

## M16a Tomography of plage and network magnetic fields from Hinode and CLASP2 observations

R. Ishikawa (NAOJ), J. Trujillo Bueno, T. del Pino Alemán (IAC), T. J. Okamoto, R. Kano, D. Song, M. Yoshida (NAOJ), D. E. McKenzie, K. Kobayashi (NASA/MSFC), F. Auchère (IAS), L. Rachmeler (NOAA NCEI), C. Bethge (USRA), CLASP2 team

Magnetic fields in the solar atmosphere are crucial for the energy transfer from the photosphere to the corona, as well as for its dissipation. It is important to measure the magnetic field throughout the solar atmosphere, and especially in the upper chromosphere where the magnetic pressure dominates the gas pressure ( $\beta < 1$ ).

The Chromospheric LAYER Spectro-Polarimeter (CLASP2) sounding rocket experiment was carried out on 2019 April 11, providing the first ever spectrally and spatially resolved Stokes ( $I$ ,  $Q$ ,  $U$ ,  $V$ ) profiles across the Mg II h & k lines at 280 nm. During 155 s CLASP2 observed an active region plage and its surrounding enhanced network region and detected significant circular polarization signals produced by the Zeeman effect in the Mg II h & k lines and in two Mn I lines located in the same spectral region. The Mg II h & k lines provide information on the magnetic field in the upper chromosphere and near the transition region, while the Mn I lines originate in the lower chromosphere. The Solar Optical Telescope (SOT) aboard Hinode succeeded in providing the planned coordinated observations with CLASP2. By combining the CLASP2 and Hinode/SOT data we have been able to infer the longitudinal component of the magnetic field from the photosphere to the very upper chromosphere, revealing how it expands with height in the plage and in the network.