Taking Science to the People

Outreach as a Creative Outlet

Adam J. Burgasser

Massachusetts Institute of Technology

Why do Outreach?

Altruism

Stimulate interest in science in the public = $$$

Stimulate interest in science in future scientists/teachers

Breakdown socioeconomic/cultural barriers

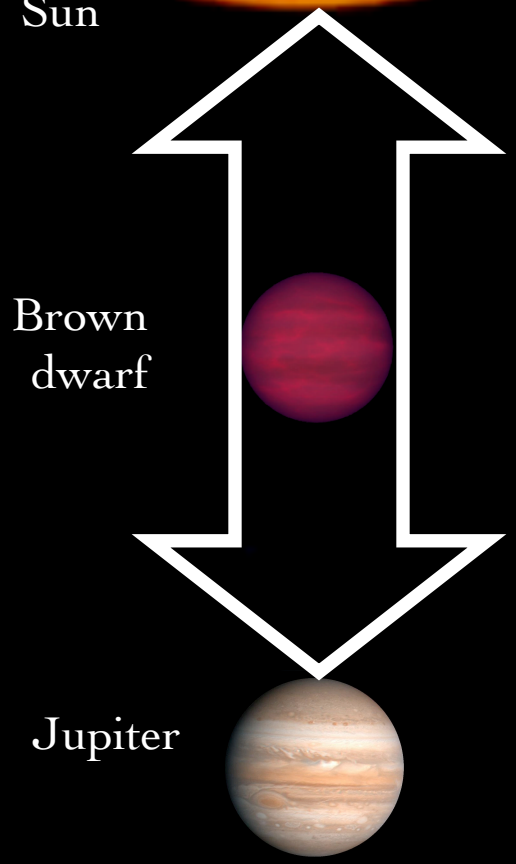
Selfish

Fun and creative

Refresh your own perspective

National funding (esp. NSF) & visibility

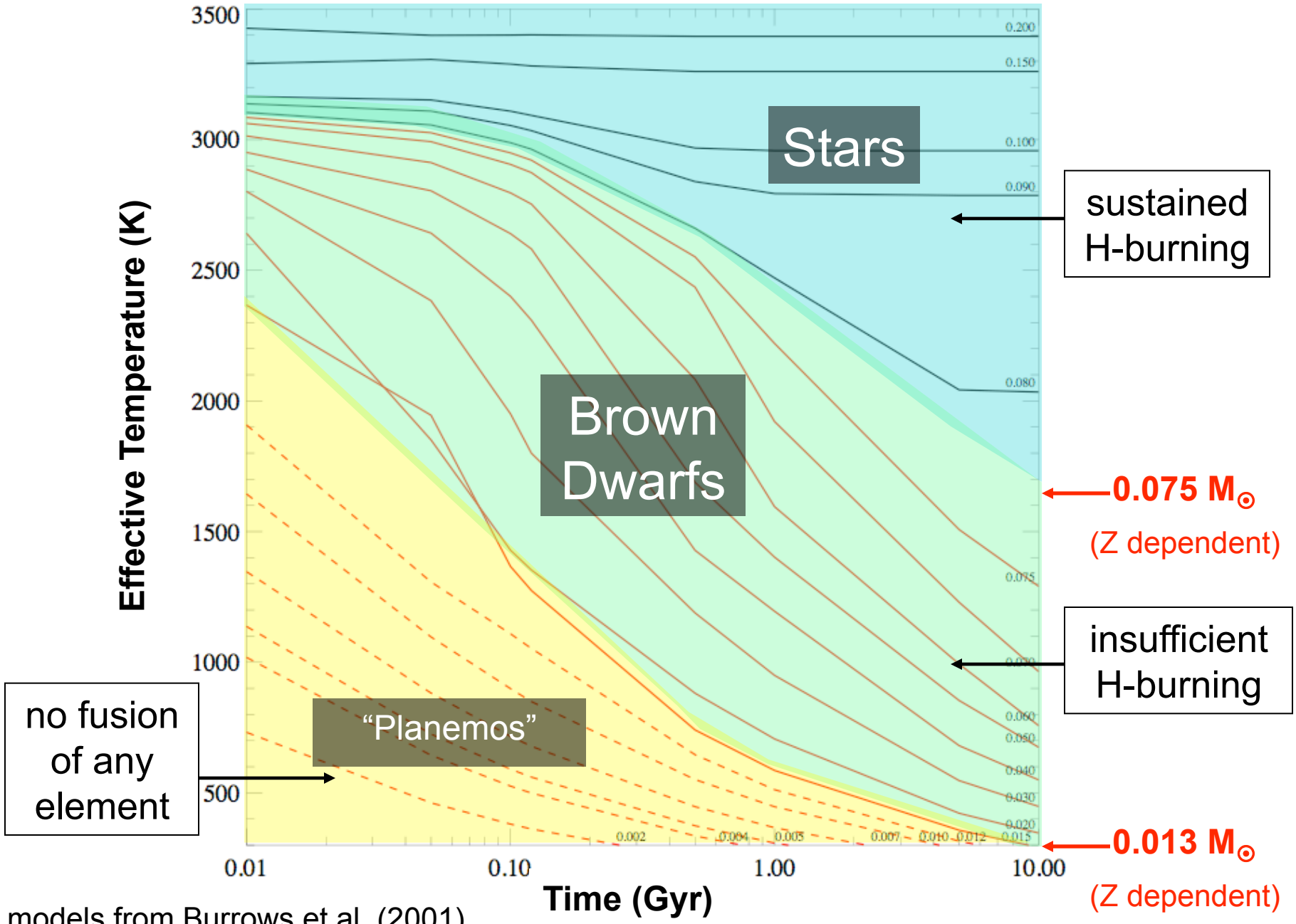
what is a **brown dwarf?**



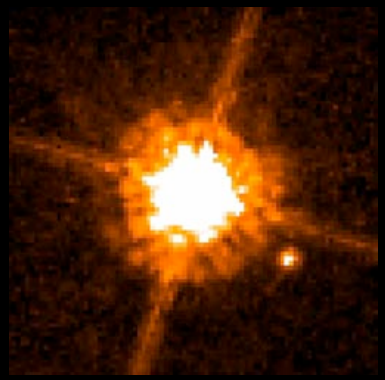
Low-mass objects with properties intermediate between stars and planets.

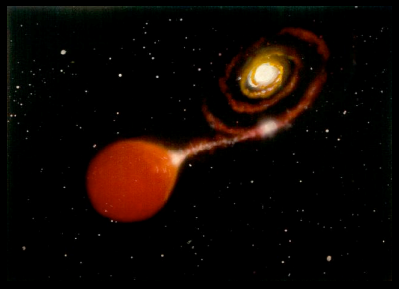
"**Failed stars**" - form like stars, found as isolated systems, can host their own planetary systems

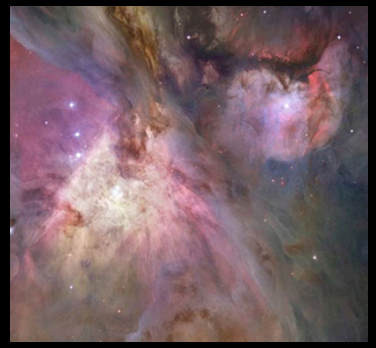
"**Super-Jupiters**" - do not fuse hydrogen, sizes comparable to Jupiter, planetary atmospheres

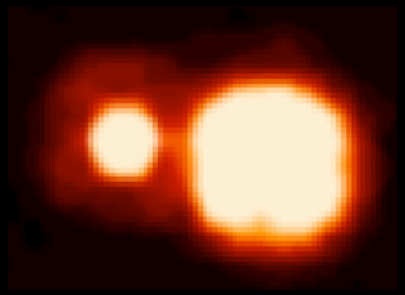


models from Burrows et al. (2001)









