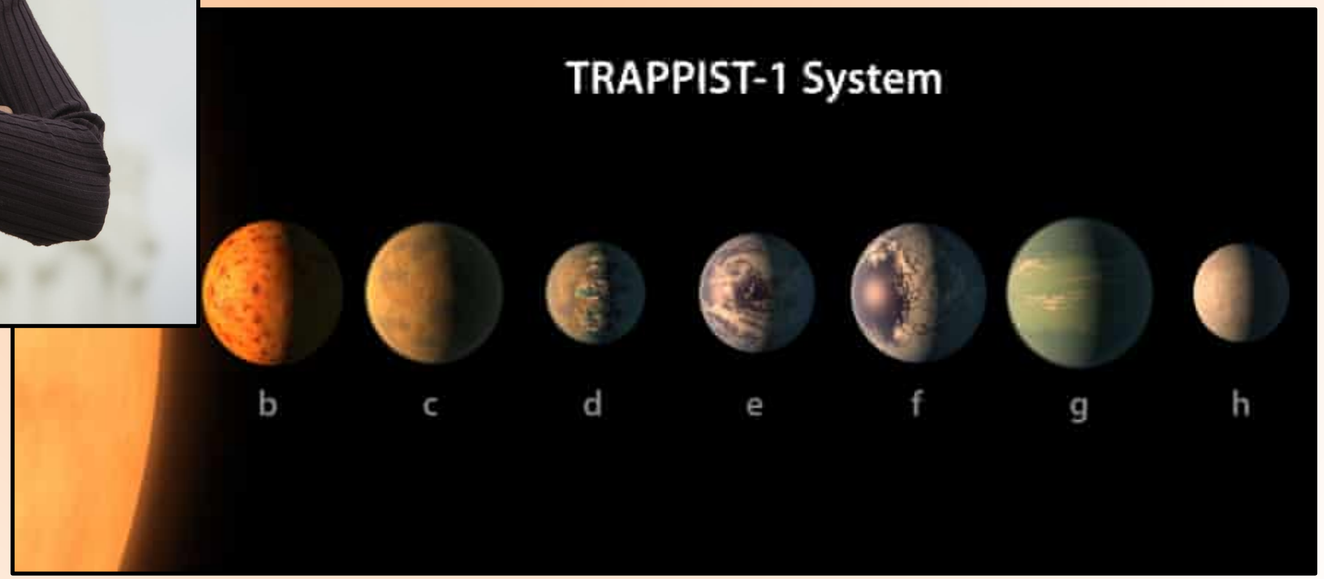
Aomawa Shields is an astronomer and astrobiologist, who studies the climate and habitability of small earth-sized planets orbiting low-mass stars by searching for liquid water.



