

Astronomy Seminar

Wednesday, January 22, 4:30 pm
Science & Engineering Building Auditorium

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A Search for Companions Around Cool Stars

M dwarfs are the most common type of stellar object and comprise more than 70% of the known stars in our Galaxy. Along with being our nearest neighbors, these low mass stars have long lifetimes, which make them great targets for searching for planets upon which life may have had time to form. Our program, CAESAR, a Companion Assessment of Equatorial Stars with both Astrometry and Radial will determine the frequency of mid M stars with close companions, all the way down to planetary masses. We are using CSHELL at NASA's IRTF to obtain high precision infrared radial velocity (RV) measurements to search for Jupiter mass planets with short periods, close-in to their parent star. From this initiative, we discovered the closest low mass quadruple system to the Sun. Its lowest mass component might be a brown dwarf. As a complement to our radial velocity program, the RECONS astrometry program searches for more massive planets and brown dwarfs at distances out to 2 AU from the majority of our stars, which is past the snowline (where the massive planets are believed to have formed in our Solar System). Our dual method program is narrowing the prospective hiding places for companions around nearby low mass stars and will allow us to place the strictest constraints on the companion frequency around these very low mass stars.

*Please join us for light refreshments
at 4:15pm outside SEB 203.*