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(When Filled In)

FILE INFO

REPRODUCTION PROHIBITED

18 OCT 68 21 27

ACTION

~~TOP SECRET~~ 181648Z OCT 68 C1

ORONA

PROJECT SUNNY 1848

REF [REDACTED] 18 MAY 1968

1. AS REQUESTED IN PARA 1H OF REF MESSAGE, THIS REPORT SUMMARIZES THE ANALYSIS OF EXPOSURE OF THE PROJECT SUNNY TARGET ACQUISITIONS IN MISSION 1848. DATA WERE COLLECTED WHILE THE ORIGINAL NEGATIVES WERE AT [REDACTED] FOR THE ON/DP PRODUCTION OPERATIONS. PROCEDURES WERE ESSENTIALLY THE SAME AS THOSE USED DURING [REDACTED]

2. DUE TO IN-HOUSE LIMITATIONS ON RETENTION OF THE O-NEG, A NUMBER OF THE DATA POINTS FROM THE FIRST BUCKET REFLECTING OVERALL FRAME DENSITY MINIMUS AND MAXIMUS WERE NOT RECORDED AND ARE NOT HEREIN INCLUDED. OUR EXPERIENCE INDICATES THAT THIS HAS LITTLE OR NO EFFECT ON THE PRIMARY SUNNY DATA PROGRAM. THE APPROPRIATE COLUMNS FOR THOSE ACQUISITIONS AFFECTED WILL BE BLANK IN TABLE 1.

3. [REDACTED] INFORMED US OF THE APPROXIMATE LOCATIONS OF THE 31 PROJECT SUNNY TARGET ACQUISITIONS SCHEDULED FOR 1848. NINE (9) WERE APPARENTLY OBSCURED BY CLOUDS AND COULD NOT BE FOUND AND TWO (2) WERE OFF THE FORMAT.

Declassified and Released by the NRC

In Accordance with E.O. 12958

on NOV 26 1997

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5. THE FORWARD LOOKING CAMERA FAILED DURING PASS 181. AS A RESULT THERE ARE NO STEREO PAIR TARGET SUNNY ACQUISITIONS FOR SUBSEQUENT PASSES. ONLY THE AFT ACQUISITIONS.

6. THE TARGETS REPORTED ARE TAKEN FROM THE ORIGINAL BASE OF 25 STUDIED UNDER PROJECT SUNNY I, [REDACTED]

7. TABLE 1 BELOW SUMMARIZES THE ANALYSIS OF EACH TARGET ACQUISITION THE CRYPTOIC DESCRIPTORS AT THE TOP OF THE TABLE ARE DEFINED IN PARAGRAPH 8.

TABLE 1. TARGET FREIGHTNESS ANALYSIS:

NO TGT. IDENT REV FRM FNN FMX TNN TMX TDE TDC IED REC

SA EXPT PR

DESCRIPTION OF TARGET AREA

1 005 1-38A	56	19F	0.23	0.68	0.36	1.73	40.28	40.50
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02 3.46 0 263 594 350

SHIPS. SUBJECTIVELY UNDEREXPOSED.

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2 0051-33A 56 20A 0.32 0.86 0.47 2.11 40.13 40.23

22 2.63 D 364 891 538

SMIPS.

3 0001-5 199 2A 2.42 2.58 0.32 0.67 0.38 1.65 40.26 40.30

38 2.25 D 553 1066 399 813 518

RAILROAD CARS. NEAR EDGE OF FORMAT.

4 0251-52 199 1A N/A

32 2.25

TARGET OFF FORMAT. NO TRACE.

5 0001-62.1 199 1A N/A

32 2.25

TARGET OFF FORMAT. NO TRACE.

6 0100-70 165 7F NONE

32 2.99

CLOUD COVERED. NO TRACE.

7 0100-74 165 3A NONE

32 2.26

CLOUD COVERED. NO TRACE.

8 0101-130 54 11F NONE

34 3.17

CLOUD COVERED. NO TRACE.

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9 0161-13C

54 11A

NONE

34 2.41

FRAMES 5-18 CLOUD COVERED. NO TRACE.

10 0151-13C

165 9F

NONE

32 2.99

CLOUD COVERED. NO TRACE.

11 0151-13C

165 10A

NONE

32 2.26

CLOUD COVERED NO TRACE.

