

ARUP

From Ove Arup & Partners London
Telefax No. 01 637 9446

To: Mme. CAMERLO.

Attn:

CC:

From: PETER RICE

No. of pages to follow: 5

Job Ref: 5270/01

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Subject: "Experiments" Job Promotion

Transmission No: 010 33 67 58 24 44

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or FAX us on the above number

(1)



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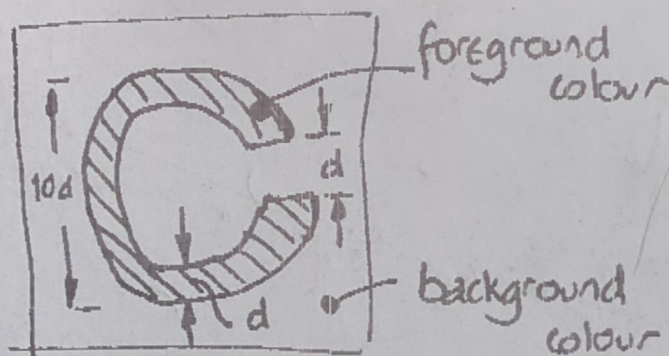
EXPERIMENTS

Purpose: to assess the influences of

- i) size of detail
- ii) light level (moon magnification)
- iii) shade contrast
- iv) colour contrast
- v) age
- vi) adaption time

on perception of detail.

BASIC METHOD: 'LANGDOLT RINGS':



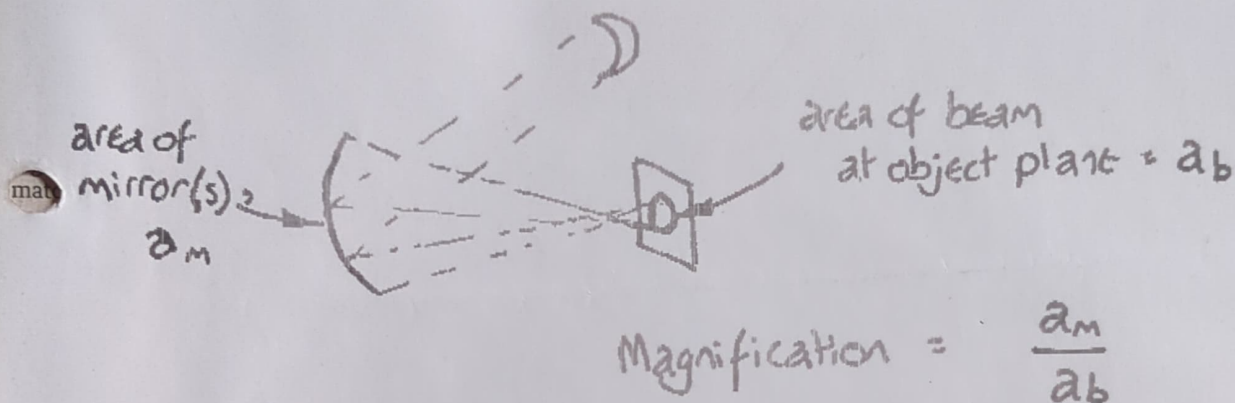
Card is held in any orientation (C O O O etc), and viewer is asked to either say which side the gap in the ring is (up, down, left, right etc), or copies the shape onto paper.

(2)



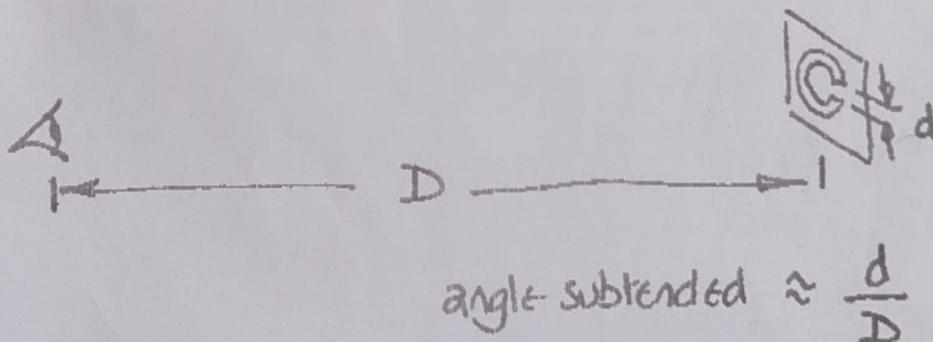
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Light levels ~~sh~~ can be assessed in terms of multiples of moon light:



~~Distances~~

Size of detail is expressed in terms of angle subtended by object at viewing position:



Viewing ^{distance} ~~position~~ should be varied to find relationship between size of detail and accuracy of perception.



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(3)

Cards with 'Langdolt' ring images should be prepared with the following variations:

- i) Black on white (high shade contrast)
- ii) White on black " " "
- iii) Grey on ~~black~~ white (medium " ")
- iv) Off-white on white (low " ")
- v) Green on red (low shade contrast, but high colour contrast)
- vi) Green on blue (low shade contrast, medium colour contrast)

Cards should be retained so that reflectances and hence shade contrasts can be measured at a later date.

The perceptability of the images on each of the above cards should be investigated under different light conditions to test the theory that colour contrast diminishes rapidly with a fall in light levels below about 50x moonlight.

④



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The tests should be carried out, if possible, using viewers of various ages (say ~~at~~ 15-20, 30-40, 50-60 and over 70)

Adaption time:

For this test viewers should look at a brightly lit $\blacktriangledown$ white surface (torch-lit perhaps) for say ten seconds before attempting to perceive the moon lit images. ~~At~~ Attempts should be made at the following intervals:

- i) 5 seconds
- ii) 20 seconds
- iii) 1 minute
- iv) 5 minutes
- v) 20 minutes

Different image illumination levels should be tried.