

3010-66-051
COPY 2

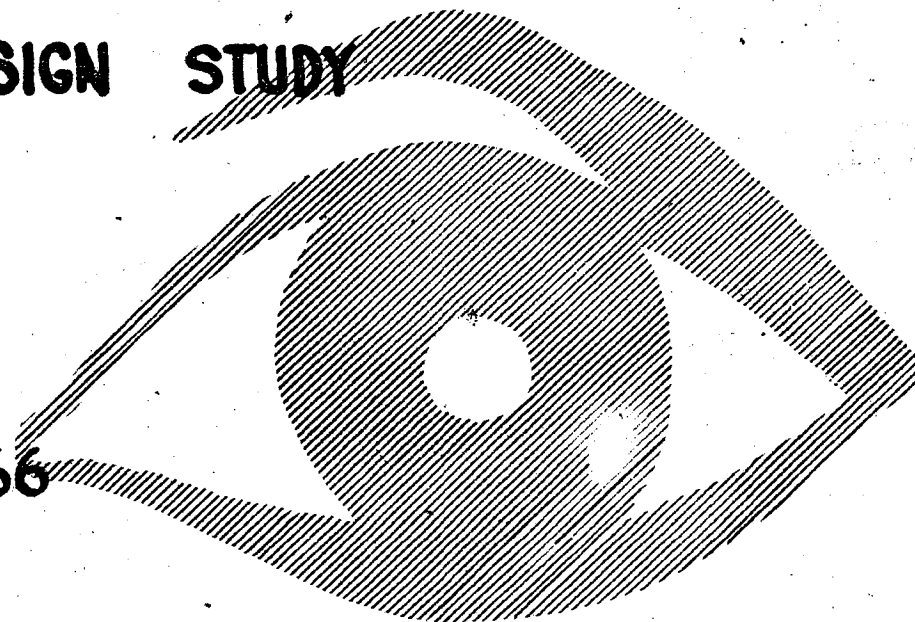
Make

MOL ACQUISITION TELESCOPE

PRELIMINARY DESIGN STUDY

PHASE II

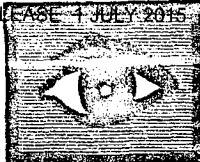
November 15 1966



SEP 21 1988

Handwritten signature and scribbles

Handwritten signature



SCOPE

SPECIAL HANDLING ~~SECRET~~

PRELIMINARY SYSTEM DESIGN

OPTICAL DESIGN

INTERNAL TELESCOPE

SHELL PENETRATION

TRACKING PEDESTAL

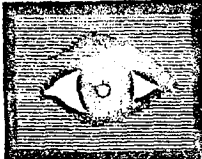
AGE DEFINITION

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ESTABLISHED REQUIREMENTS

APERTURE: PRIMARY - 10 INCHES

ALTERNATE - 8 INCHES

EXIT PUPIL: 2 MILLIMETERS

MINIMUM FIELD: 1 DEGREE (LOW HI-X)

4 DEGREES (LOW LO-X)

CONFIGURATION : DAC - J

TRACKING :