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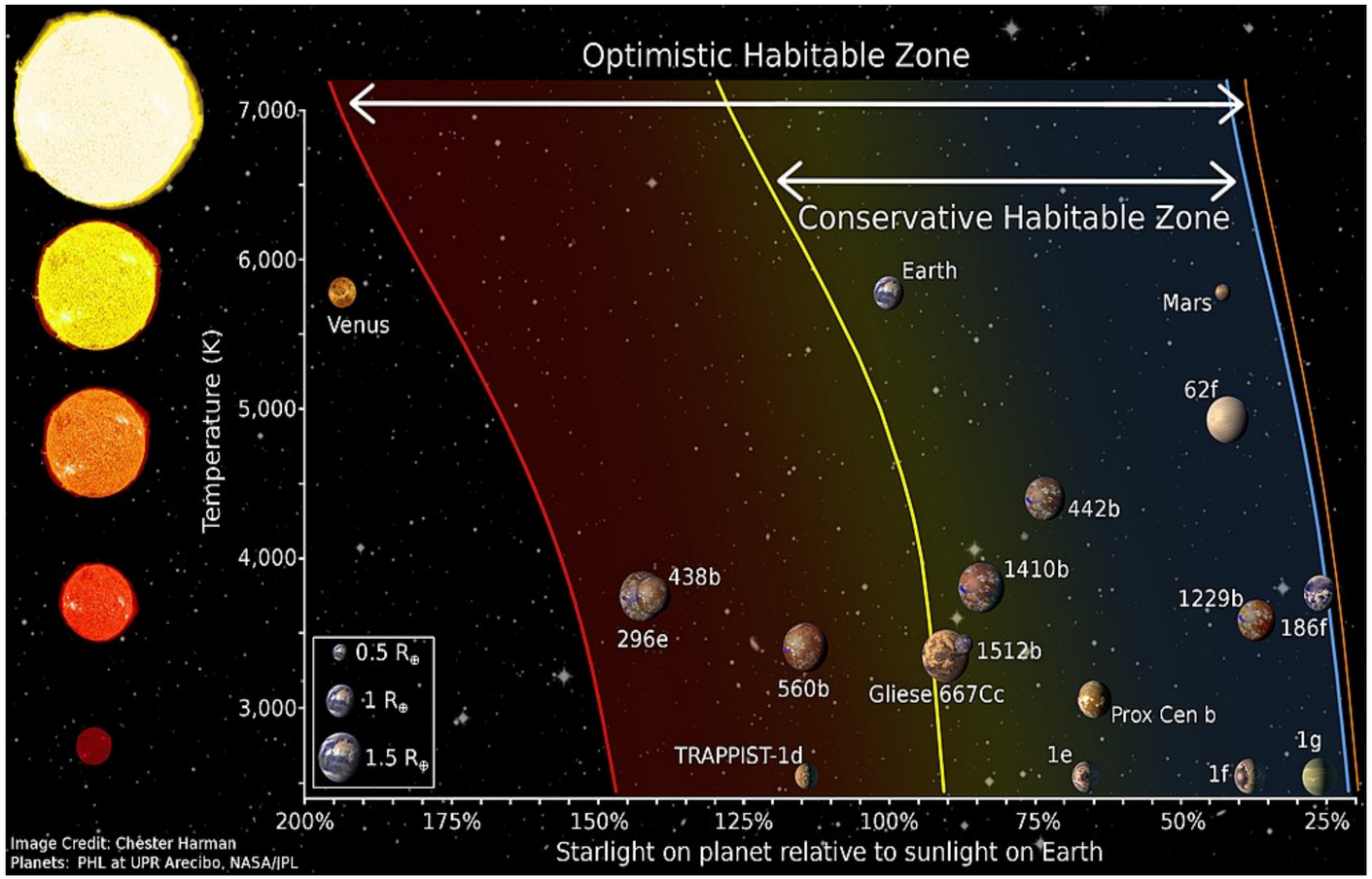
HABITABLE ZONE : ORBITS WHICH SUSTAIN LIQUID WATER

Shields studies how different:

- **Stars types**
- **Planet surfaces**
- **Atmospheres**
- **Orbits**

affect the presence of liquid water on a planet.

