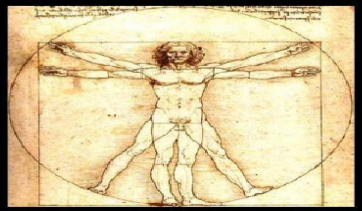
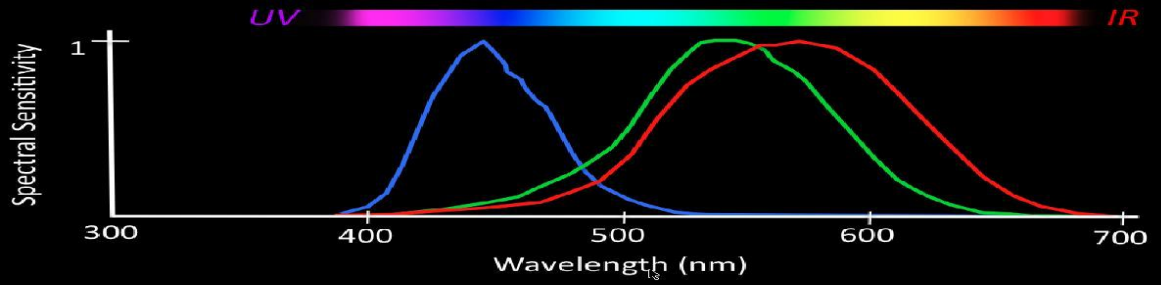
Fig. 1.2.3D