IN TRACK, NO VIGNETTING - + 45° to -10°

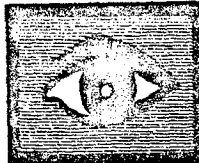
IN TRACK, TOTAL - + 70° to - 40°

CROSS TRACK - ± 45°

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SYSTEM PARAMETERS

- **DEFINED**

MAXIMUM MAGNIFICATION : 127

- **TO BE DETERMINED**

ZOOM RANGE

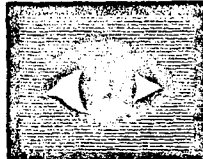
MINIMUM MAGNIFICATION

FIELD ANGLE

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OPTICAL DESIGN

APOCHROMATIC OBJECTIVE LENS

ADEQUATE QUALITY THROUGHOUT FIELD

2:1 ZOOM - SMALL AND LIGHT

60° FIELD AT EYEPIECE

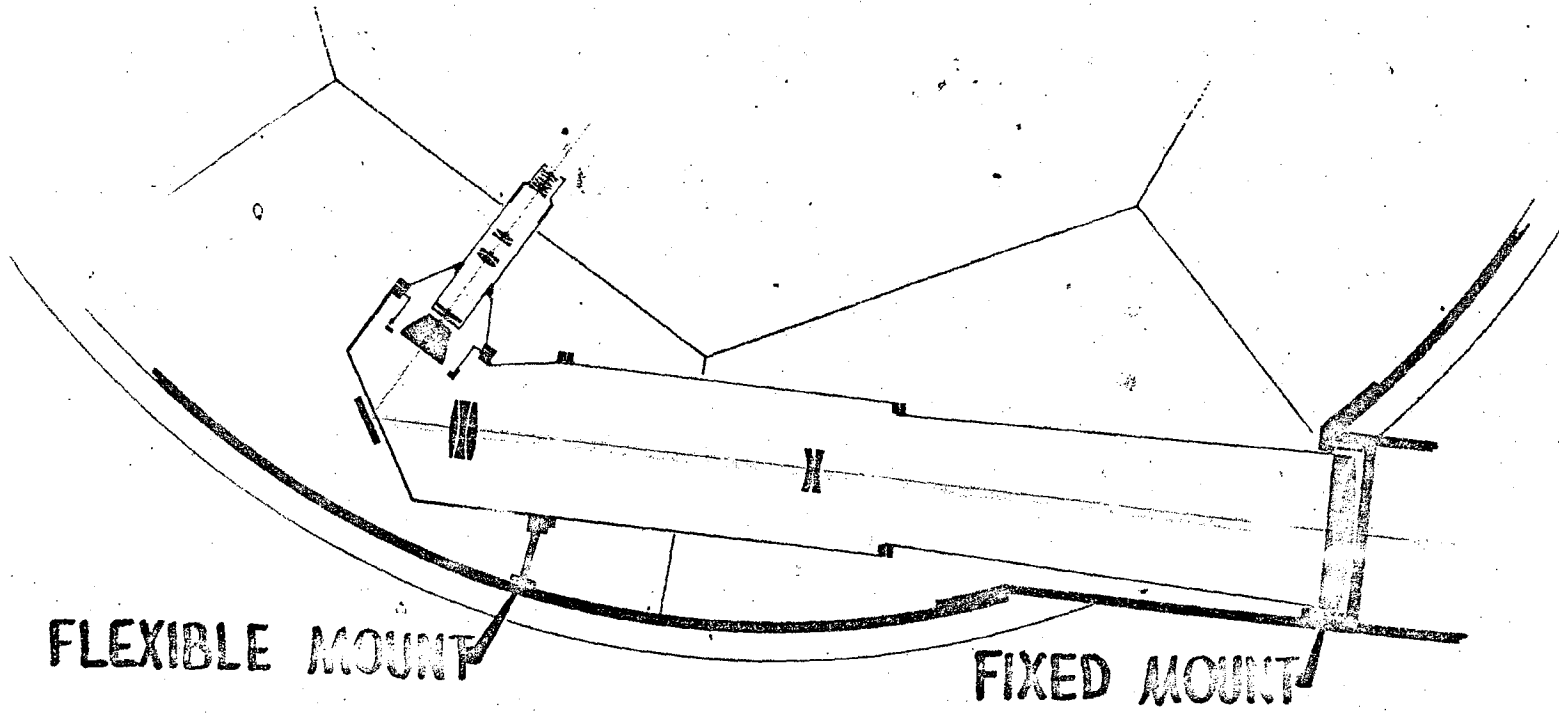
FOCUS ADJUSTMENT AVAILABLE

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TELESCOPE CONFIGURATION



