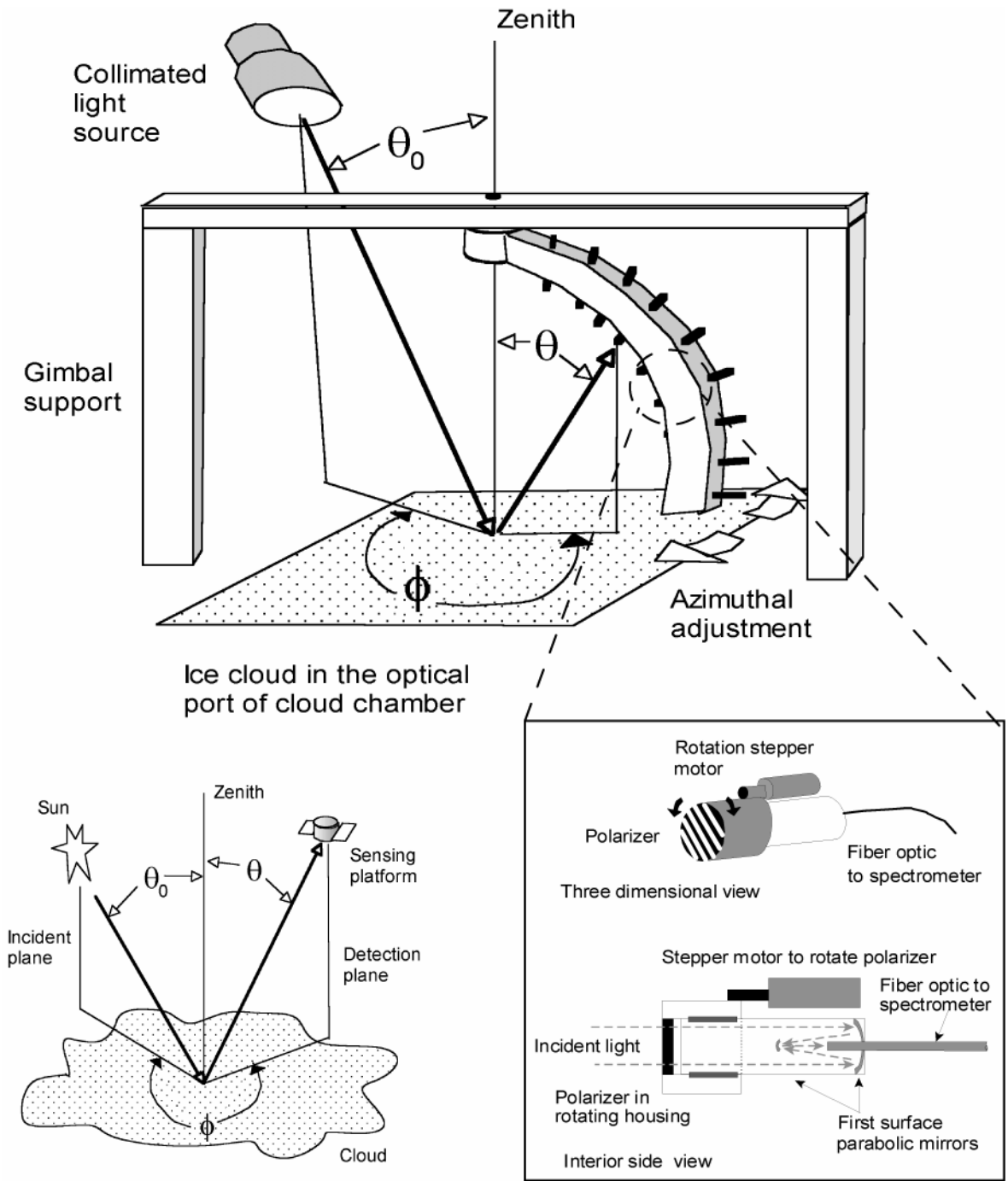
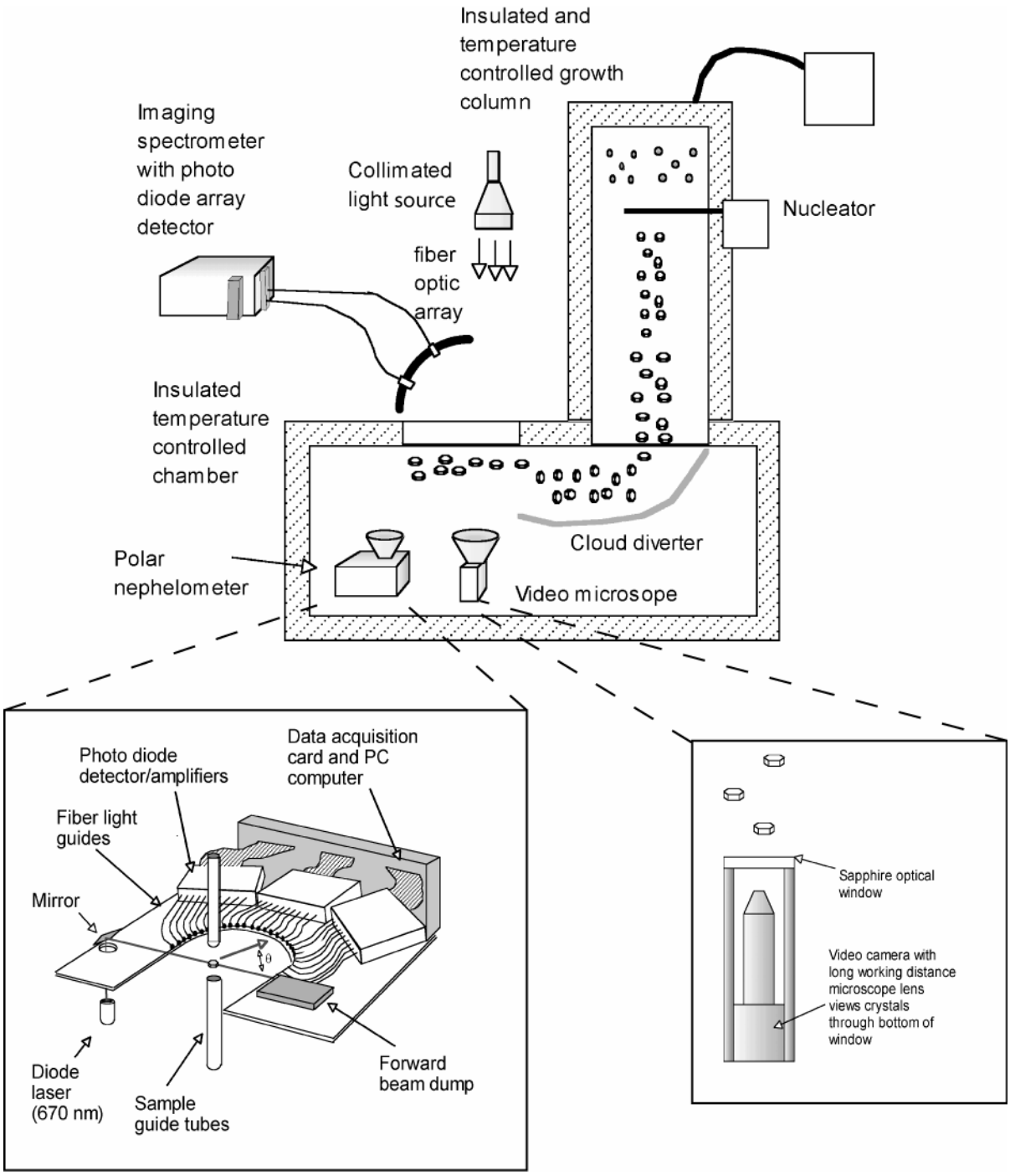


The optical setup is designed to reproduce the measurement scattering geometry that remote sensing platforms (lower left) use in viewing clouds. Light scattered from the top of the ice cloud is focused onto the fiber optic light guides and analyzed in an imaging spectrometer. The detector arc is rotated to the desired azimuthal sensing angle while the scattering angle is determined by the fiber optic placement. At the lower right is a three dimensional and cutaway view of the optics which define the measured solid angle by focusing diffuse scattered light from the ice cloud into the fiber optic. A computer controlled stepper motor is used to rotate the polarizing optic to the desired orientation.



Upper diagram is the cloud chamber design based on the existing cloud chamber at UCLA. See text for a complete description. The optical configuration is detailed in Fig. 5 so only a rudimentary diagram is seen here to illustrate it's positioning on the chamber. Below are some details of the polar nephelometer which measures the single scattering properties of ice particles and the video microscope which is used to determine the particle habit and size distribution.