Weird facts about brown dwarfs

First postulated in 1963; first discovered in 1995

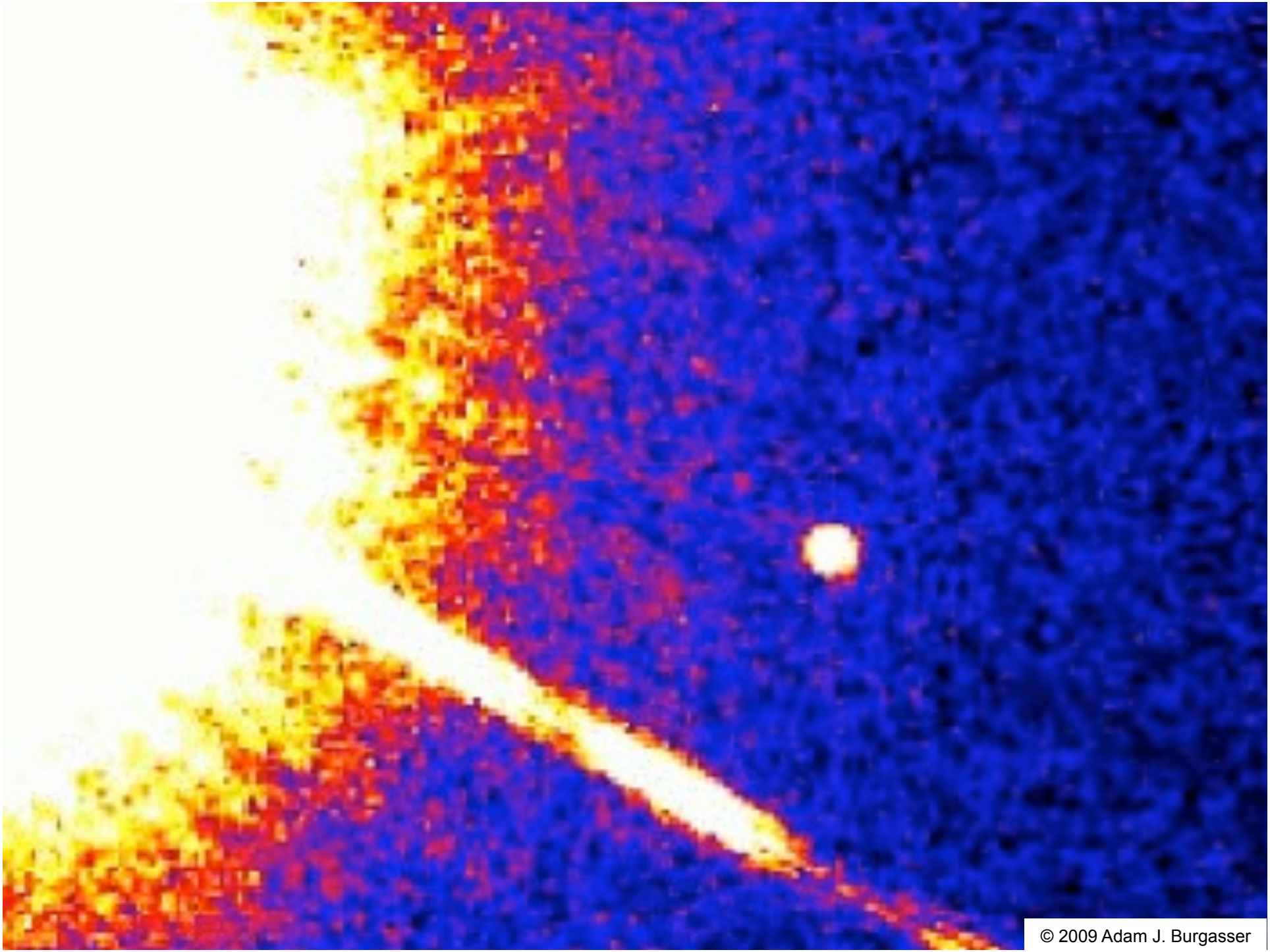
Atmospheres contain H_2O, CH_4, NH_3 gases, clouds of “hot dirt”