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TELESCOPE DESIGN

**RIGID STRUCTURE MOUNTED TO PRESSURE
SHELL ONLY**

STRAIGHTFORWARD STRUCTURAL DESIGN

MOTOR DRIVEN - POWER CHANGE

ZOOM

DEROTATION

MANUAL

- FILTER SELECTION

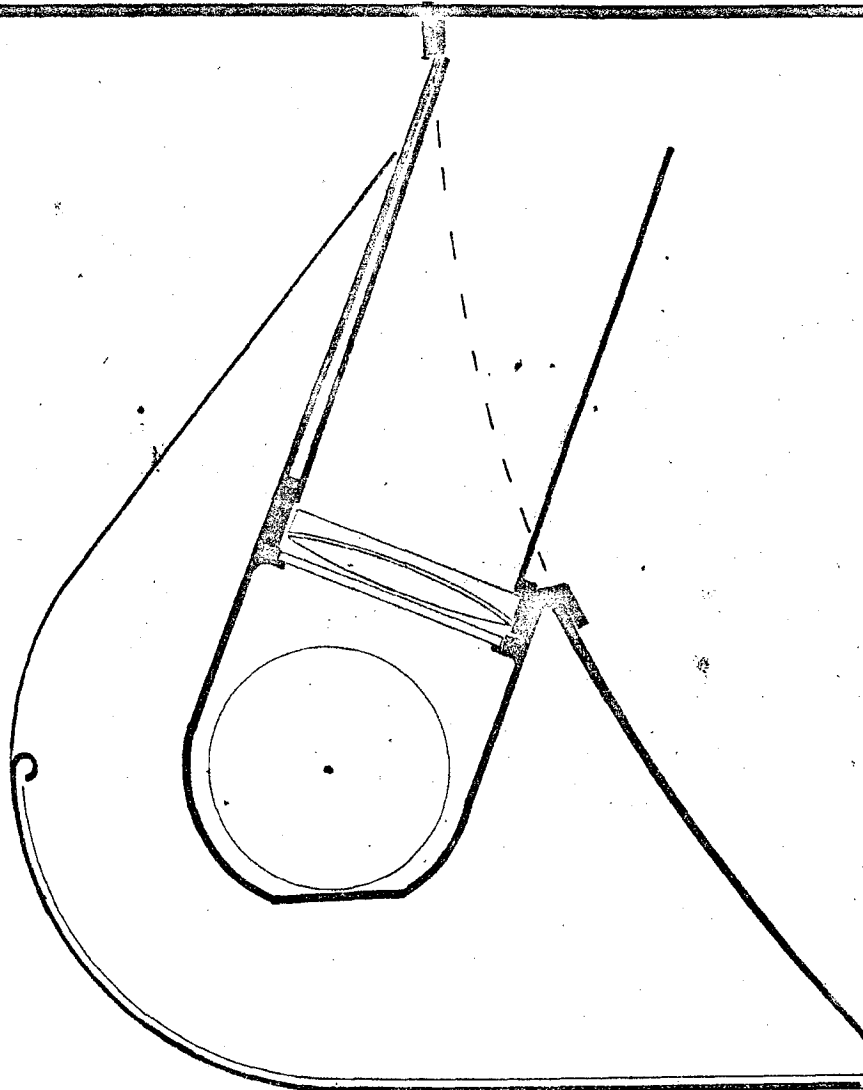
FOCUS

MANUAL OVERRIDE ON ALL FUNCTIONS



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PRESSURE SHELL PENETRATION



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SPECIAL HANDLING ~~SECRET~~



WINDOW ASSEMBLY

FORMS PART OF PRESSURE SHELL

INCLUDES WINDOW

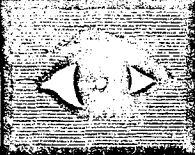
**PROVIDES REFERENCE AND SUPPORT FOR
TELESCOPE**

