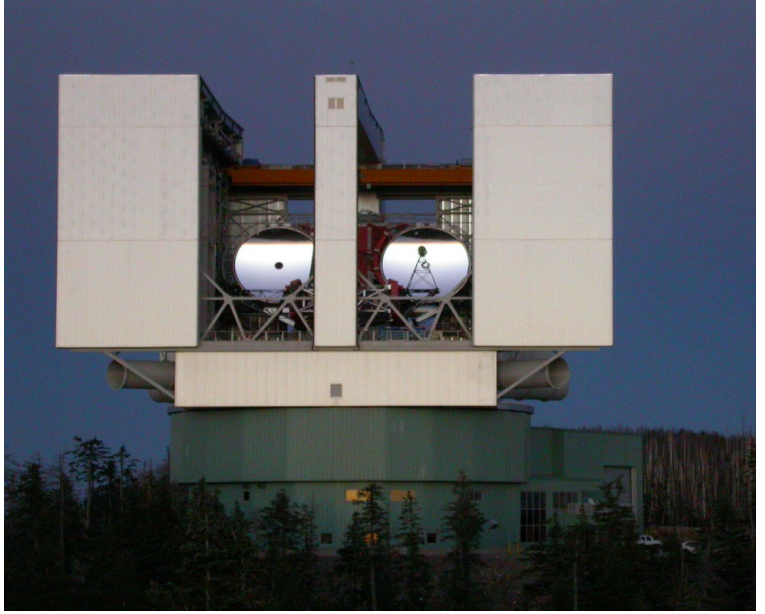
Team project #1



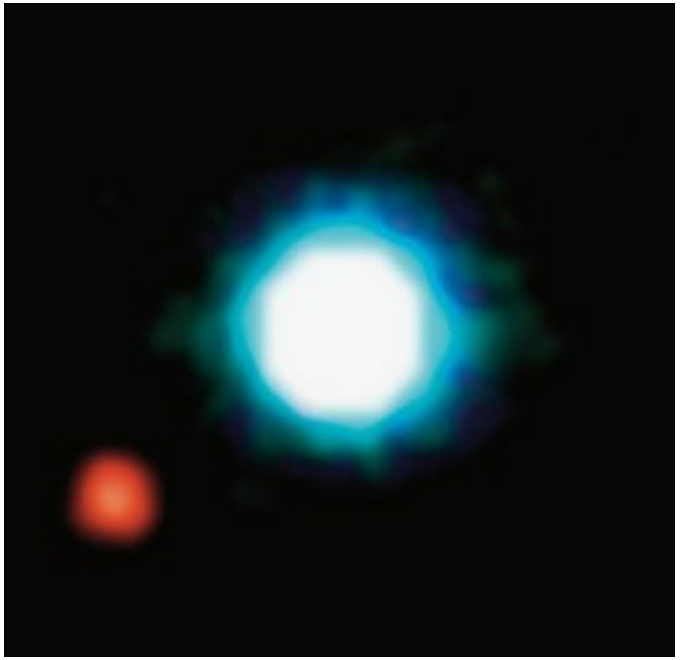
Detecting and characterizing hot Jupiters with interferometry on LBT

LBT's angular resolution allows separation of star and planet, even for hot/warm Jupiters

Use fringe visibility and/or phase (astrometry) signal:

- fringe visibility can show presence of planet
- photocenter changes as function of color

Planet thermal emission is very different than Star's: planet is much redder !



2M1207 star + planet

What type of interferometric instrument ?
New instrument vs. existing one ?
Expected science results – how many planets ?

Team project #2

Astrometric space mission in support of transit, RV and microlensing
Targeted observations (not blind search)

Single aperture or interferometer (you choose)

Science goals:

- confirm transits (false positive show strong astrometric signature)

- when possible, detect astrometric signal induced by transiting or RV planet → planet mass measurement

- help characterize microlensing events with astrometry: microlensing event creates astrometric signal at the Einstein ring radius level

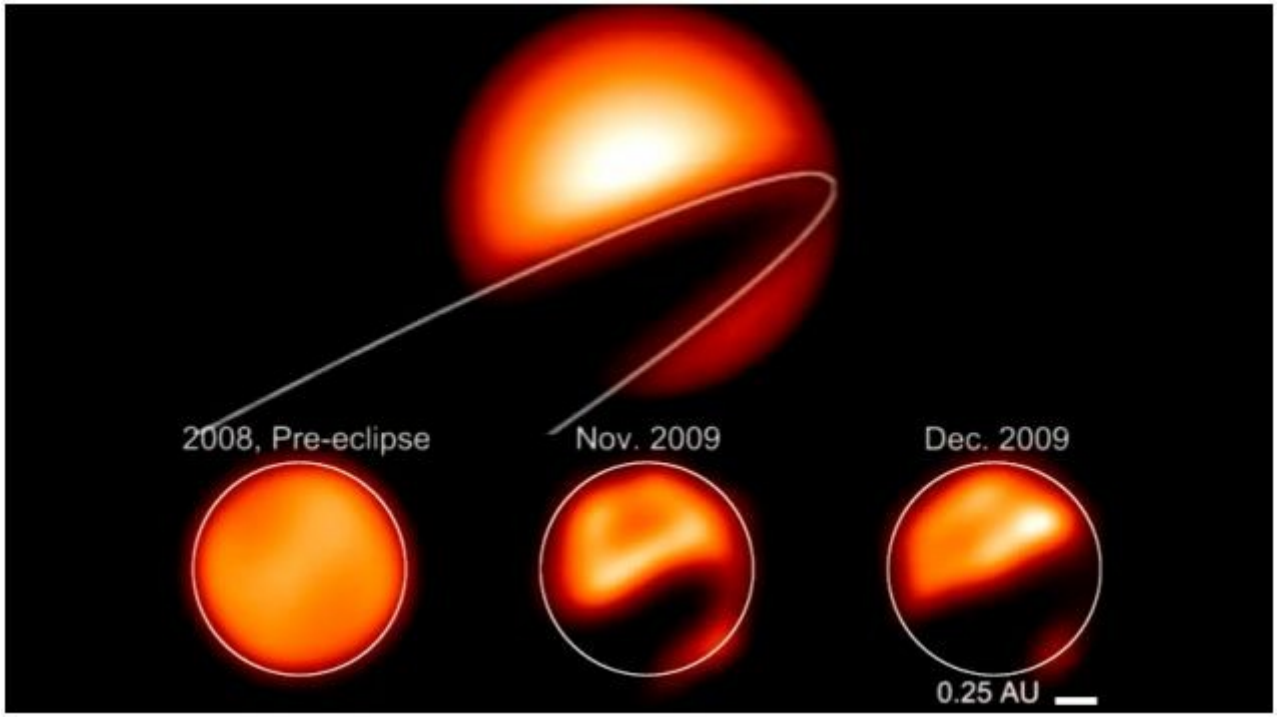
(Ability to detect new small planets would be a bonus, but not required)

Team project #3

Ground-based or space-based interferometric imaging of transiting exoplanets as they pass in front of their host star

Measure planet radius, shape (rotation ?), rings, satellites

What type of interferometer is required ? What are the main challenges ?



Eps Aurigae
(CHARA)