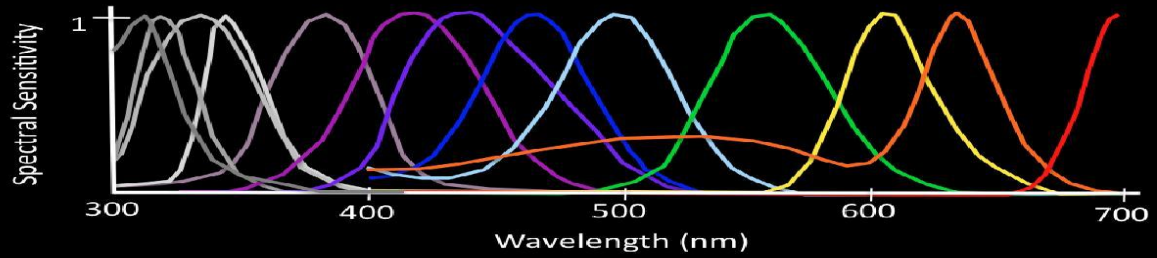
# Mantis Shrimp: Extraordinary Eyes

*Homo sapiens*






*Neogonodactylus oestedii*




Marshall *et al.*, 2007; Marshall and Oberwinkler, 1999

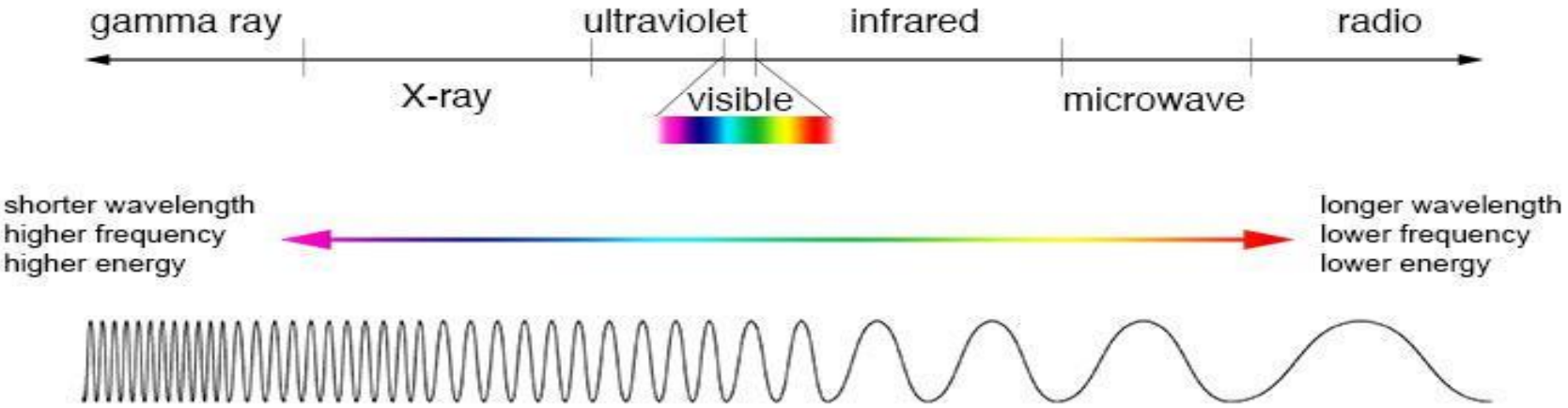
# EXPERT MINER

**Team biteCode**
Gihan Chanaka Jayatilaka
Harshana Sumedha Weligampola