PROVIDES MOUNT FOR FOLDING MIRROR

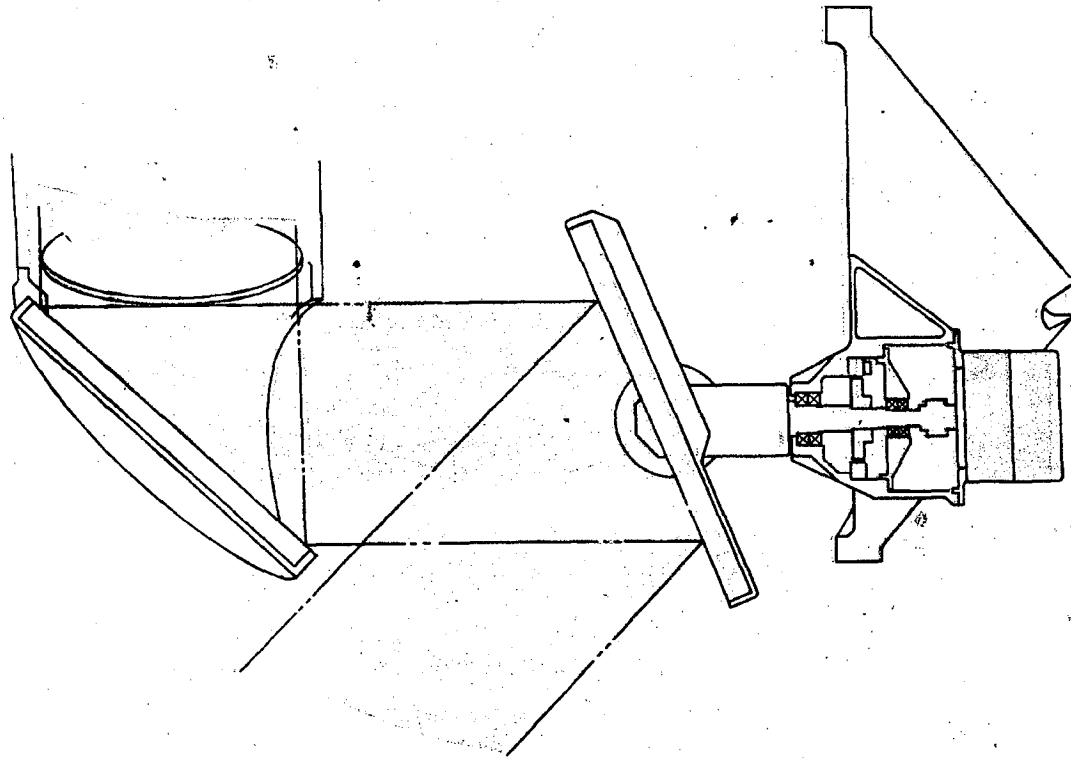
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~~SPECIAL HANDLING SECRET~~