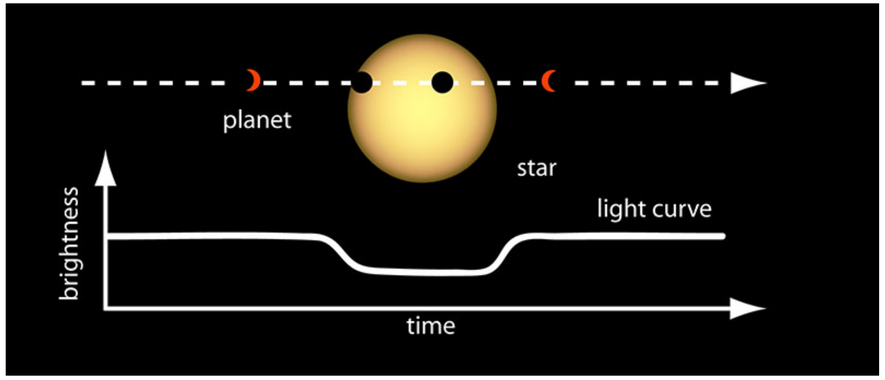


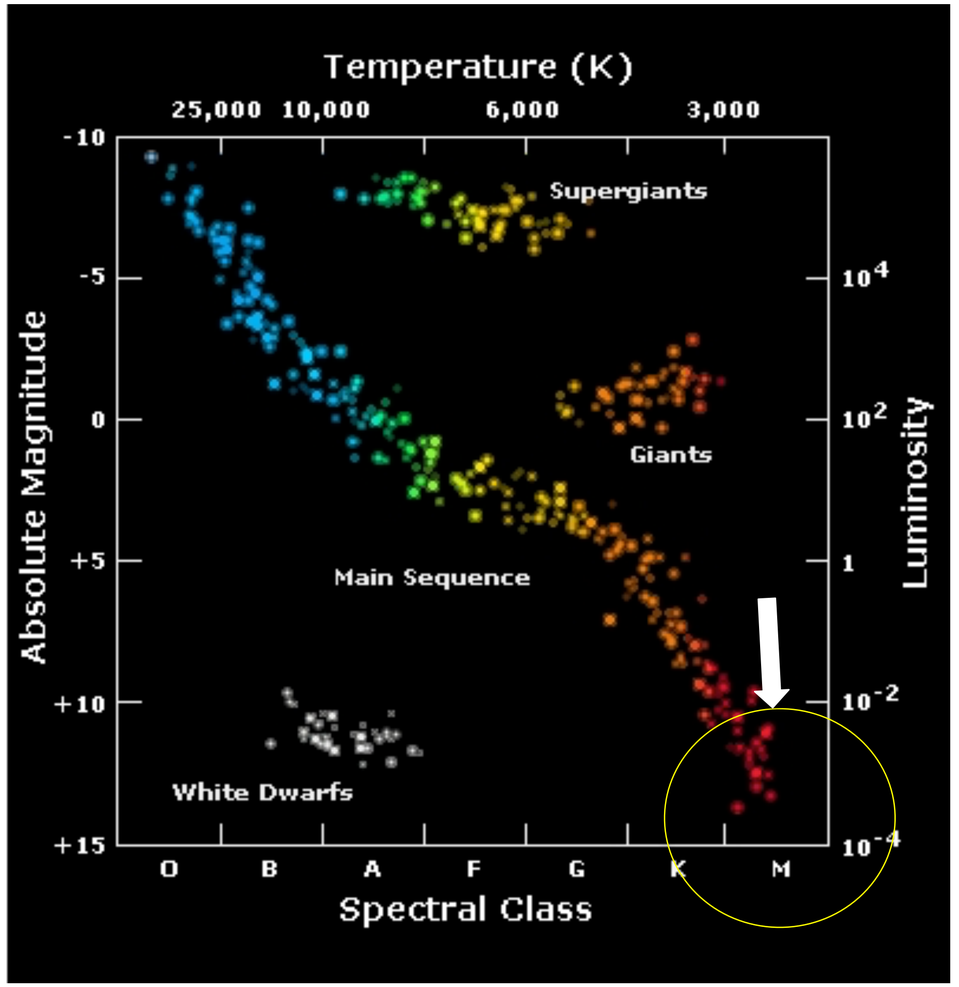
Aomawa Shields is an astronomer and astrobiologist, who studies the climate and habitability of small planets in the earth-sized regime orbiting low-mass stars by searching for liquid water.

Shields studies planets orbiting **M-dwarf** stars, the most common stars in our galaxy and therefore the most likely place for life due to sheer numbers

M-dwarfs compared to our sun are:
- Smaller
- Cooler
- Less bright

Transits detections are more prominent!