All roughly the size of Jupiter, but up to 75x more massive

Coldest surface temperature to date ≈ 600 K

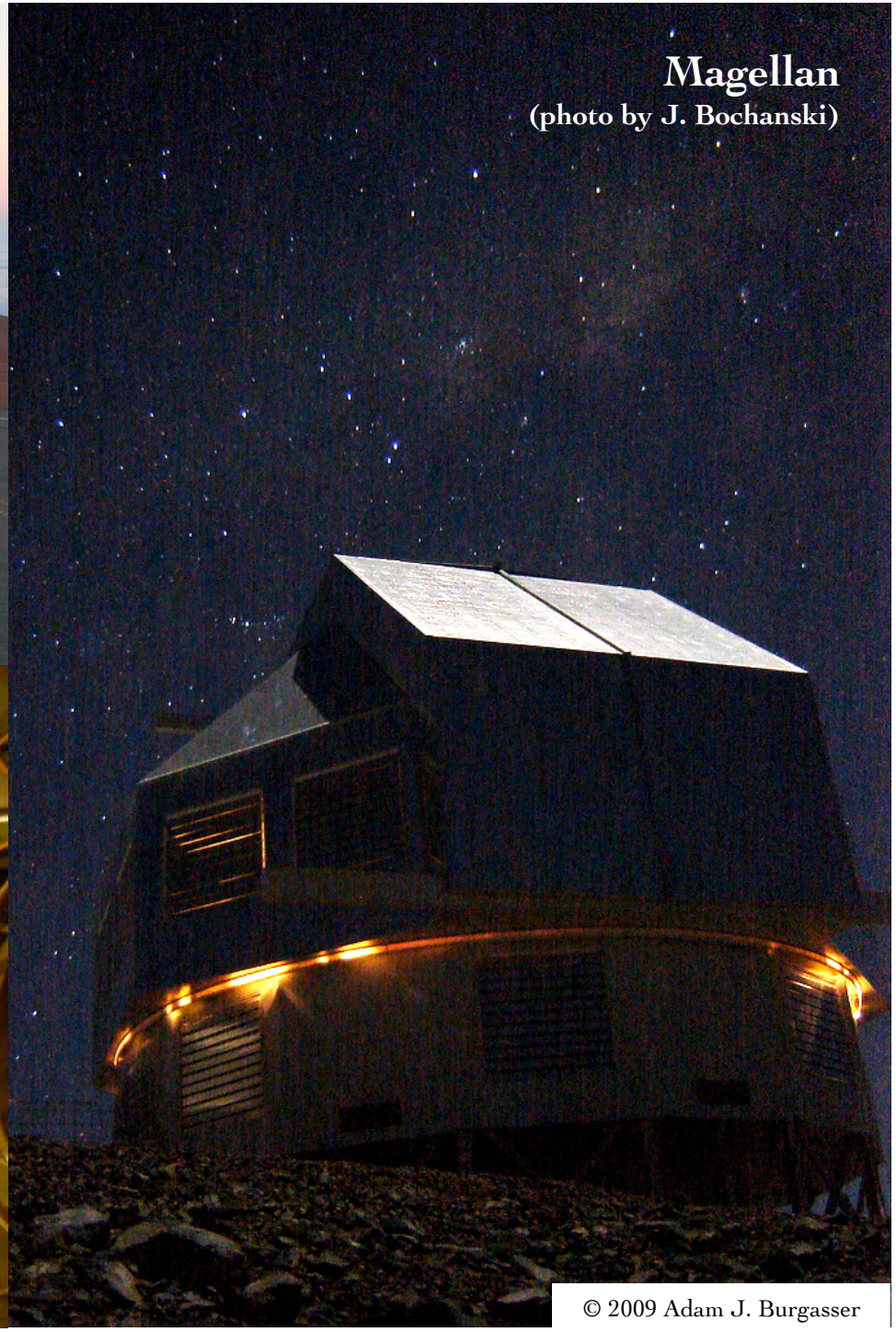
Lowest mass brown dwarf to date ≈ 8 Jupiter masses

