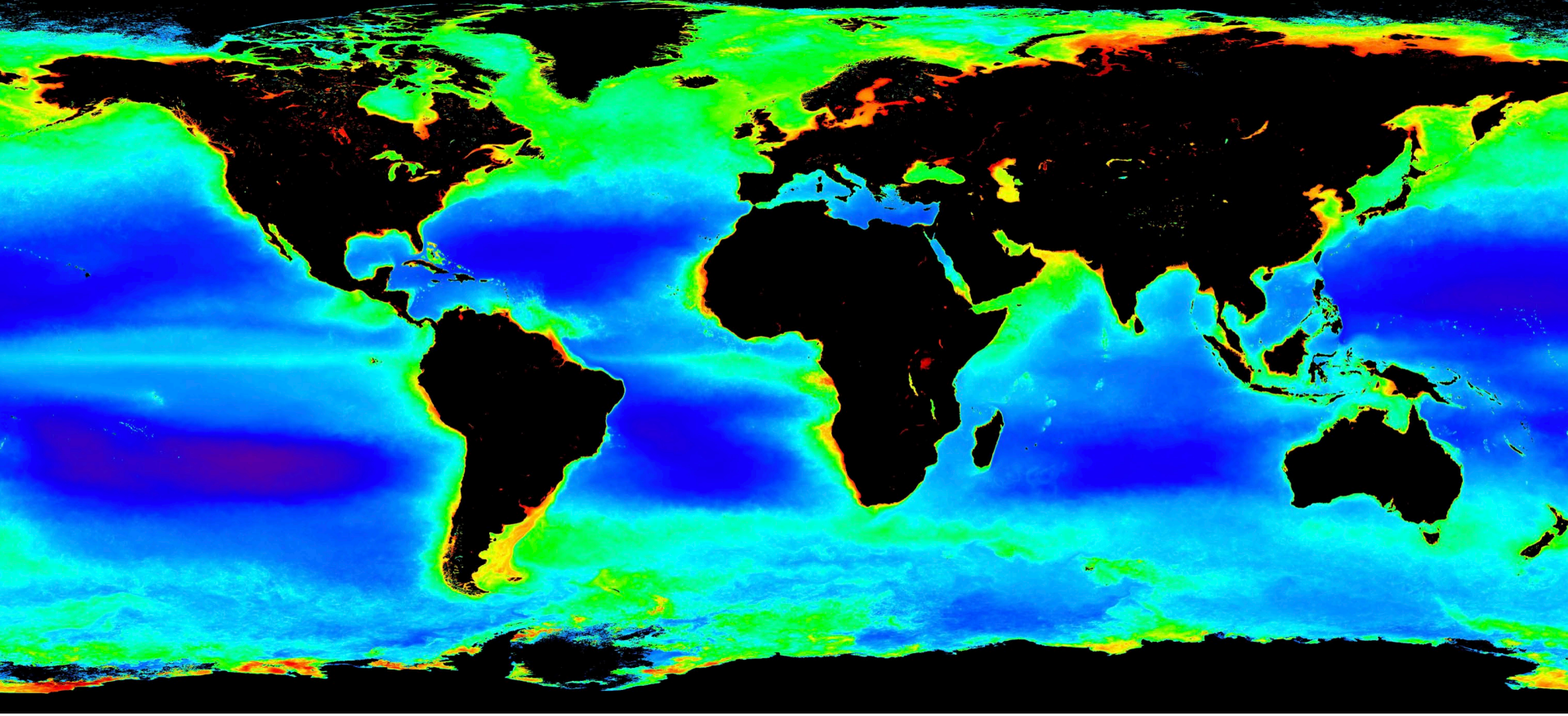


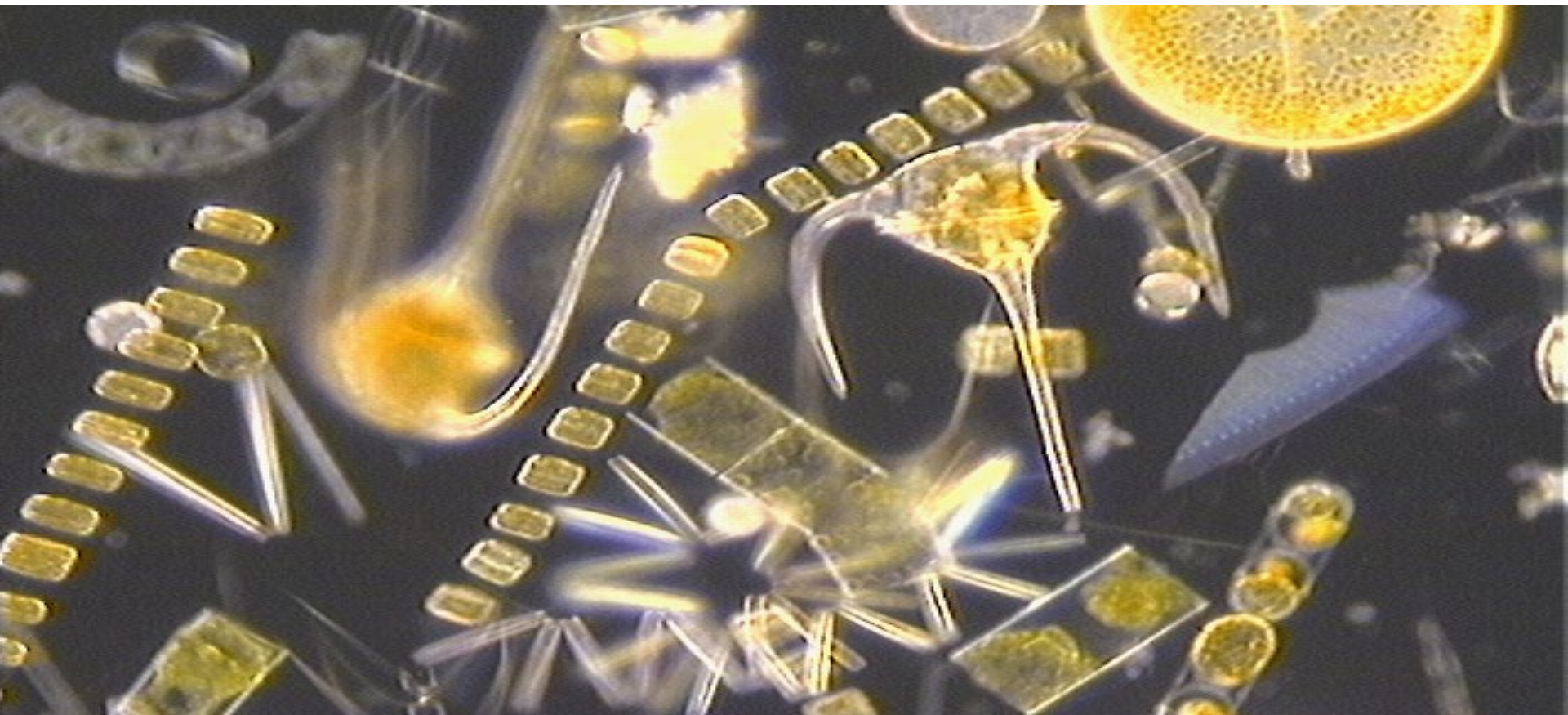
Introduction to PlanktoScope

International Workshop and