Suren Sritharan

# DISCOVERING EARTH RESOURCES IN SRI LANKA USING HYPER SPECTRAL IMAGERY (HSI)

Objective : To pinpoint the earth resource locations in the country

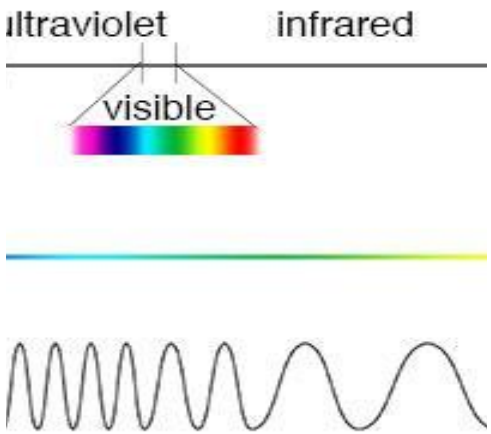
# The Electromagnetic Spectrum



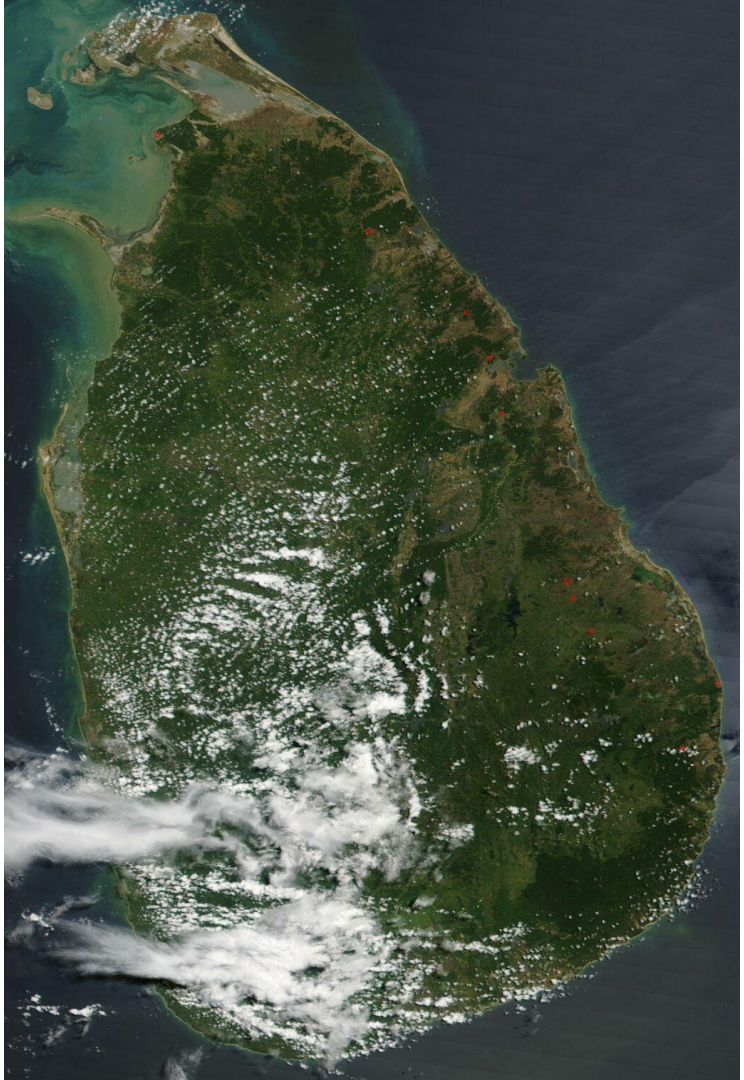
