

## Coronagraph-polarimeter for prominence observations

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Measurement of weak magnetic fields in quiescent prominences is important for understanding the internal structures of solar prominences. However, it is very difficult to observe a few tens of gauss by using magnetographs due to low S/N.

To estimate the magnetic field strength and direction of quiescent prominences, we are developing a coronagraph-polarimeter which is monitoring the polarization degree and direction in  $H\alpha$  and HeI 10830 lines of solar prominences. The system was designed specially with a coronagraph style and main optical elements were manufactured by SAI in Moscow University. From this system, we will estimate cyclic variations of weak magnetic fields and currents in quiescent prominences.

On the other hand, we have developed a new algorithm of deriving magnetic fields in solar prominences using the observed data from 1999 and 2001 solar eclipse expedition.