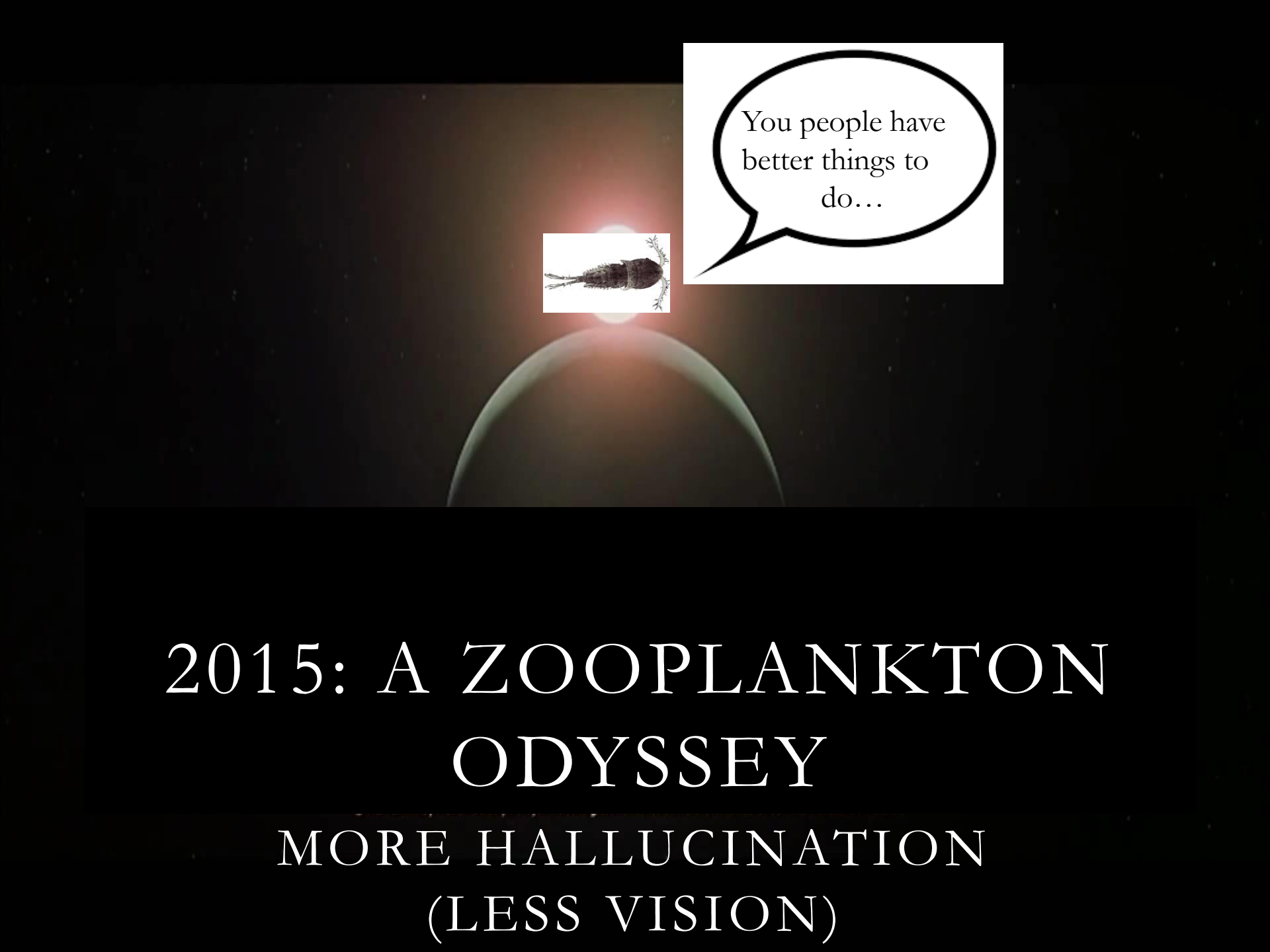




2015: A ZOOPLANKTON ODYSSEY

A BAD IDEA SINCE 2003....



You people have
better things to
do...

2015: A ZOOPLANKTON ODYSSEY

MORE HALLUCINATION
(LESS VISION)

A black and white photograph of space. A curved horizon line, likely Earth's, is visible, with a bright light source (the sun) positioned above it. The text "DIRECTED BY STANLEY KUBRICK" is centered in the middle of the image. At the bottom, a small satellite or spacecraft is visible in the distance.

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STANLEY KUBRICK

Can we detect zooplankton from space— and if we can, what can we say?

- *The Technical Problem* –



- *Calanus finmarchicus* – lipid sac (wax esters), would a lidar be able to detect the (scattering signature) of the full vs. empty lipid sac?
- Gulf of Maine / N. Atlantic test case of their “life cycle” – what do we know?
- Winter/spring onset of phytoplankton bloom
- *Calanus* diapause in ~summer
- GOM (200m) v. N. Atl (2000m)
- Can lidar help to elucidate population dynamics of *Calanus* spp. In the GOM/N. Atl

- *The Science Problem* – Could that give us insight in to the diapausing pattern or triggers (who becomes mature, who doesn't, when and why, what are the drivers (environmental?))
- Can we detect the change in the lipid sac content and know when the *Calanus* are coming out of diapause? Might help identify what the trigger(s) of the conclusion of diapause is/are?
- Wrench in plan – how dense is the “layer”? Phytos mixed in, can we separate signals?
- We know that zooplankton go through a diel migration. We know phytoplankton don't. We can fire the laser during the day and at night....
- Abundance matters from perspective of secondary production
- Go one step further and look at fecal pellets
- And what about surfactants (wax esters in surface waters with peaks summer)- Can you detect surface slicks using radar perhaps?
- What drives the end of diapause (hormonal, environmental, match to phytos, etc.)
- Is the macrozooplankton biological activity “measureable” in the upper 3 optical depths?