Training on CFP, Lombok, 2023



Two Questions — 1. How much food is there.....

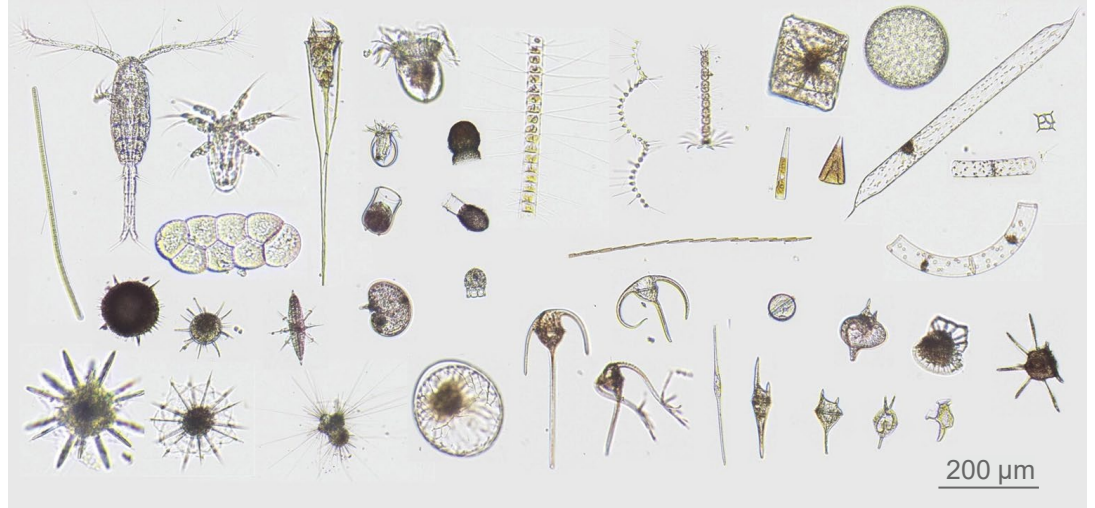
.... and Who is There?