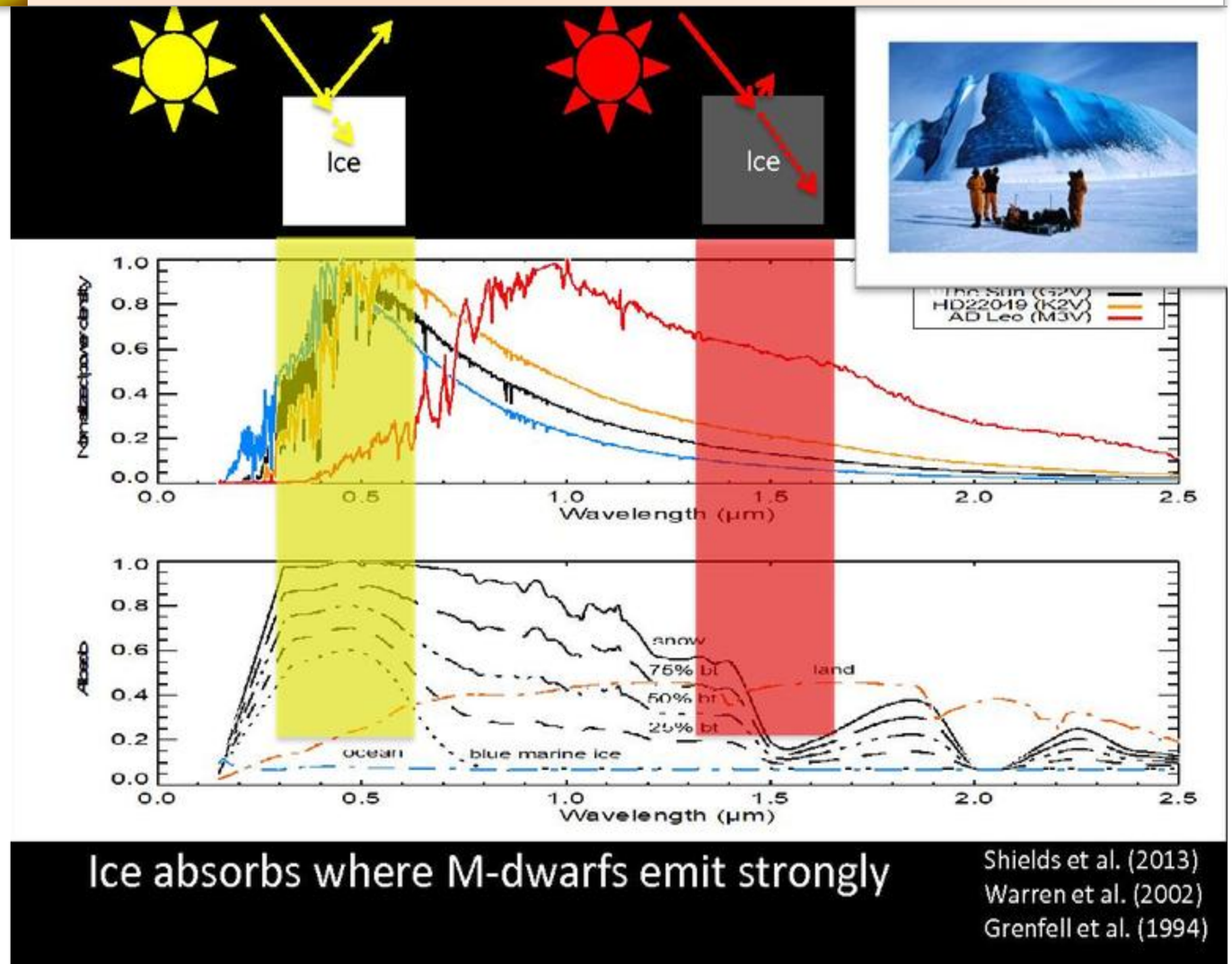
Aomawa Shields is an astronomer and astrobiologist, who studies the climate and habitability of small planets in the earth-sized regime orbiting low-mass stars by searching for liquid water.