# Normal RGB Cameras

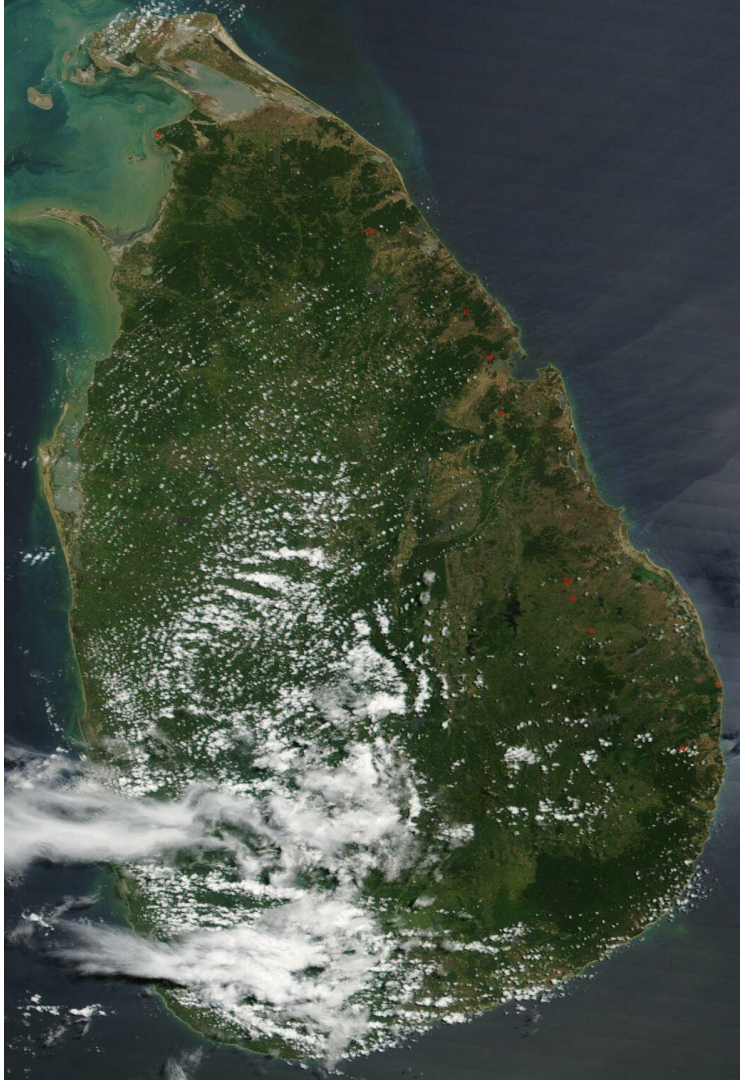

3 colour bands

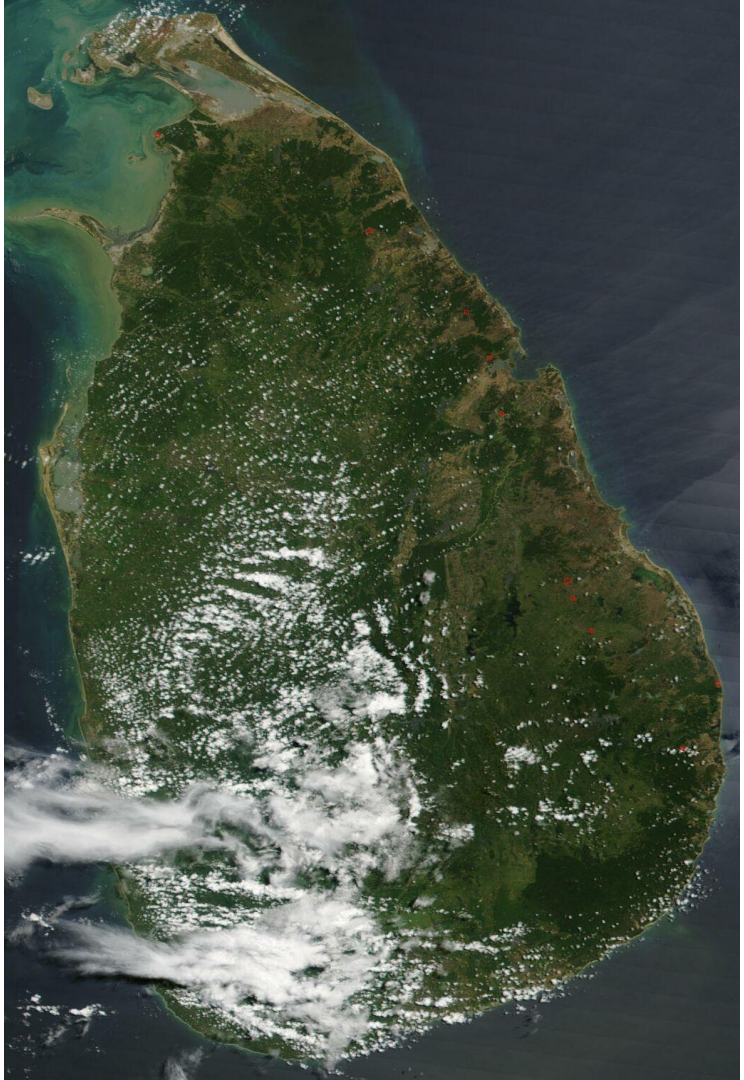
# Hyperspectral Cameras

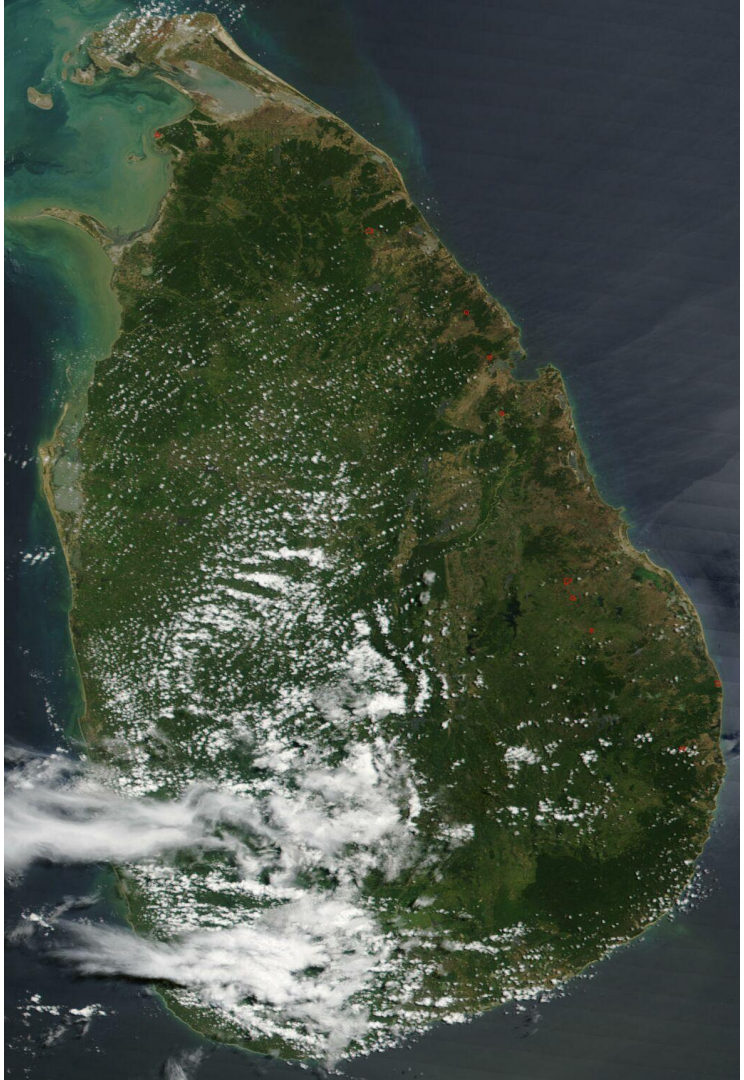


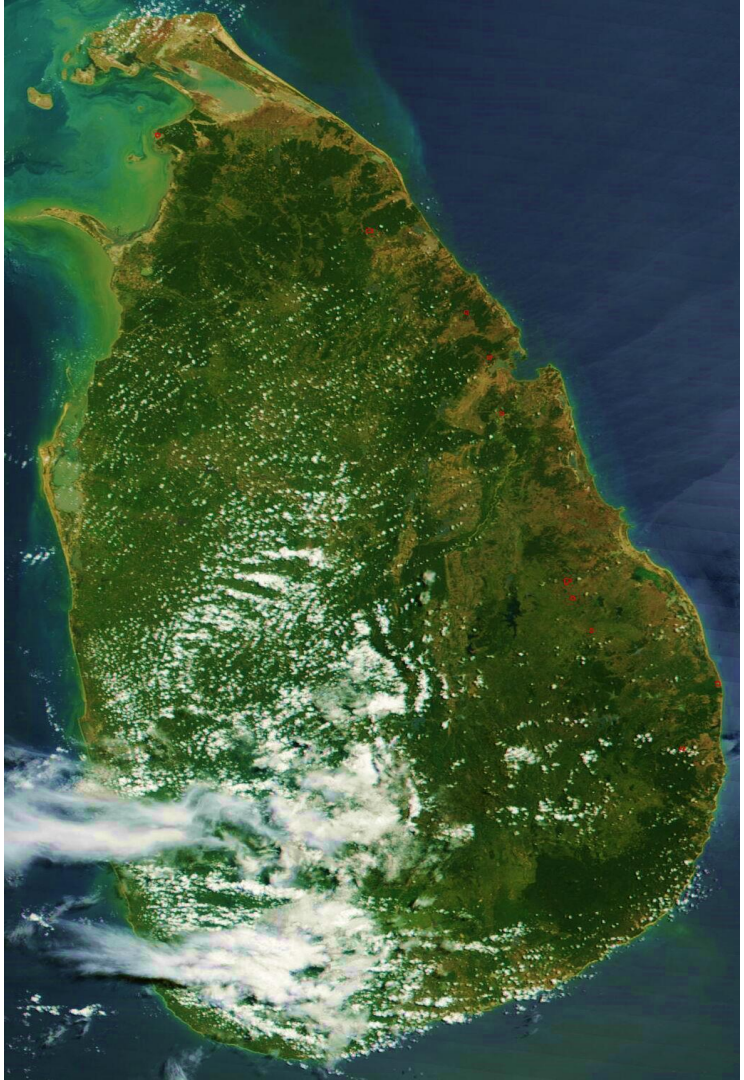

103 colour bands





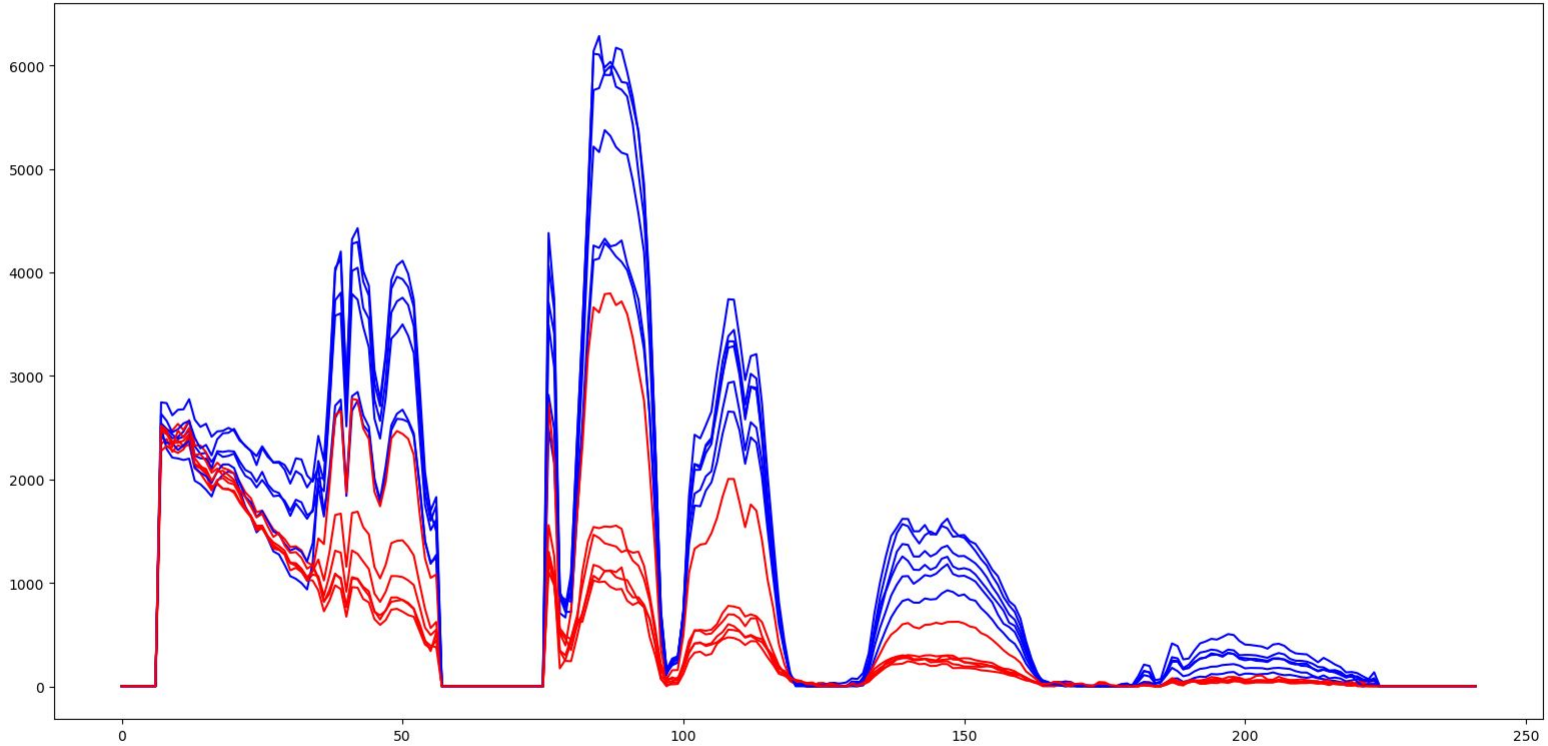






# Why HSI?

- RGB photographs do not show any difference for a land with or without a certain mineral underneath.
- But these minerals tend to reflect/emit the EM waves differently in other bands of the spectrum.


6000
5000
4000
3000
2000
1000
0
0
50
100
150
200
250

| | 2014 |
|---|---|
| Mining & Quarrying | 3.00% |
| Manufacturing | 17.30% |
| Electricity, Gas & Water | 2.40% |
| Construction | 9.70% |

# Impact

- Sri Lanka earns 1.2 Billion USD per annum from mining earth resources.
- But this is less than 2% of the GDP.

- Reliable and cheap prediction WHERE to mine can increase the mining by a several fold.

Thank you!