What is PlanktoScope?

A microscope which:

- takes images of all plankton in a water sample



What is PlanktoScope?

A microscope which:

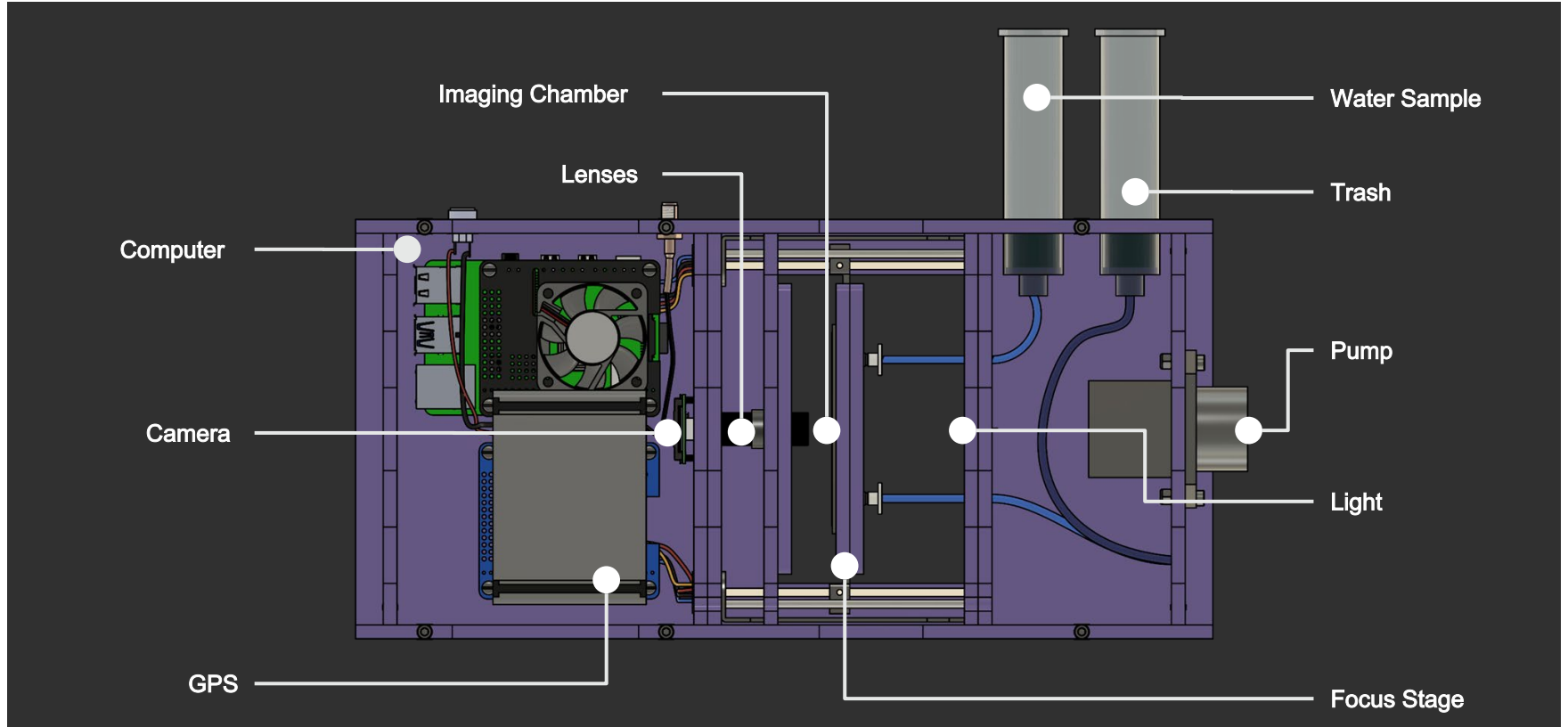
- takes images of all plankton in a water sample
- can automatically count each type of plankton

What is PlanktoScope?