Roughly equal in number to stars in the Galaxy

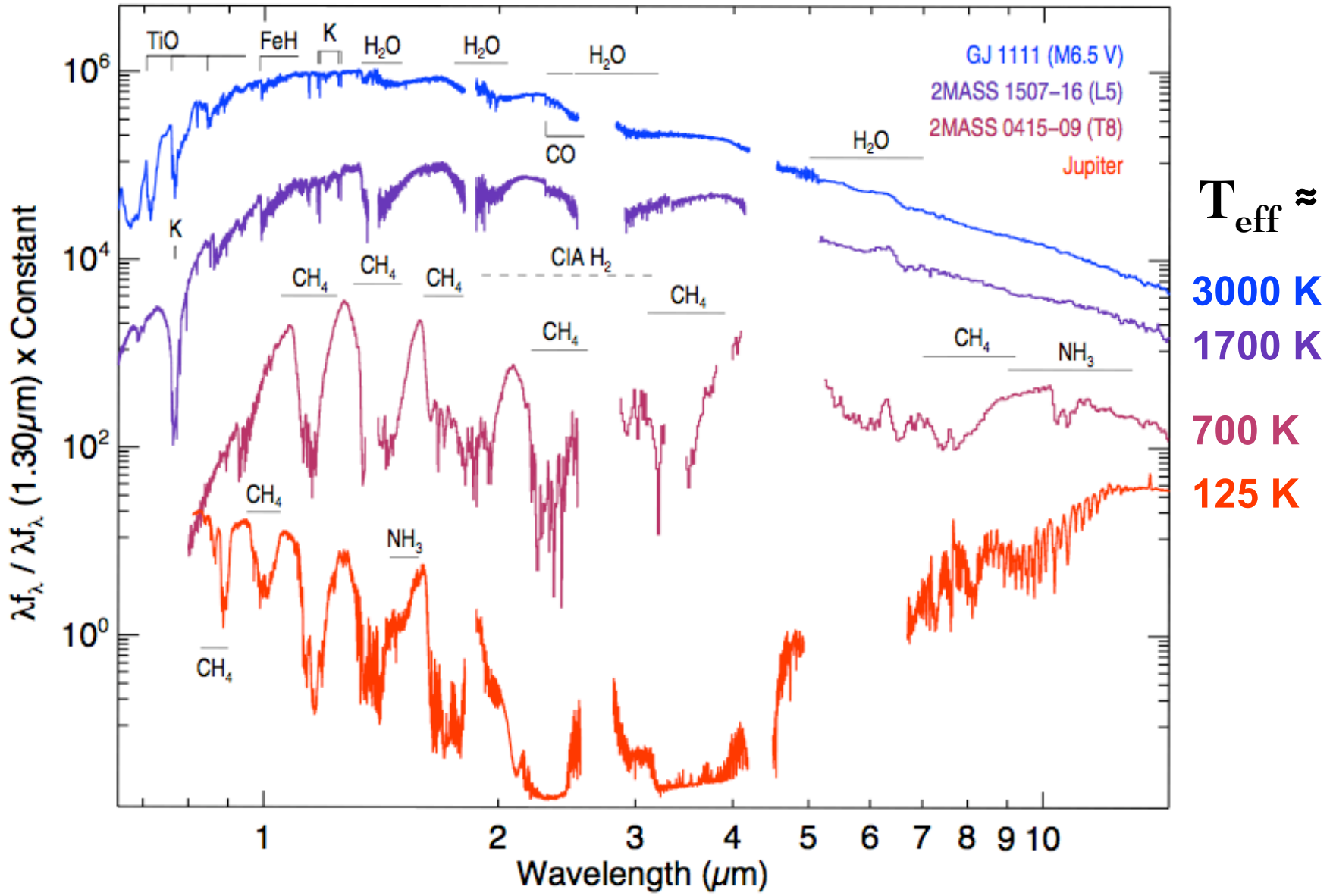


Mauna Kea

Lick Observatory



Magellan
(photo by J. Bochanski)



