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Board of Directors Chair

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To: CMB-S4 Spokespersons John Carlstrom and Julian Borrill and Project Director Jim Yeck

On behalf of the CCAT-prime collaboration, we would like to state our interest to partner with the CMB-S4 collaboration and the CMB-S4 project to use the CCAT-prime 6-meter aperture telescope for CMB-S4 observations. This letter is intended to build on the letters of interest exchanged with the CMB-S4 spokespersons in 2019. Specifically, we aim to make the CCAT-prime telescope available for primary use with a CMB-S4 receiver for several years of observations starting in 2027 or later. This telescope design is consistent with (and in some cases exceeds) the performance requirements for the CMB-S4 reference design. CCAT-prime is scheduled for installation in Chile in late 2021.

Prior to the deployment of a CMB-S4 receiver on CCAT-prime, we are interested in the possibility of using the CCAT-prime funded Prime-Cam receiver that can support up to seven instrument modules (aka. optics tubes) to prototype and pursue on-sky measurements with CMB-S4 technologies. All current CMB-S4 optics tube designs under consideration for use on large aperture telescopes are compatible with being deployed in the Prime-Cam receiver. This on-sky prototyping has the potential to provide great benefits to both the CMB-S4 project and CCAT-prime collaborations.

Given the current uncertainty in the CMB-S4 schedule and funding level (and the possibility of COVID-19 related delays for both projects), we recommend that a formal agreement between the CCAT-prime collaboration and CMB-S4 project be pursued at a later time. Specifically, we recommend that CCAT-prime be included in the baseline design presented at the National Science Foundation Preliminary Design Review (PDR) and the Department of Energy CD-1 review, and that the formal agreement between CCAT-prime and CMB-S4 be finalized between the NSF PDR (DOE CD-1) and the NSF FDR (DOE CD-2) where the CMB-S4 performance baseline is approved.

We plan to continue growing the partnership between CCAT-prime and CMB-S4 prior to the finalization of a formal agreement approved by both projects.

Sincerely,

Terry Herter
CCAT-prime Project Director

Martha Haynes
Chair of the CCAT Board

Michael Niemack
CCAT-prime Liaison to CMB-S4 and Simons Observatory