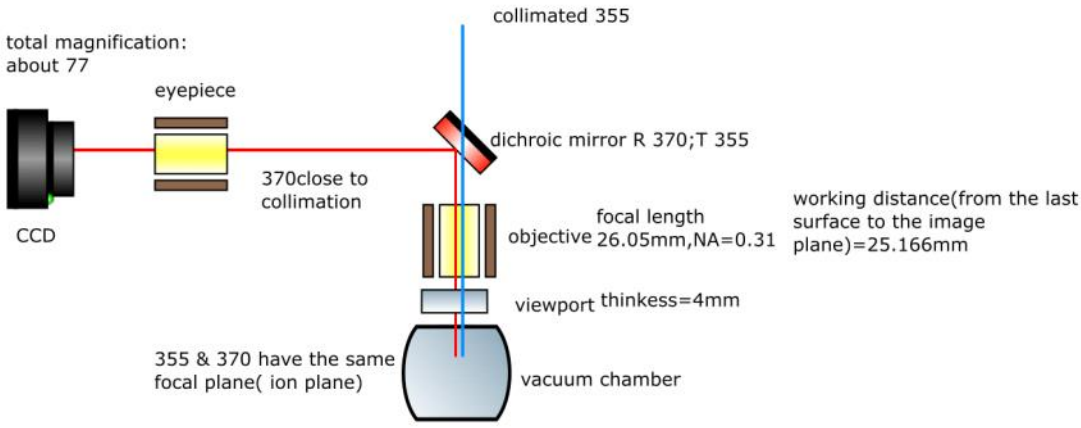
March report

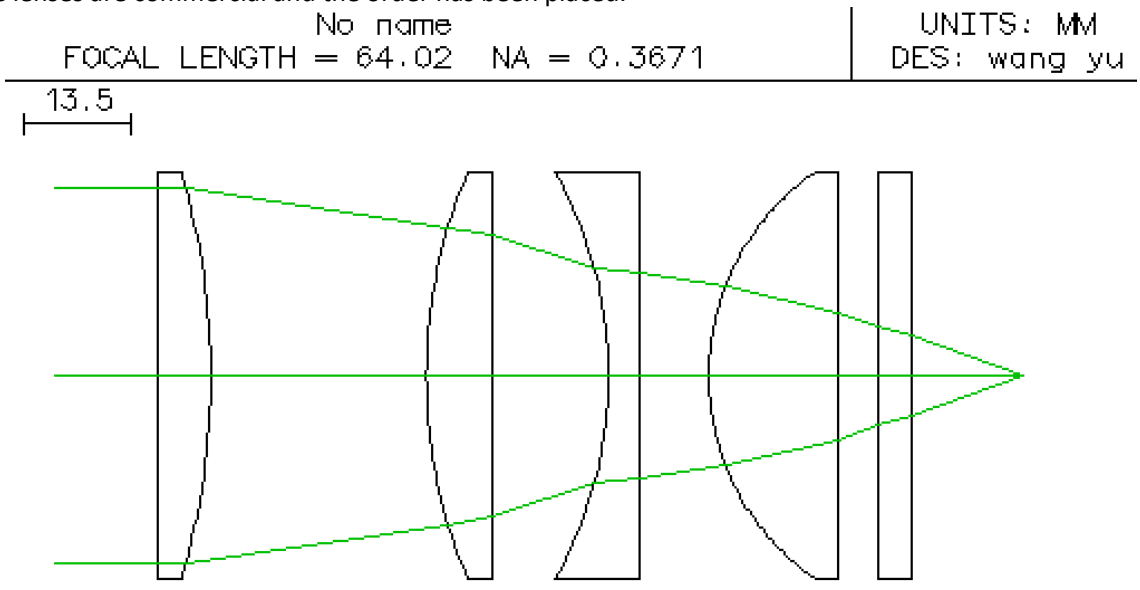
2019年4月2日 10:08

1. Design an optical system for 370&355. It corrects the achromatic aberration by phase compensation of 370.



The objective contains 5 commercial lenses(arrived) and 1 customed lens (processing), the eyepiece(correct the achromatic aberration) contains 3 commercial lens(arrived). Spacers are also processing. I am waiting for these parts and will assemble them once they are ready.

2. Design a big objective for 370,(working distance=23mm(with 4mm viewport), NA=0.37 for 370nm). All the lenses are commercial and the order has been placed.



3.Investigate the possibility of using SLM(spatial light modulator) to generate an array of tiny spots. The rise time of the crystal limits the frame rate(~100us-1ms).
An alternative solution is DMD(digital mirror device).The inner core part is controlled by FPGA so basically the frame rate could be much faster(~20us).

4.Investigate the performance of the hydrogen fiber and characterize the beam after AODs. It is still processing and the goal of this test is to identify if the spot (created by different angles of emergence from AOD) will be distorted(spherical aberration) and generate cross talk.