$T_{eff} \approx$

3000 K

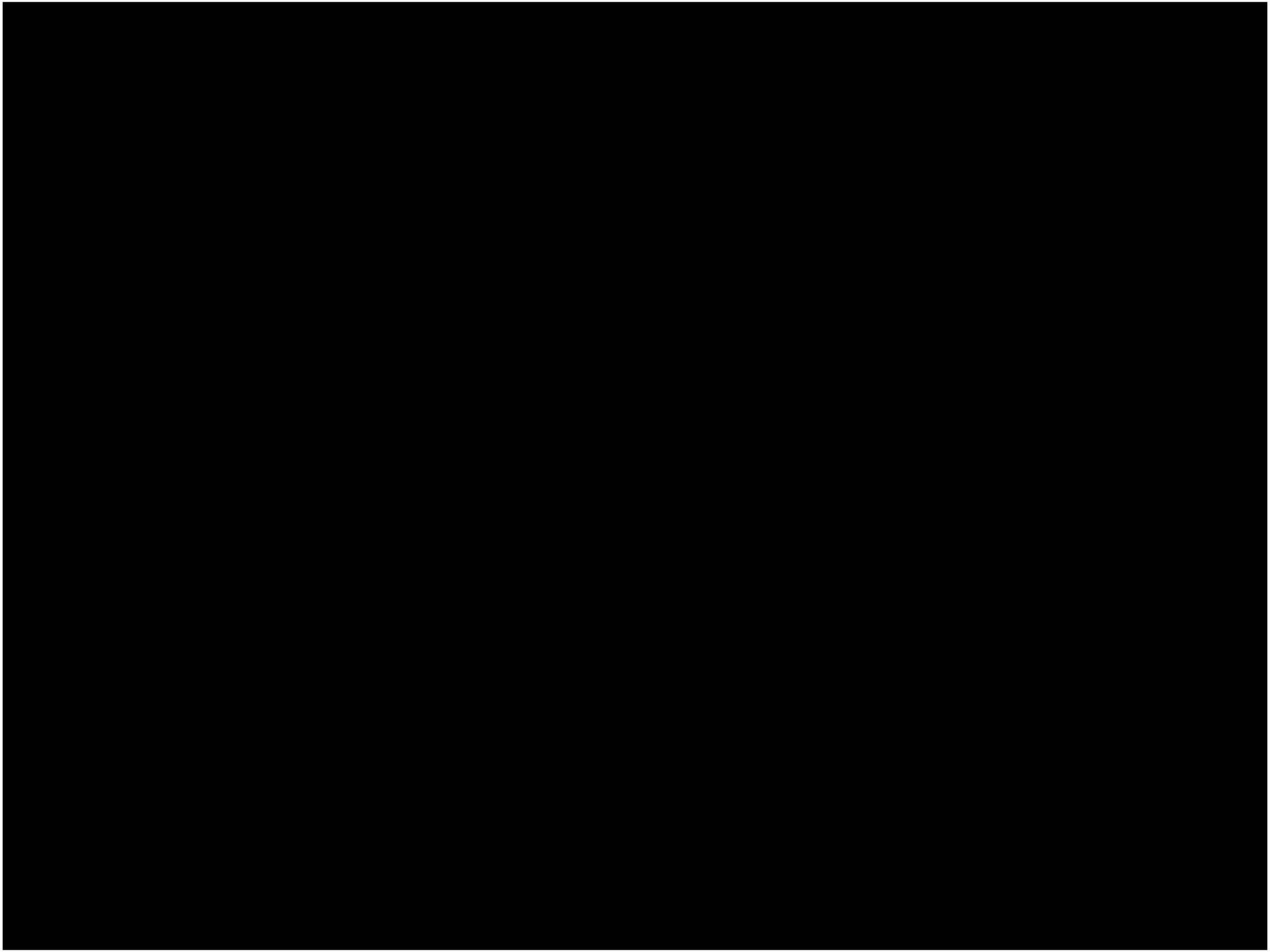
1700 K