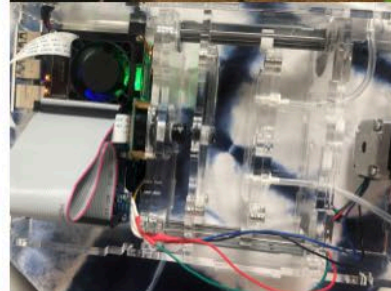
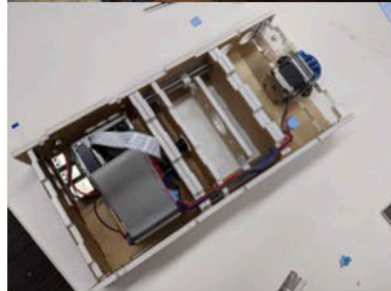
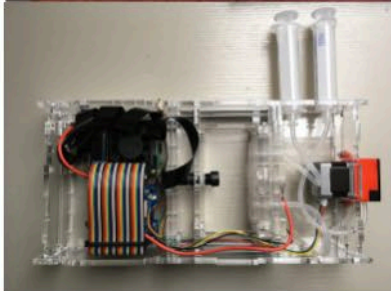
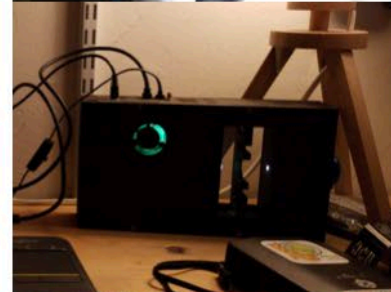
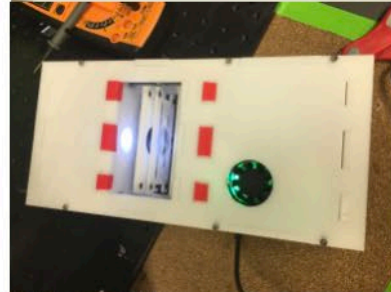
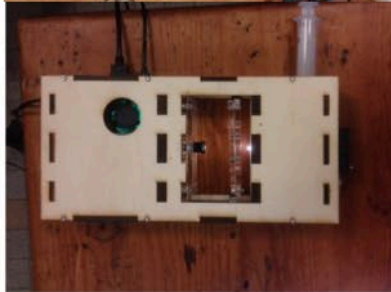
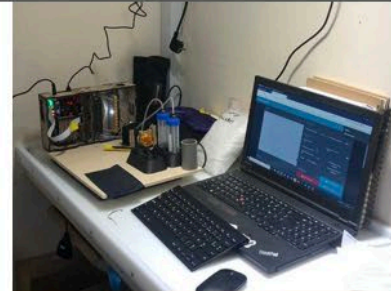
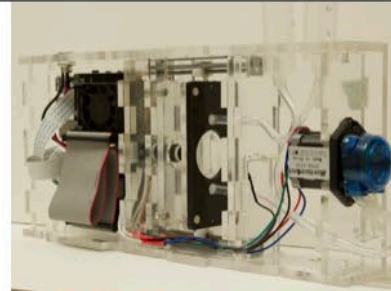
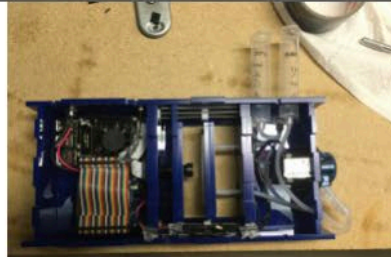
A microscope which:

- takes images of all plankton in a water sample
- can automatically count each type of plankton
- costs \$400 - 500 USD in components

