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27 July 1961

PHOTOGRAPHIC EVALUATION REPORT

Mission No: 9019 Photo Date: 7 July 1961 Evaluation No: FE 71-61
Camera No: 20 Filter, Main: W21 Filter, Horizon: W25
Film Type: J 22-7600 Evaluated by: [redacted]

1. Shutter Operation:
   a. Left horizon - Good
   b. Right horizon - Good

2. Slit Operation (main): Good

3. Camera Number (Image Quality): Good

4. Digitote Operation: The digitote "jumped" 0.5 seconds on pass 20 between frames 02 and 03, 7.4 seconds on pass 21 between frames 18, 19 slowly returning to normal on frame 26. On pass 22 the digitote was extremely erratic. The digitote image was sharp and distinct except on passes 21 and 22 where the tenth of a second digit blurred occasionally.

5. Film Metering: 0.32" to 0.43" Average 0.37"

6. Film Tracking: Good

7. Timing Pulse: Image moderately sharp. Double pulsing noted on pass 21 frame 19; pass 22 frame 15. See note #7 in remarks section.

8. Shrinkage Markers: Shrinkage marker on right end of format ragged, left shrinkage marker sharp. Measured distance between shrinkage markers along the X axis varies from 28.030 inches to 28.040 inches.

9. Fiducials:
   a. Main Camera - main fiducials were ragged throughout. End fiducials were fairly sharp except for a few passes i.e. 15.
   b. Horizon Cameras - fiducials were sharp and distinct throughout with the exception of the left fiducial of the starboard format which is indefinite throughout.

10. Flare: None observed

11. Light Leaks: Fogged frames noted on pass 1, frames 20, 21, 42; pass 3, frame 50; pass A15, frame 1; pass A16, frame 141; pass A17, frame 3; pass 19, frame 58; pass 20, frame 90; pass 22, frame 169. Edge fog on pass 15; pass 18; frame 84; passes 19, 21; pass 22, frames 170-171. See note #5 in remarks section on reflections.

12. Forward Overlap: Overlap averaged 08 to 50% to pass 21. Pass 21 showed some instances of a gap in overlap. Pass 22 shows numerous instances of gap in overlap ranging up to 10 nautical miles. This erratic condition began at approximately frame 80 and continued until frame 171, at which point a complete camera malfunction occurred.

13. Static Electricity: Pass A16, frame 146 and commencing with pass 20 static on leading edges throughout frames 59-66; pass 21 static on leading and trailing edges throughout; pass 22, edge static and on frames 169-171. Possible static on frames 110, 115, 120.

14. Pinholes: Very few

15. Abrasions and Scratches: Light scratches on leading and trailing edges throughout (outside format). Within format on pass 3, frame 14; pass 8, frame 4; pass A16,

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frames 2, 3; pass A18, frame 114; pass 22, frames 1, 150, 169-171. Small areas of emulsion removed on 58 frames.

16. Tearing: None

17. Processing Streaks: None

18. Pressure Marks (diagonals): Negative density streaks scattered throughout passes A2, 6, 7, 8, 9, 18 and 19, particularly noticeable on first ten frames of pass.

19. Water Marks: None. Chemical stains on 14 frames.

20. Blistering and Frilling: Blisters on five frames. No frilling

21. Density: Medium on descending passes; ascending passes - 60% thin, 40% medium.

22. Contrast: Descending passes - medium; ascending passes - 60% low, 40% medium.

23. Apparent Resolution: Generally as good as 9017 but in several cases on ascending passes doesn't appear as good as 9017 primarily due to low sun angle and scale.

24. Apparent Gramularity: Fine

25. Photo Quality: Good
    a. Degradation due to negative density diagonal streaks and desensitized spots.

26. Suitability for PI: 80% good, 15% fair, 5% poor.
    a. Degradation primarily due to low sun angle and secondarily to atmospheric conditions.
    b. In a few instances insufficient overlap was present.

Remarks:

1. The leading edge of the main format is indefinite throughout. The trailing edge is slightly ragged particularly to the right of the main fiducial throughout.

2. Beginning of ascending passes very thin due to low sun angle.

3. A film slippage malfunction similar to that found on passes A1, 1, 2, 3, 6, 8, 9, A12, 15, A16, A17, 20, 21, 22, has occurred on previous missions.

4. A malfunction in the form of a blank frame appears on the end of pass 7 and is similar in appearance to those found on 9017.

5. A pattern of fogging appears alternately at the beginning and end of 17 passes throughout the mission. The pattern seems to indicate a reflection from some part of the configuration. In addition to appearing at the beginning and end of the passes it is apparent within the format of some passes, particularly in those areas of thin density. In conjunction with this, there is a reflection along the leading edge of the first frame on passes 7, 19, and 21.

6. The first frame of passes 1, A2, 3, A12, 15, 19, 20, and 21 had closely spaced timing pulses at the beginning of the sweep reverting to normal spacing at the end of the sweep. This seems to indicate a gradual build-up of chimney speed to a normal rate.

7. Inspection of pass 21, frames 19-23, 38-40 seems to indicate a decreased scan rate resulting in more exposure than normal possibly in conjunction with an oscillator malfunction.

8. Desensitized spots scattered throughout mission.

9. Negative density spots probably result of emulsion flaking scattered throughout.

10. No horizons recorded on approximately 50% of each ascending pass due to altitude.

11. Average density of horizon formats heavy throughout.

12. Vertical heavy density streaks on pass 2, frames 43-46.

13. Small obstruction right edge of format on pass 3, frames 9-13.

14. Foreign matter on pass 8, frame 118; pass A12, frame 47; pass A15, frame 41; pass A16, frame 69; pass 22, frame 60.

15. Creases on pass A17, frame 75; pass 22, frames 169-171.

16. Fingerprint on pass 8, frame 194.

17. Manufacturing splice on pass A17, frame 70.

18. Titling streaked on pass 22, frames 76-171.

19. Emulsion removed from leading edge on pass 22 indicating probable tracking problem.

20. The camera malfunctioned on pass 22. Digitote jump, erratic timing pulses, exposure difference and lack of overlap on certain frames of pass 21 and 22 indicate an erratic scan rate which suggests a malfunction of the scan motor or chimney.

Special Notes:

Examination of the preflight reveals numerous fogged frames. There is a fairly sharp registration of the horizon fiducials, digitote and frequency marks. There is no registration of the main format except one frame which is double exposed and completely fogged. Main fiducials follow the same pattern as the main format. There is no registration of the horizon formats. Interval of digitote varies from 4.3 to 4.4 seconds. Average number of frequency marks per frame is 119. Fine scratches appear on both leading and trailing edges.

Pass 9 is an untitled engineering pass and contains 12 frames. There is a sharp registration of the horizon fiducials, digitote and frequency marks. Main format nondiscernible except right side and then extremely thin. Horizon format is nondiscernible. Main fiducials are nondiscernible except the right side of the last few frames. Interval of digitote varies from 4.2 to 4.4 seconds. Reflections are scattered throughout and slippage is apparent on last frame.