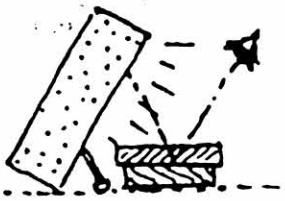
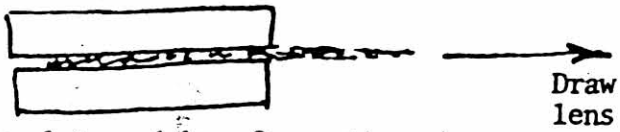
Physics 625 Experiments with Fizeau Interferometer

I.



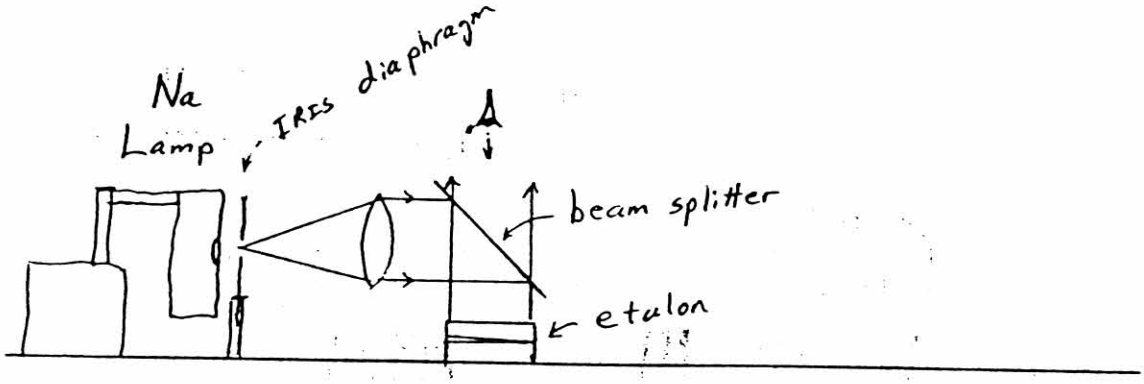
Use Hg light box to inspect various surfaces.

1) Blow dust off surfaces with "omit" can.
2) Draw lens tissue gently between plates to remove final traces of dust.



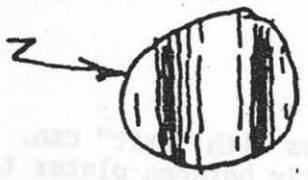
(Not a good idea for plates with soft coatings.)

II. Better viewing system.



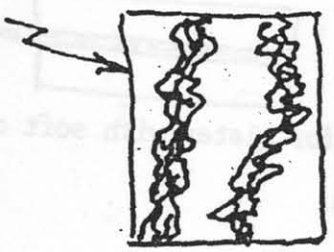
III. Notes : 1) Use straightness of fringes to judge flatness of plates.
(Compare two λ/10 plates with plate-glass pair).
2) "Smooth" v.s. "jagged" fringes to judge quality of polish -
compare fire polished plates and λ/10 lapped optical plates.

a) Flats



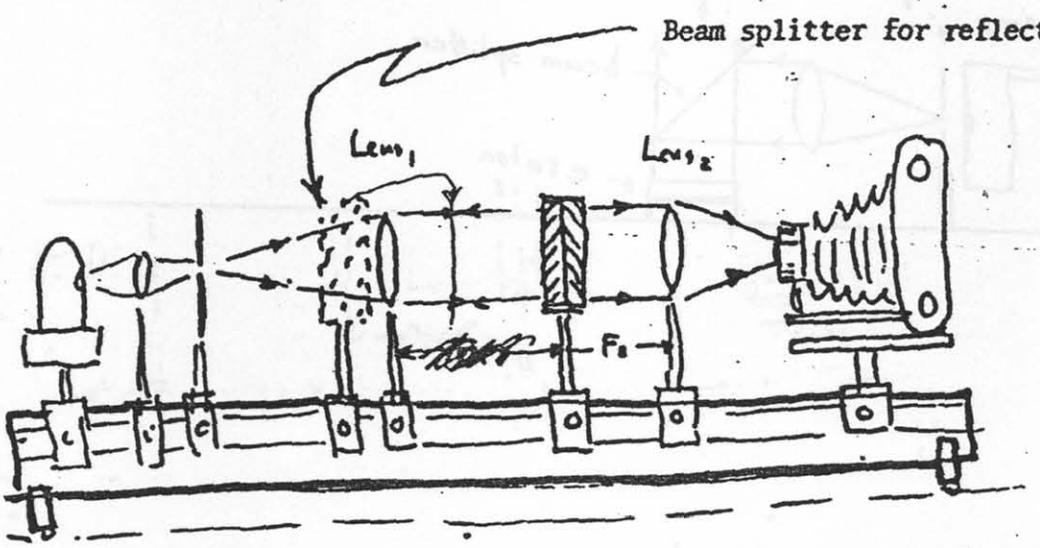
("smooth" fringes.)

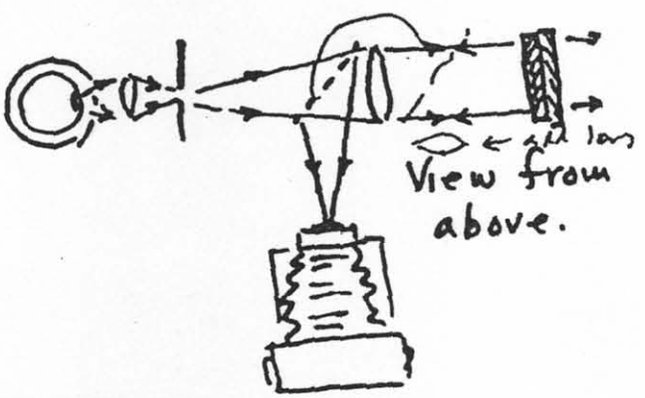
b) Plates



(jagged edges indicate poor polish.)

IV. Photograph fringes of coated flats in reflected and transmitted light.





By placing lenses so that fringes fall on their focal planes, camera lens can be set at infinity and even the sharp fringes will be in crisp focus. Can use autocollimation procedures to achieve this condition, if you wish.