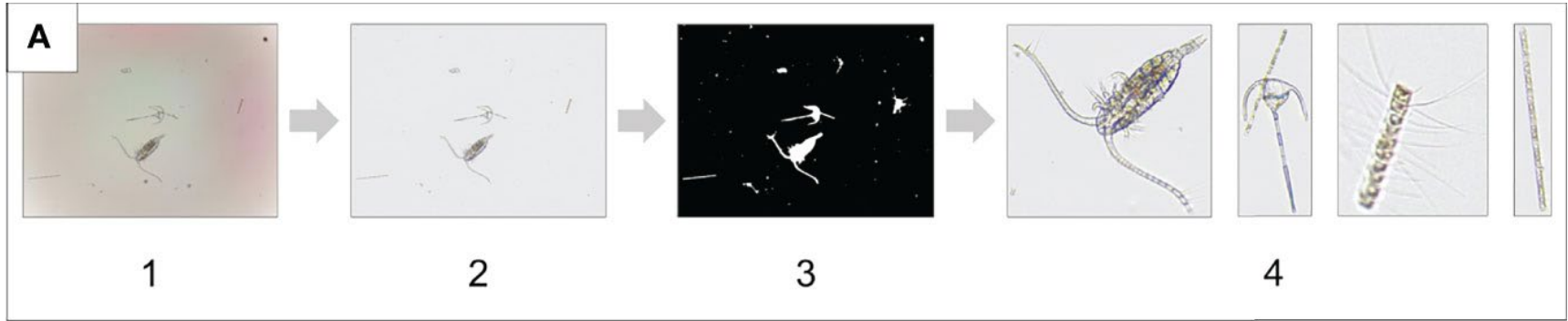
How does PlanktoScope work?



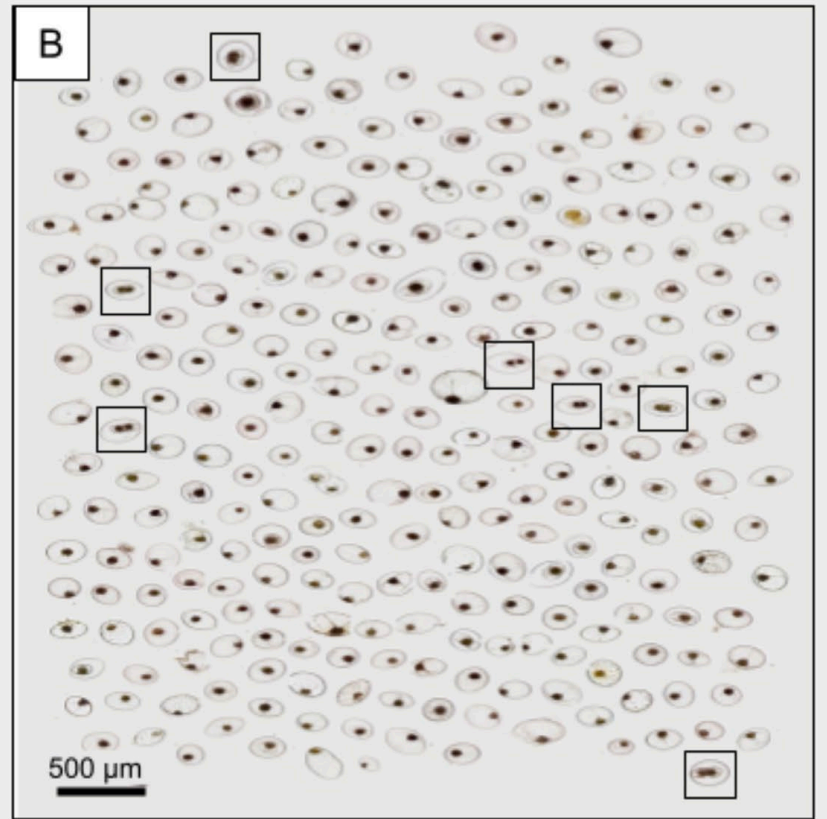
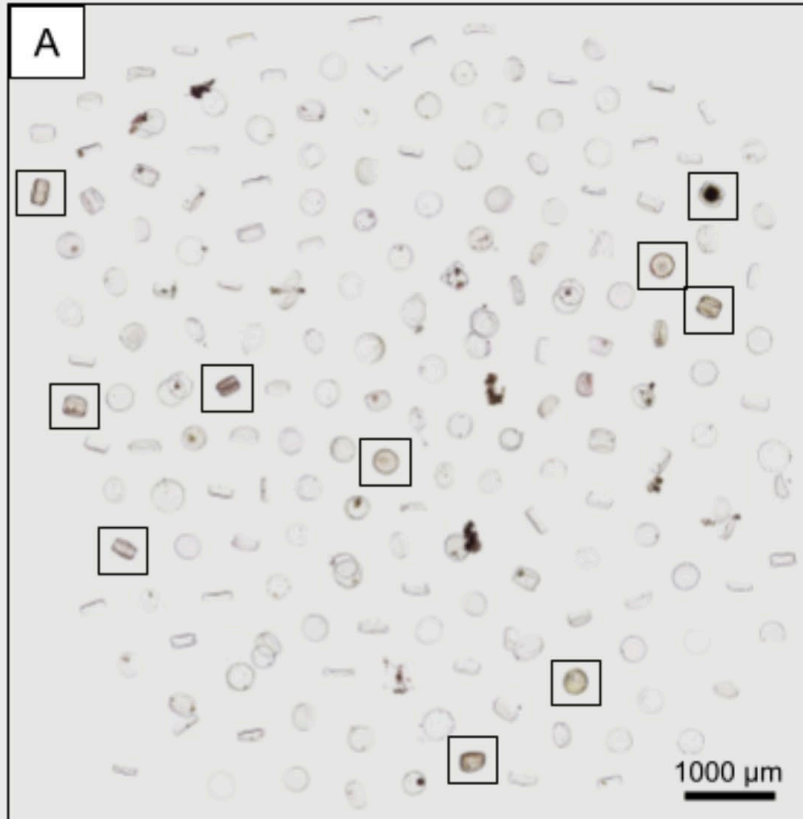
Deployment - Over 30 replications over the world



