Abstract Submitted
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Mid-Infrared Substellar Companion Mass Limits for Nearby Planet-Host Stars[1] ALAN HULSEBUS, MASSIMO MARENGO, Iowa State University, KARL STAPELFELDT, NASA Goddard Space Flight Center, JOE CARSON, University of Charleston — The sensitivity of the Infrared Array Camera on NASA's Spitzer Space Telescope at 4.5 μm provides the ability to use direct imaging to capture light from brown dwarfs expected to have peak emission in this band. Using PSF subtraction techniques, we can detect sources with better than 10^4 contrast at separations as close as 12 arcseconds. Potential substellar companions can be identified from their characteristically red colors between the 3.6 and 4.5 μm photometric bands. In a sample of 14 nearby stars already found to have planetary companions from radial velocity searches, we found no sources consistent with substellar-mass companion colors within 20 arcseconds of the stars. This corresponds to 4.5 μm upper limits for objects of 5 Jupiter masses at 1 Gyr age and 10 pc distance. I will present a description of the point spread function and artifact subtraction process necessary to achieve this result.

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Alan Hulsebus
Iowa State University

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