

NASA PURCHASE REQUEST R-108

FACILITY FORM 602

N65-29490

(ACCESSION NUMBER)

(PAGES)

CR58752

(NASA CR OR TMX OR AD NUMBER)

(THRU)

(CODE)

(CATEGORY)

UNPUBLISHED PRELIMINARY DATA

QUARTERLY PROGRESS REPORT NO. 3

1 APRIL 1964 - 30 JUNE 1964

LUNAR CHARTING PROGRAM

GPO PRICE \$

CFSTI PRICE(S) \$

Hard copy (HC) 1.00

Microfiche (MF) 50

ff 653 July 65

Aeronautical Chart and Information Center
United States Air Force
Second and Arsenal
St. Louis, Missouri 63118

REPORT CONTROL No.

SUBJECT: Quarterly Progress Report No. 3
1 April 1964 - 30 June 1964

NASA Defense Purchase Request R-108

Date: 1 October 1963

Amount: \$200,000

1. STATEMENT OF WORK: Purchase of Lunar Photography

ACTION: During this reporting period 1,475 9" x 9" lunar negatives were received from Pic du Midi under a continuation of Air Force Contract AF 61(052)496 with the University of Manchester, England. The cost of this program \$26,400 for 12 months, has been charged to NASA PR R-108.

1,854 70 mm negatives were received from the Stony Ridge Observatory under Contract AF 23(601)4010 with Lockheed Aircraft, Burbank, California. The current contract terminates 1 August 1964. \$17,751 of the total contract cost of \$28,153 was funded under NASA PR R-108.

2. STATEMENT OF WORK: Conduct Visual Telescopic Observations

ACTION: Approximately 715 hours of visual observations were accomplished on the Lowell 20" and 24" refractors during the reporting period.

3. STATEMENT OF WORK: Photographic Support

ACTION: Funds in the amount of \$3,500 were transferred to Wright-Patterson AFB during the reporting period for the addition of a reseau grid to the T-11 camera being modified under contract No. AF 33(657)12685. The reseau grid will assure geometric fidelity of photographic images.

Procurement action for a high resolution film viewer with both 70 mm and 35 mm film capacity has been initiated at a cost of \$13,430. This viewer will be used for rapid evaluation and study of lunar features on film taken by the Lowell Observational Office in conjunction with the visual observation program. A 16 mm stop motion projector was purchased at a cost of \$436.00 and delivered to the Observation Office. The projector will be used for training, briefing and study purposes. "Movie Bursts" of the moon are taken through the telescopes at Lowell Observatory as a daily routine. This material will be the major item for projection. A combination photographic enlarger-rectifier was proposed for procurement and previously reported at an estimated cost of \$9,864. It was since determined that the suggested equipment did not completely satisfy the requirements of the Observation Office. Action has been deferred.

4. STATEMENT OF WORK: Mensuration Support Facilities

ACTION: Action was taken to purchase a typewriter and tape punch to record digitized comparator output of the Microanalyzer and effect the

[REDACTED]

necessary modifications of the digitizing component to accept the output devices at a total cost of \$2,383. This output system is expected to be operational in July 1964. Total funding of \$47,371 was transferred to Wright-Patterson AFB for contract No. AF 33(657)13480 with the Data Corporation, effective date 18 June 1964. This contract provides for modification of the Microanalyzer and additional components to effect automated density and comparator correlation, activation of the second density pen recorder, digitized density output and clean room housing. It also provides for additional operator training by the manufacturer. The upgraded system will eliminate the chance of human error, increase machine capability one-third, achieve the full potential of machine accuracies, provide automation of operations and increase versatility of machine applications. The Microanalyzer has been used for solar eclipse measurements, measures to determine film characteristics and linear measurements on lunar photographs during the reporting period.

An engineering calculator with automatic squaring and square root was purchased at a cost of \$1,479 and received in June 1964. It has been in constant operational use and has aided materially in the least square computations of the lunar control program.

5. STATUS OF R-108 FUNDS

Obligated

a. Purchase of Photography - Pic du Midi	26,400
b. Purchase of Photography - Stony Ridge	17,751
c. Lowell Observatory - 20-inch Morgan	23,750
d. Lowell Observatory - 24-inch	10,000
e. Lowell Observatory - Office Rent	3,600
f. Modification of T-11 Camera for Pic du Midi	37,000
g. Operator Training - Micro-analyzer	875
h. Micro-analyzer tape and typewriter output	
(1) Tape Punch	705
(2) Typewriter	943
(3) Modification of Digitizer	735
i. Micro-analyzer components	
(1) Digitizer (new)	17,054

(2)	Digitizer Modification (existing)	6,777
(3)	Clean Room	18,555
(4)	Two stage differentiator	3,762
(5)	Voltage Regulator	382
(6)	Operator Training	841
j.	Reseau Grid for T-11 Camera	3,500
k.	Square Root Friden Calculator	1,479
l.	35/70 mm Film Viewer	13,430
m.	16 mm stop motion projector	436
		<hr/> 187,975
	Unobligated	<hr/> 12,025
		<hr/> \$200,000

6. ACCOMPLISHMENTS

LACs 58, 76 and 94 were printed during this reporting period. ACIC Technical Paper No. 12, entitled "Lunar Color Phenomena," was produced in May. This Technical Paper gave a first hand account of the color phenomena in the crater Aristarchus region, which was observed during October and November 1963 by ACIC personnel located at Lowell Observatory, Flagstaff, Arizona. Preliminary work was accomplished on the new lunar chart series scale 1:500,000. This consisted of telescopic observations and chart portrayal design.

Reproduction copy of LACs 58, 76 and 94 were furnished to the USGS Astrogeology Branch. Also copies of the best Pic du Midi and Stony Ridge Lunar Photography were supplied to the USGS Astrogeology Branch and the Manned Spacecraft Center.