Shields studies how the **spectral energy distribution** (SED) of stars affect the presence of liquid water on a planet.

M-dwarf planets are less susceptible to **"snowball earth"** as ice absorbs more in IR, where M-dwarfs emit strongly.

In earth-like atmosphere (CO2+water), more stable against convection.

Overall more stable climates for life!



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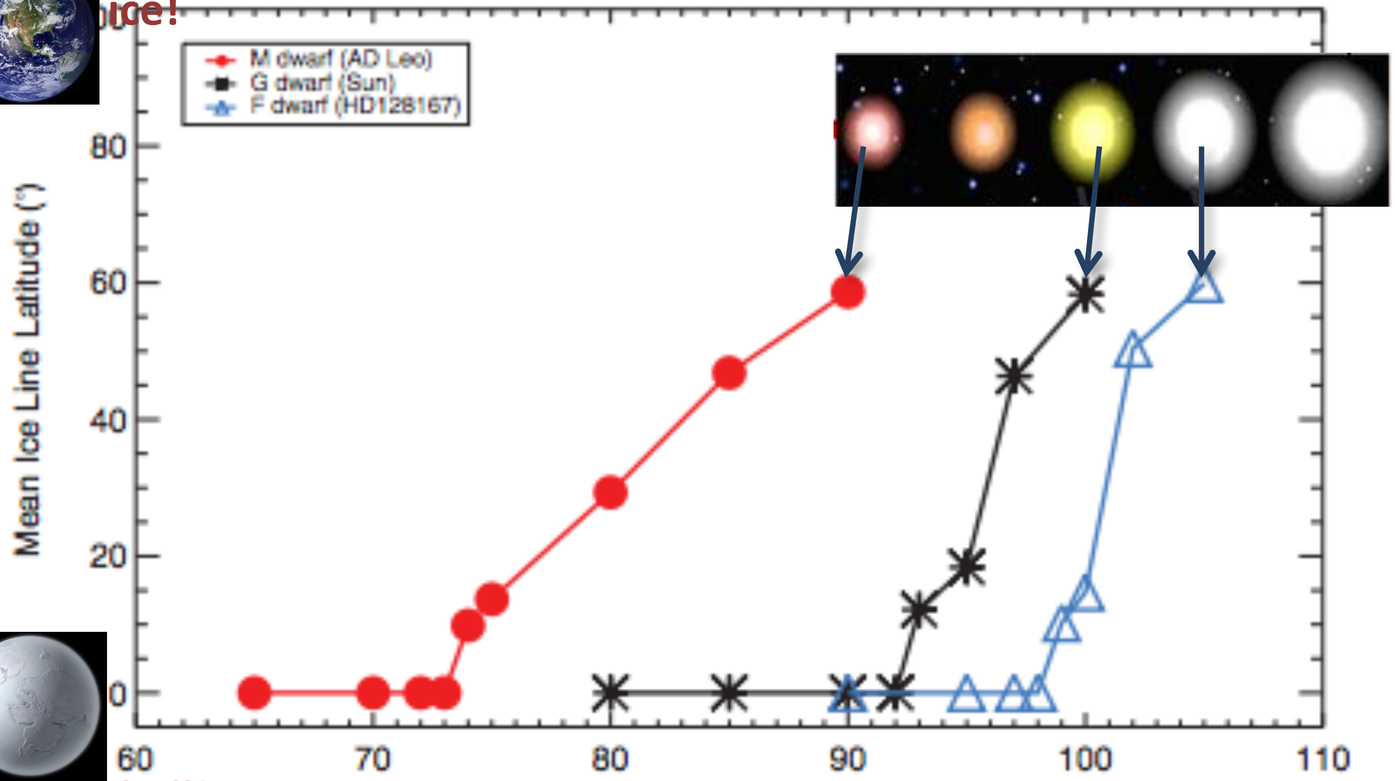
Shields et al. 2013

No ice!

Snowball!