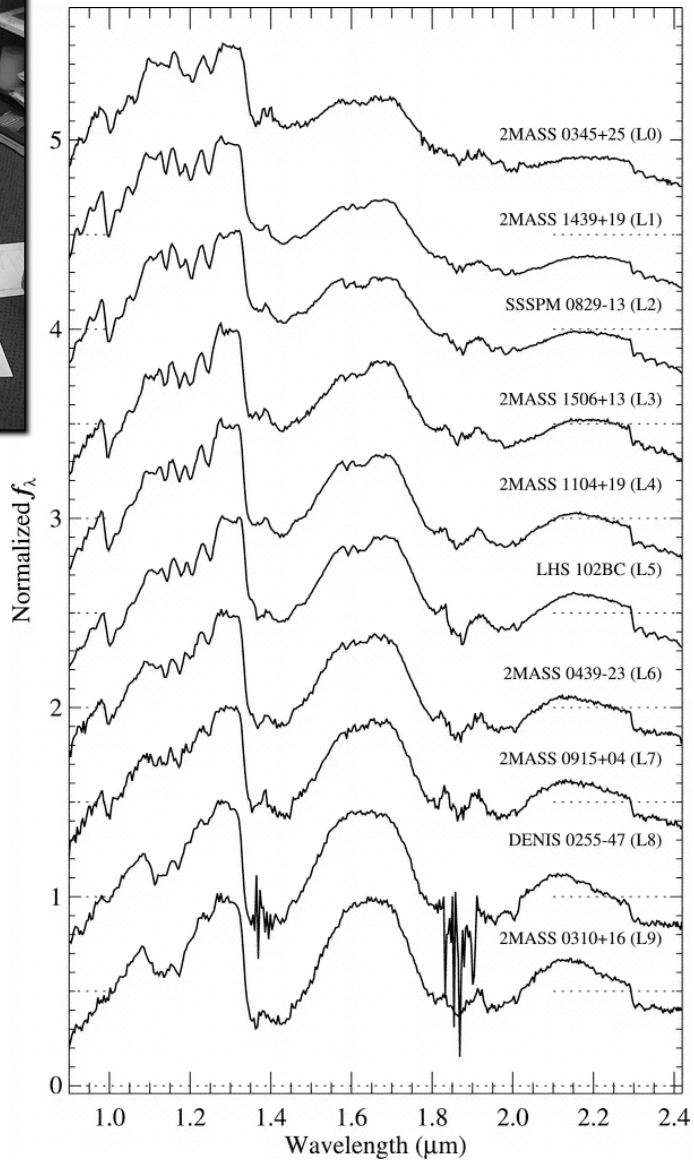
700 K

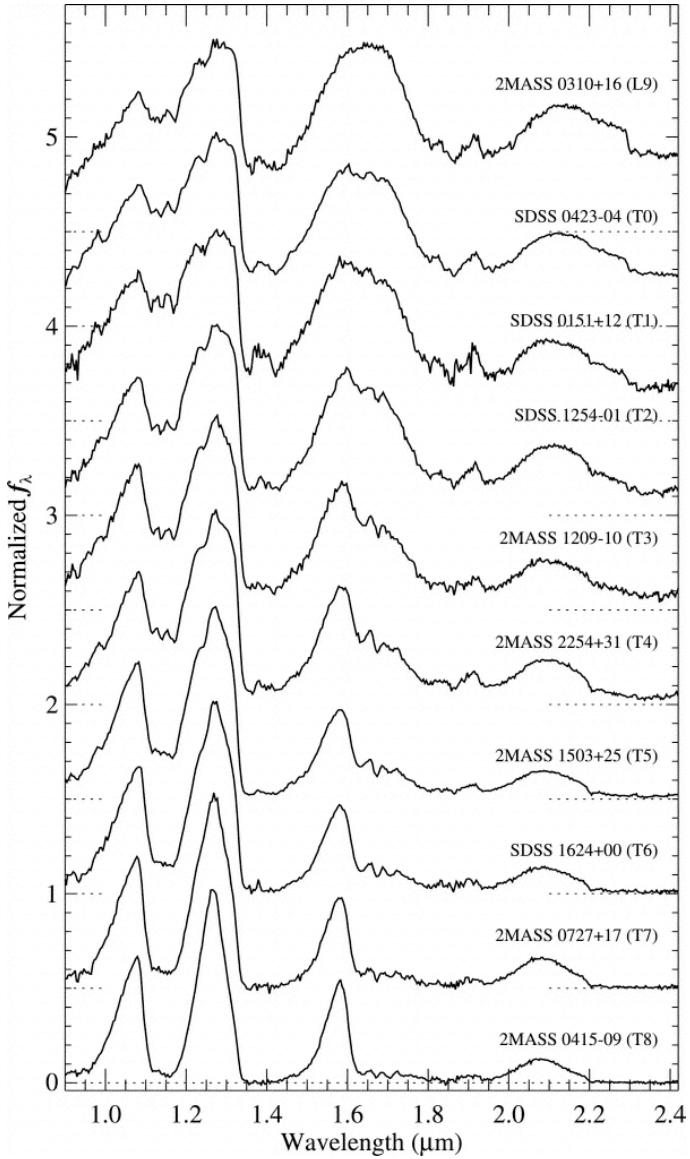
125 K

Marley & Leggett (2008)