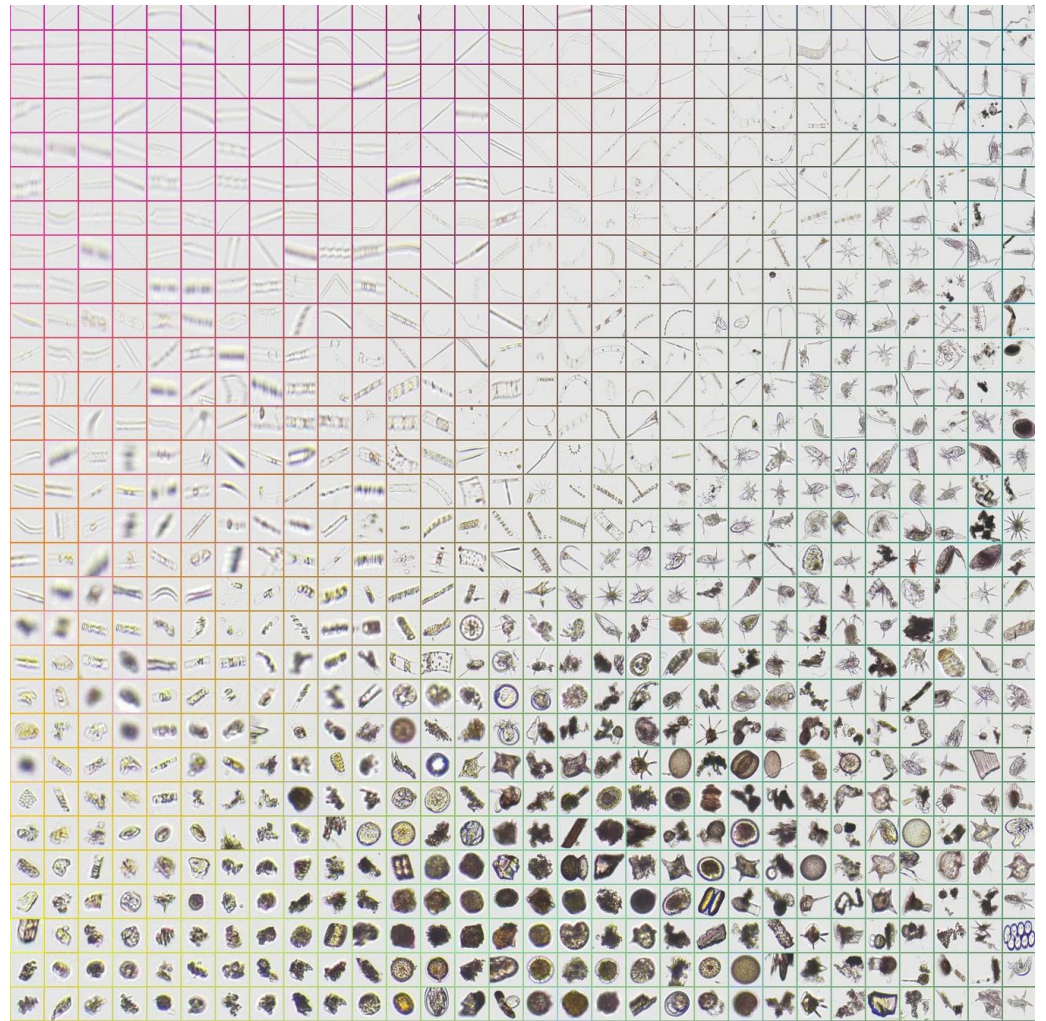
What data does Planktoscope produce?



