

Abstract Submitted
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GreenPol¹ ARI KAPLAN, PHILIP LUBIN, PETER MEINHOLD, NIC RUPERT, Univ of California - Santa Barbara, HANS KRISTIAN ERIKSEN, INGUNN KATHRINE WEHUS, UNNI FUSKELAND, University of Oslo, PAVEL NASELSKY, PER REX CHRISTENSEN, SEBASTIAN DOMENICO VON HAUSEGGER, HAO LIU, Niels Bohr Institute — Measurements of the polarization of the Cosmic Microwave Background (CMB) provide an excellent probe of the inflationary era of the early universe, as tensor mode gravitational waves produced during inflation can lead to polarization signals in the CMB. It has become clear recently that galactic foreground emission will be the fundamental limit to studies of CMB polarization. There is a huge effort underway to study these modes in the CMB, however most current experiments focus on high frequencies, where galactic dust is dominant. Because this emission is more complex than was expected, current data is insufficient to be certain which frequencies will be best for separating foregrounds from tensor mode signals. It's therefore necessary to investigate lower frequency foregrounds as well in order to be confident in any measurement of the tensor modes. GreenPol plans to map the low frequency galactic polarization emission at Summit Station in Greenland from 10-44 GHz for 50% of the sky at various elevation angles. This summer we will deploy to Greenland to map the sky at 10 GHz using a 2.2 meter off-axis Gregorian telescope with a reflection half wave plate at its focus, with plans for higher frequency measurements in the future.

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