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Department of Astronomy/Steward Observatory
933 North Cherry Avenue, Rm. N204
Tucson, AZ 85721-0065

Dear Sir or Madam:

I am applying for the Bart J. Bok Fellowship in Astronomy and Astrophysics at Steward Observatory, University of Arizona. My curriculum vitae, bibliography, and a statement of my current and proposed research are enclosed for your review. I would appreciate your consideration for this position, as my ongoing research projects to study the properties of Galactic center molecular clouds and my extensive radio and millimeter observing experience are an ideal match for the research environment at the University of Arizona. My proposed research will yield quantitative, high-resolution studies of cloud properties in the unique Galactic center environment that are highly complementary to work done by the University of Arizona, including the Bolocam Galactic Plane Survey, and numerous studies of other massive star formation environments throughout the Galaxy

I am currently leading multiple research projects including the detection and characterization of a widespread, hot component of molecular gas in the Galactic center using the Green Bank telescope, and a new high-resolution survey of Galactic center gas using the Very Large Array, which will yield the first resolved temperature maps of Galactic center molecular clouds. I propose to expand on these projects by undertaking complementary surveys with the VLA and the Atacama Large Millimeter Array to study the density structure of Galactic center clouds. Together with my existing work, this will allow me to study the physical processes which cause gas conditions in the Galactic center to be different than those in the Galactic disk, and to constrain the initial conditions of Galactic center star formation. As a Bok fellow, I will continue to lead independent research projects using cutting-edge, open-access facilities including the GBT, VLA and ALMA.

Sincerely,

Elisabeth Mills