

Appendix H: FORTRAN 77 Mirror Location Program

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CHARACTER*1 LET
REAL LAMBDA,F1,F,LFREQ,RFREQ
REAL HALF,FLMIR(0:15),FRMIR(0:15),FREQ
INTEGER LMIR(0:15),RMIR(0:15)
PI=4.0*ATAN(1.0)
LAMBDA=632.8E-6
C.....Tables frequency, x-value and pixel value in Fourier Plane.

PRINT*,'Enter transform lens focal length (mm):'
READ*,F1
VALUE=LAMBDA*F1

OBJWID=(632.8E-6*F1)/0.2
C.....Maximum object width allowed.
DELTA=OBJWID/16.0
DF=1.0/(256.0*DELTA)
VAL=1.0/OBJWID
HALF=0.25*VAL
C.....VAL is frequency separation of mirrors on bench.
C.....HALF is freq range on bench covered by half a mirror.
C.....DF is resolution in Fourier Plane.

PRINT*,'OBJWID=',OBJWID
PRINT*,'DF=',DF
DO 100 I=0,15
  FLMIR(I)=((I-8)*VAL)-HALF
  FRMIR(I)=((I-8)*VAL)+HALF
  FLAG=0
  DO 50 J=1,256
    FREQ=(J-129)*DF
    IF (FREQ.GE.FLMIR(I).AND.FREQ.LE.FRMIR(I).AND
*.FLAG.NE.1) THEN
      LMIR(I)=J
      FLAG=1
    ELSE IF (FREQ.GE.FLMIR(I).AND.FREQ.LE.FRMIR(I)) THEN
      RMIR(I)=J
    ENDIF
50    CONTINUE
100  CONTINUE

WRITE(6,220)
WRITE(7,220)
DO 200 I=0,15
  LFREQ=(LMIR(I)-129)*DF
  RFREQ=(RMIR(I)-129)*DF
  IDIFF=RMIR(I)-LMIR(I)+1
  WRITE(6,250)I,LMIR(I),RMIR(I),IDIFF
  WRITE(7,250)I,LMIR(I),RMIR(I),IDIFF
  WRITE(6,350)LFREQ,RFREQ
  WRITE(7,350)LFREQ,RFREQ
200  CONTINUE
220  FORMAT(/,T14,'MIRROR',T31,'LEFT',T47,'RIGHT',T58,'COVERAGE')
250  FORMAT(T15,'(',I2,')',T31,I3,T47,I3,T58,I3)
350  FORMAT(T10,'f(J)',T28,F7.3,T45,F7.3,/)

PRINT*,'-----'
PRINT*,' This information also sent to channel 7.'
PRINT*,'-----'
RETURN
END
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File translated from T_EX by [T_H](#), version 3.02.

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