Planktoscope Images



Planktoscope Image Database



What does EcoTaxa do?

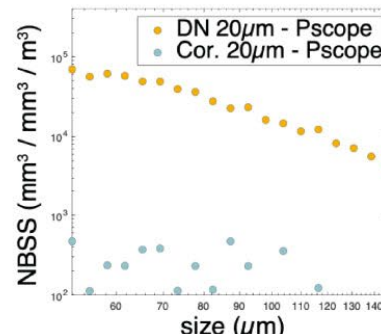
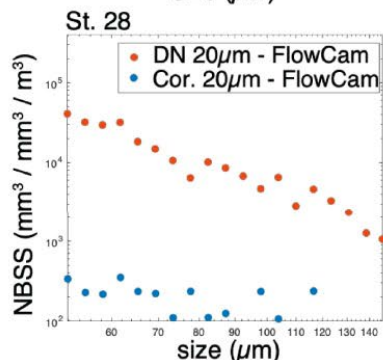
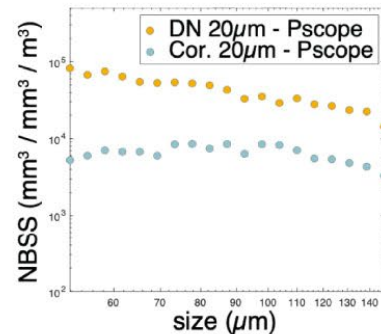
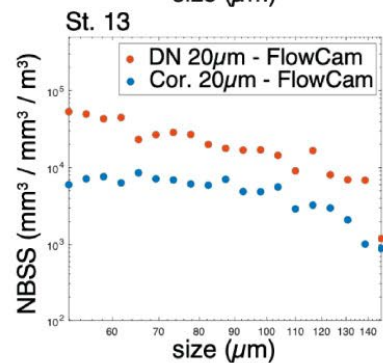
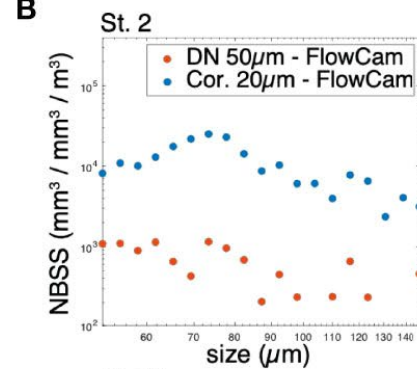
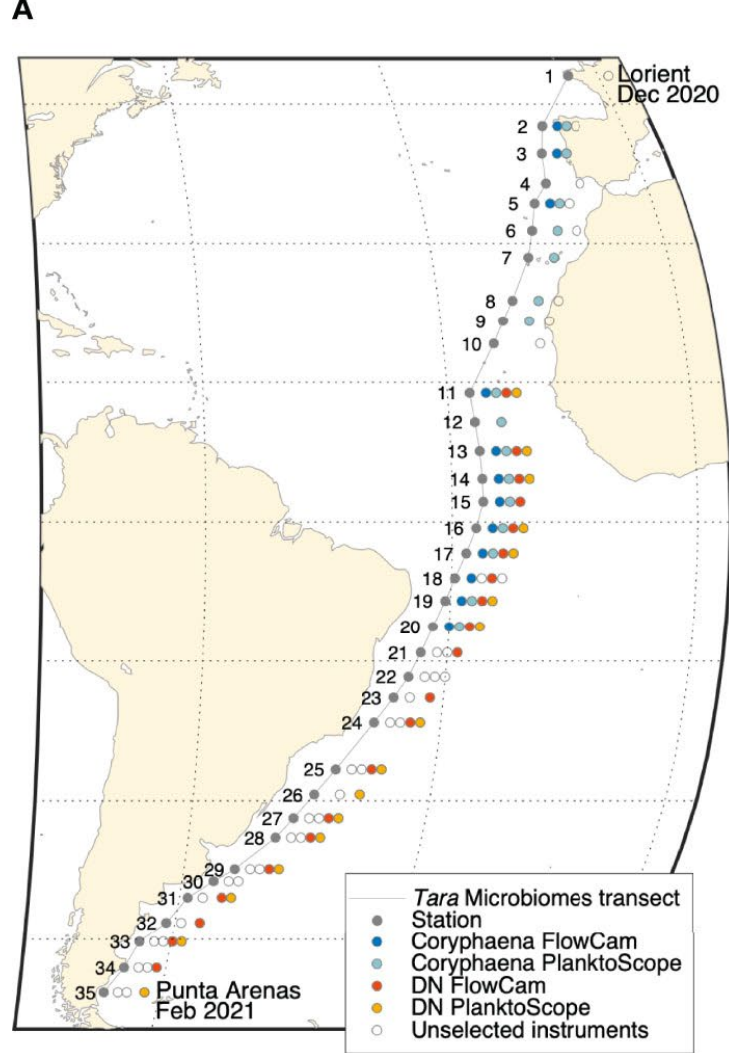
EcoTaxa 2.5 Project Filtered Filter: Taxo=Ceratium sp. X Run: 2 Error: 2 Done: 2
Planktoscope FortM (0, 644, 0, 0 / 644) Fabien Lombard (log out) Action