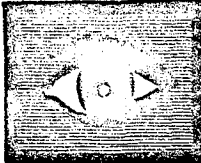
TRACKING PEDESTAL



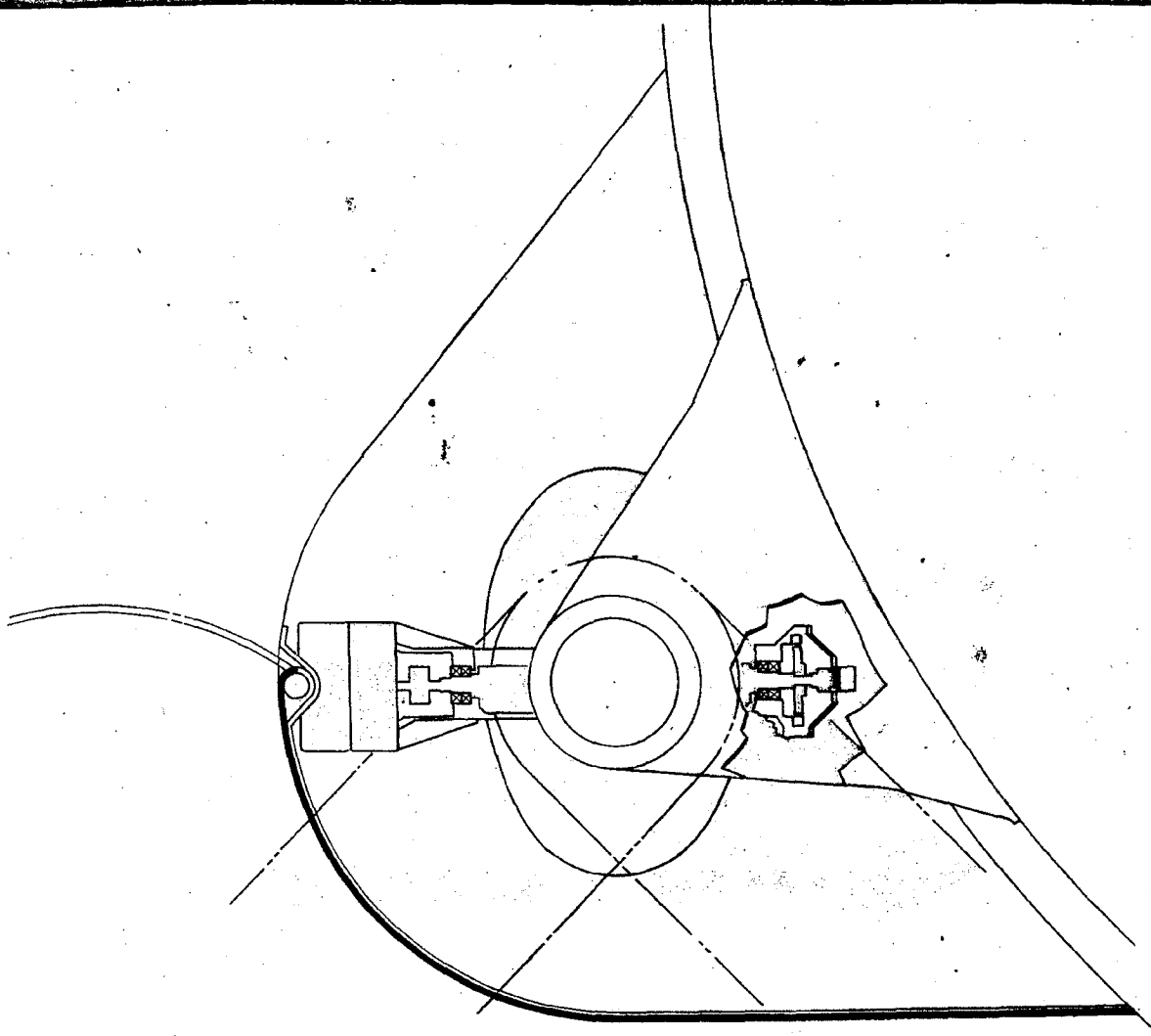
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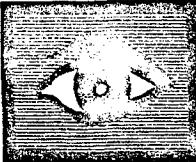
TRACKING PEDESTAL



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TRACKING CONTROLS

FEASIBLE DESIGN EXISTS

COMPUTER INTERFACE:

POSITION: SYNCHRONOUS OR ASYNCHRONOUS

RATE: ASYNCHRONOUS

POSITION RESOLUTION LESS THAN 0.1°

SLEW RATE: 30 DEGREES / SECOND

VELOCITY ERROR INPUT:

LESS THAN 6% OF MINIMUM RATE

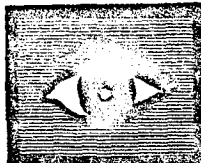
POSITION RESOLUTION LESS THAN 0.1°

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LINE OF SIGHT

IN-TRACK (PITCH)

+70° to +45° : 70 % MAXIMUM VIGNETTING

+45° to -10° : NO VIGNETTING

-10° to -40° : 31 % MAXIMUM

CROSS-TRACK (ROLL)

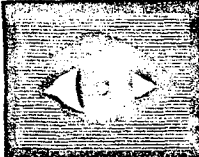
+45° to -45° : NO VIGNETTING

75° to INCLUDE HORIZON EACH SIDE

75° - includes horizon each side - verify



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BASELINE DESIGN SUMMARY

	PRIMARY	ALTERNATE
APERTURE	10 INCHES	8 INCHES
MAGNIFICATION		
HI RANGE	127-63	102 - 51
LOW RANGE	30-15	30- 15
FIELD ANGLE		
HI RANGE	0.5 - 1.0°	0.6 - 1.2°
LOW RANGE	2.2 - 4.4°	2.2 - 4.4°
TOTAL WEIGHT	350 LBS	290 LBS
PEAK POWER	210 WATTS	170 WATTS

5.0

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AEROSPACE GROUND EQUIPMENT

TEST OPERATIONS CONSOLE

TELESCOPE ALIGNMENT SET

TRACKING ALIGNMENT SET

IMAGE QUALITY TEST EQUIPMENT

TEST STANDS

MOUNTING FIXTURE (DAC)

HANDLING & SHIPPING EQUIPMENT

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