereo pair.
40X

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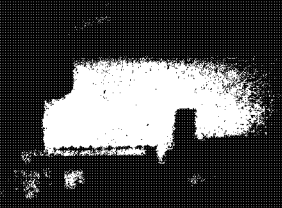

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Photograph No. 27

Aeronautical Chart and Information Center,
St. Louis, Mo.

Rev D15, Frame 009

Altitude: 93.5 NM, Obliquity: 22.4 degrees

Scale: 1/96,000; Strip photo; part of lateral triplet, 40X

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TOP SECRET
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