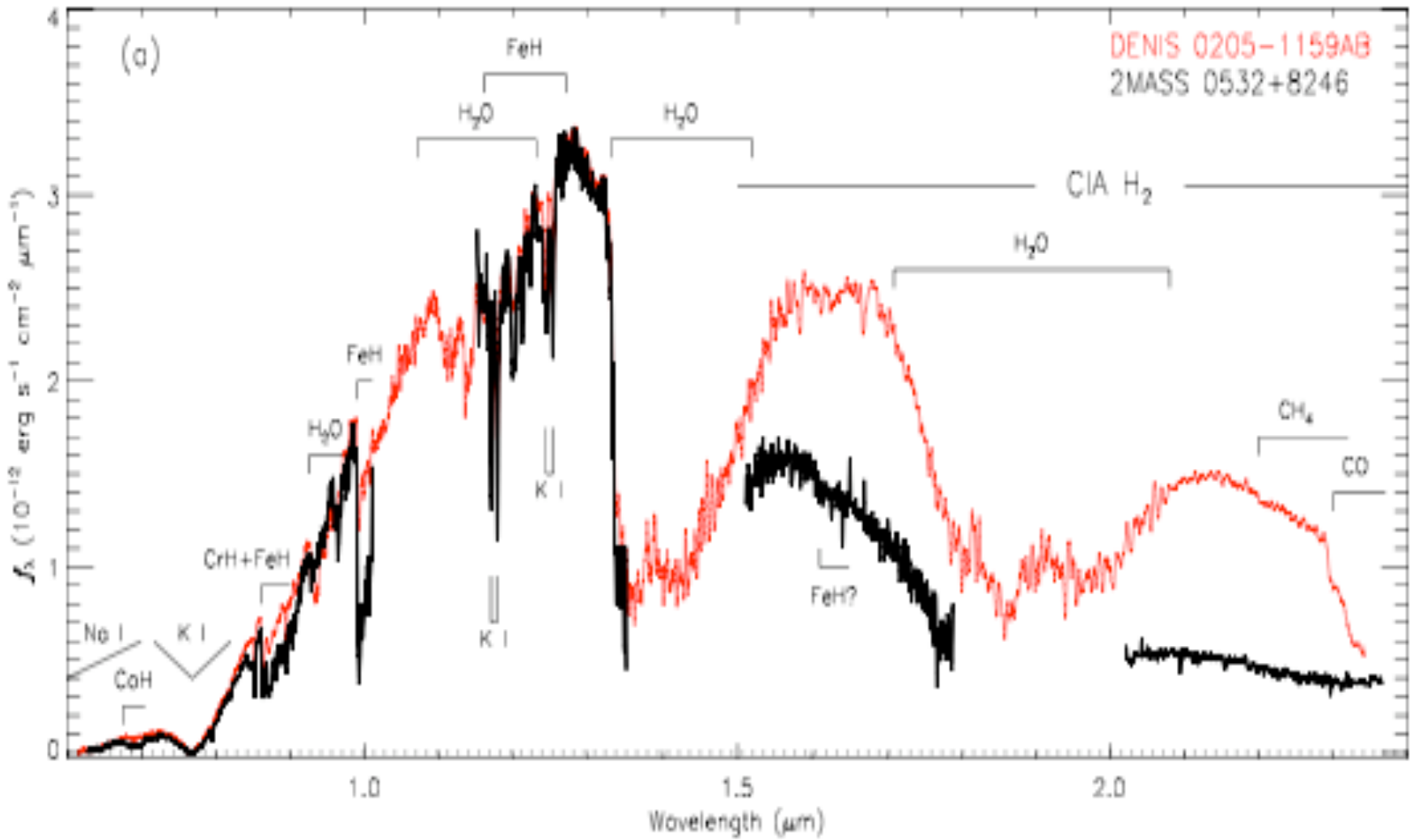
data from Cushing et al. (2005,2007)