12 0163-5T5

150 22F 0.39 0.83 0.34 1.04 0.56 2.39 40.12 0.00

33 3.02 D 426 790 374 1100 580

CONVEYER-LIKE STRUCTURE.

13 0163-5T5

150 22A 0.47 0.92 0.37 1.23 0.72 2.16 40.03 0.00

33 2.27 D 602 1114 497 1760 830

CONVEYER-LIKE STRUCTURE.

14 0157-121P

215 22A

NONE

42 2.24

CLOUD COVERED. NO TRACE.

15 0204-13

52 21F

0.53 1.09 0.79 1.63 -0.01 0.00

38 3.11 D

538 1140 760

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RAILROAD CARS.

16 0224-13 52 21A 0.56 1.15 0.86 1.47 -0.05 0.00
 38 2.36 D 675 1501 1000

RAILROAD CARS.

17 0234-13 163 22A 0.37 0.95 0.41 1.19 0.54 1.38 20.13 40.10
 37 2.27 D 488 1160 540 1657 680

RAILROAD CARS.

18 0234-13 163 23F 0.37 0.80 0.37 1.27 0.53 1.49 40.14 40.10
 37 3.01 D 406 793 414 1561 550

RAILROAD CARS.

19 0246-67 87 23A 0.46 1.65 1.06 3.38 -0.17 -0.20
 43 2.26 D 595 5167 1360

PAD SUPERSTRUCTURE. SUBJECTIVELY OVEREXPOSED.

20 0246-SP 87 30F 0.76 1.39 0.46 1.61 1.08 3.88 -0.18 -0.20
 43 2.98 D 761 1974 499 3645 1160

PAD SUPERSTRUCTURE. SUBJECTIVELY OVEREXPOSED.

21 0246-SP 214 153A 0.51 1.36 0.41 1.72 1.09 6.88 -0.19 -0.20
 52 2.29 D 638 2190 535 7899 1400

PAD SUPERSTRUCTURE.

22 0231-27D 20 15A

NONE

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41 2.44

CLOUD COVERED. NO TRACE.

23 0281-27D 20 18F

41 3.21

CLOUD COVERED. NO TRACE.

24 0291-4D 84 92A

0.33 1.23 0.41 1.49 40.23 40.20

45 2.26 D

448 1774 550

BUILDINGS

25 0291-4D 84 93F

0.39 1.65 0.89 1.27 -0.07 0.00

45 2.99 D

431 4470 900

BUILDINGS

26 0291-4D 195 89A

0.40 0.87 0.37 1.38 0.63 1.50 40.08 0.00

55 2.24 D

532 1057 504 2341 770

STOCKPILES. LOCATED NEAR END OF FRAME.

27 0291-4D 211 92A

0.40 0.91 0.37 1.41 0.56 1.30 40.12 0.00

55 2.25 D

530 1110 502 2522 710

STOCKPILES.

28 0291-64 84 92A

0.31 1.03 0.46 1.52 40.19 40.20

45 2.26 D

403 1311 600

SHIPS

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29 0291-64

84 93F

0.32 1.20 0.58 1.29 40.11 0.00

45 2.99 D

353 1400 600

SHIPS

30 0291-64

195 89A

0.40 0.87 0.30 1.12 0.73 1.33 40.02 0.00

55 2.24 D 532 1057 401 1497 900

SHIPS. LOCATED NEAR END OF FRAME.

3 0291-64

211 92A

0.40 0.91 0.30 1.12 0.61 1.90 40.00 0.00

55 2.25 D 530 1110 399 1490 750

SHIPS.

8. DEFINITION OF CRYPTIC DESCRIPTORS:

NC - ITEM NUMBER. FOR REFERRING TO THIS MESSAGE.

TGT. IDENT - TARGET IDENTIFICATION. THIS IDENTIFIER IS THE
HAP-NPIC NUMBER.

REV - REVOLUTION NUMBER.

FRA - FRAME NUMBER AND CAMERA.

F - FORWARD CAMERA

A - AFT CAMERA

FMN - FRAME MINIMUM DENSITY AND APPARENT LUMINANCE. MINIMUM

DENSITY ON FIRST LINE (AND CORRESPONDING APPARENT LUMINANCE
IN FT-L ON THE SECOND) WHICH IS JUDGED TO CONTAIN INFORMATION
FOR THE ENTIRE FRAME IN WHICH THE TARGET APPEARS.