Update view & apply filter Select all Score Display Status All 100% 30

Taxonomy filter 1 Other filters

- Asterionellopsis 0 16
- Copepoda 0 1
 - nauplii < Copepoda 0 146
- Coscinodiscophycidae 8 44
 - Bacteriastrium < Chaetoceratales 0 209
 - Chaetoceros < Chaetoceratales 0 19
- Dinophyceae 0 855
 - Ceratium sp. 0 644**
 - Neoceratium 01 0 608
 - Neoceratium furca < Neoceratium 0 100
 - Neoceratium pentagonum 0 99
 - Noctiluca < Noctilucaeae 0 16
- Oxytoxum 16 244
- Pyrophacus 0 2
- Ditylum 0 74
- Eucampia 0 22
- Eutintinnus 0 213

Image	Label	Score
	Ceratium sp.	Score : 0.91
	Ceratium sp.	Score : 0.89
	Ceratium sp.	Score : 0.83
	Ceratium sp.	Score : 0.83
	Ceratium sp.	Score : 0.82
	Ceratium sp.	Score : 0.81
	Ceratium sp.	Score : 0.80
	Ceratium sp.	Score : 0.80
	Ceratium sp.	Score : 0.79
	Ceratium sp.	Score : 0.78
	Ceratium sp.	Score : 0.76
	Ceratium sp.	Score : 0.76
	Ceratium sp.	Score : 0.76
	Ceratium sp.	Score : 0.76
	Ceratium sp.	Score : 0.76
	Ceratium sp.	Score : 0.75
	Ceratium sp.	Score : 0.75
	Ceratium sp.	Score : 0.74
	Ceratium sp.	Score : 0.74
	Ceratium sp.	Score : 0.73
	Ceratium sp.	Score : 0.70
	Ceratium sp.	Score : 0.70
	Ceratium sp.	Score : 0.70
	Ceratium sp.	Score : 0.70
	Ceratium sp.	Score : 0.70
	Ceratium sp.	Score : 0.69
	Ceratium sp.	Score : 0.69
	Ceratium sp.	Score : 0.68
	Ceratium sp.	Score : 0.68
	Ceratium sp.	Score : 0.68
	Ceratium sp.	Score : 0.68
	Ceratium sp.	Score : 0.68
	Ceratium sp.	Score : 0.67
	Ceratium sp.	Score : 0.66
	Ceratium sp.	Score : 0.66
	Ceratium sp.	Score : 0.66
	Ceratium sp.	Score : 0.66
	Ceratium sp.	Score : 0.65
	Ceratium sp.	Score : 0.65
	Ceratium sp.	Score : 0.65



Resources

In English:

- Website: <https://www.planktoscope.org/>
- Paper by Thibaut Pollina, Adam G. Larson, et al. published in *Frontiers in Marine Science* , July 2022: <https://doi.org/10.3389/fmars.2022.949428>
- Usage instructions for scientists: https://www.protocols.io/view/planktoscope_-_protocol_for_plankton_imaging_bytypwpw.html

Planktoscope Training — Lombok, Jan 2023



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