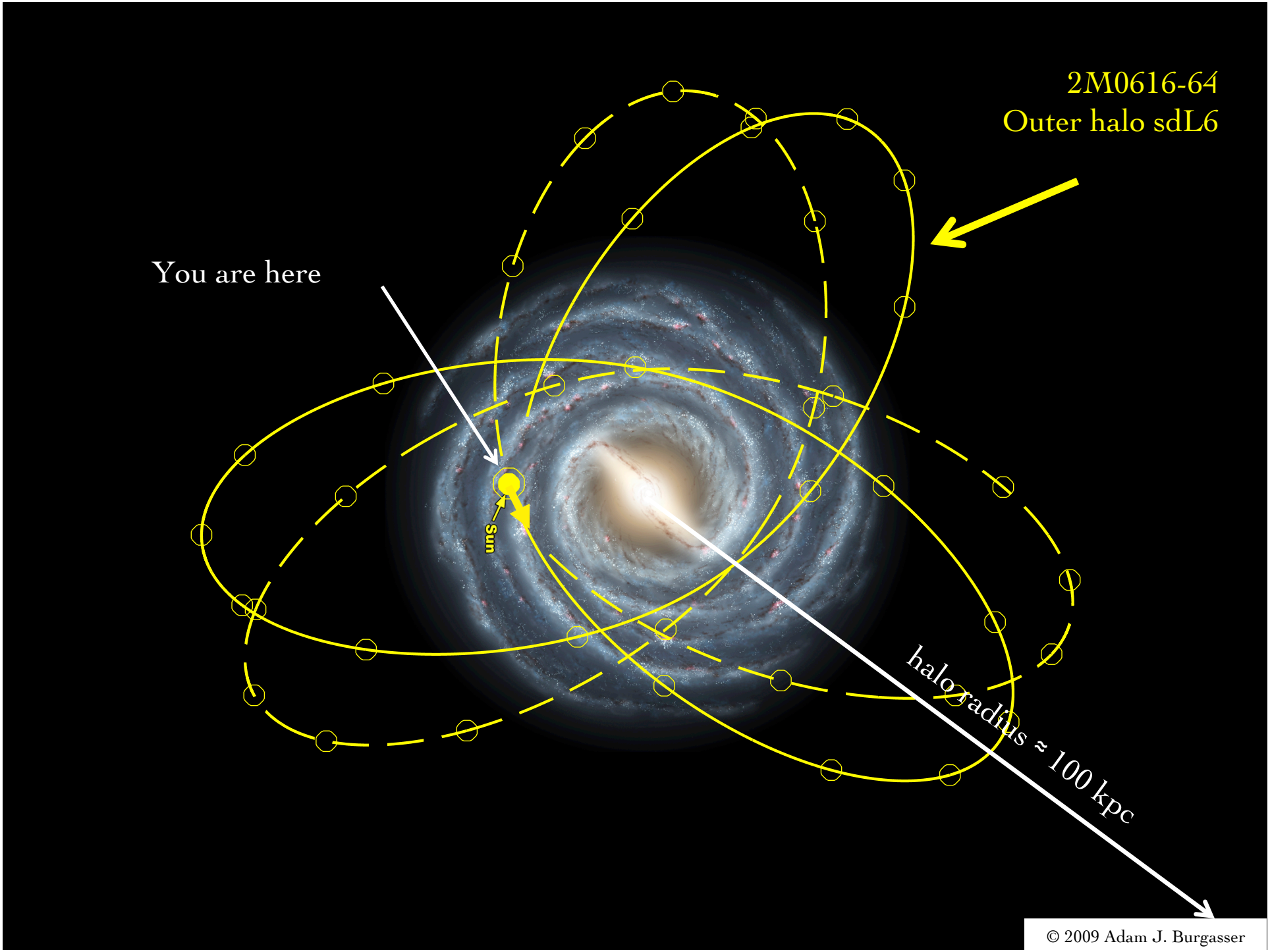




Burgasser (2007)



Burgasser et al. (2003)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Outer halo sdL6
You are here
Sun
halo radius ≈ 100 kpc
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How do you increase your scientific impact?