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- FMX - FRAME MAXIMUM DENSITY AND APPARENT LUMINANCE.** MAXIMUM DENSITY ON FIRST LINE (AND CORRESPONDING APPARENT LUMINANCE IN FT-L ON THE SECOND) WHICH IS JUDGED TO CONTAIN INFORMATION FOR THE ENTIRE FRAME IN WHICH THE TARGET APPEARS.
- TMM - TARGET MINIMUM AND DENSITY AND APPARENT LUMINANCE.** MINIMUM DENSITY ON FIRST LINE AND CORRESPONDING APPARENT LUMINANCE IN FT-L ON THE SECOND FOR OBJECTS OF INTEREST WITHIN THE TARGET AREA.
- TYX - TARGET MAXIMUM DENSITY AND APPARENT LUMINANCE.** MAXIMUM DENSITY ON FIRST LINE AND CORRESPONDING APPARENT LUMINANCE IN FT-L ON THE SECOND FOR OBJECTS OF INTEREST WITHIN THE TARGET AREA.
- TDB - TARGET DESIGN BRIGHTNESS AND DENSITY.** DENSITY ON FIRST LINE AND CORRESPONDING APPARENT LUMINANCE (BRIGHTNESS) IN FT-L ON THE SECOND FOR THE MOST IMPORTANT DETAILS IN THE TARGET AREA. THIS IS THE APPARENT LUMINANCE ON WHICH EXPOSURE SELECTION SHOULD BE BASED.
- TDC - TARGET DETAIL CONTRAST.** THE QUOTIENT OF THE APPARENT LUMINANCES FOR THE MOST IMPORTANT ADJACENT DETAILS WITHIN THE TARGET AREA.

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IED - INDICATED EXPOSURE DIFFERENCE. THE EXPOSURE CHANGE IN LOG E FOR EACH ACQUISITION THAT WOULD BE NECESSARY TO RECORD THE TARGET DESIGN BRIGHTNESS (TDB) AT PEAK STATIC FILM RESOLUTION.

REC - RECOMMENDED EXPOSURE CHANGE. THE ACTUAL EXPOSURE CHANGE IN LOG E RECOMMENDED FOR EACH ACQUISITION IN INCREMENTS OF 0.10 LOG E. SUBJECTIVE EVALUATIONS ARE CONSIDERED. THE WORD "NONE" IN THIS COLUMN MEANS THAT REGARDLESS OF THE IED, CLOUD COVER, SNOW, HAZE OR OTHER CONDITIONS ARE SUCH THAT NO IMPROVEMENT IN INFORMATIONAL CONTENT WOULD BE EXPECTED TO RESULT FROM AN EXPOSURE CHANGE.

SA - SOLAR ALTITUDE, DEGREES.

EXPT - EXPOSURE TIME, MILLISECONDS.

PR - PROCESS LEVEL.

F - FULL

I - INTERMEDIATE

P - PRIMARY

D - DUAL GAMMA

THE DESCRIPTION OF THE TARGET AREA INDICATES THE OBJECT OR OBJECTS ON WHICH THE TARGET DESIGN BRIGHTNESS (TDB) IS BASED. ANY FACTORS

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SUCH AS WEATHER OR SNOW, WHICH MAY HAVE AFFECTED EXPOSURE, ARE ALSO MENTIONED IN THE DESCRIPTION.

9. THE FOLLOWING INDICATES THE TYPE OF INSTALLATION FOR EACH TARGET IDENTIFIER:

TARGET IDENTIFIER	TYPE OF INSTALLATION
0251-38A	NAVAL BASE AND SHIP REPAIR YARD
0091-5	COMPLEX
0291-58	HYDRO POWER PLANT
0291-SL1	SAM TRAINING AREA
0159-7X	ROCKET ENGINE TEST FACILITY
0161-13C	ICBM LAUNCH SITE
0163-515	ICBM COMPLEX SUPPORT FACILITY
0167-121P	ABM-SPACE TRACKING RADAR FACILITY
0224-13	COMPLEX
0246-5F	LAUNCH COMPLEX
0281-27D	ARMY BARRACKS
0291-4D	NAVAL MISSILE STORAGE
0291-64	NAVAL BASE

10. SINCE THERE IS NO PLUS SIGN ON THE TWX KEYBOARD AT [REDACTED] THE AMPERSAND (&) WILL BE USED TO DENOTE "PLUS" ON QUANTITIES

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IN THE LAST TWO COLUMNS OF TABLE 1.

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BT