
Infrared Stokes Polarimeter at NAOJ/Mitaka as a Prominence Magnetograph

Yoichiro Hanaoka*¹ and Takashi Sakurai¹

¹National Astronomical Observatory of Japan (NAOJ) – 2-21-1 Osawa, Mitaka, Tokyo 181-8588, Japan

Abstract

We have been operating an infrared Stokes spectro-polarimeter, whose observing wavelength bands include the He I 10830 and Fe I 15648 lines. A couple of full-Sun, full-Stokes maps in both wavelength bands are taken on a daily basis, with the polarization sensitivity better than 10^{-3} . With this sensitivity, the helium polarization maps clearly show the atomic and Hanle polarization besides the Zeeman polarization, particularly in prominences/filaments. On these polarization maps, we can track the magnetic field signals of the prominences/filaments during their passages on the solar disk. Therefore, this instrument works as a "synoptic prominence magnetograph". In the conference, we show some examples of the polarimetric data of the prominences/filaments (both quiescent and eventually erupted ones).

Keywords: polarimetry, magnetic field

*Speaker