



# The Provenance of Rays

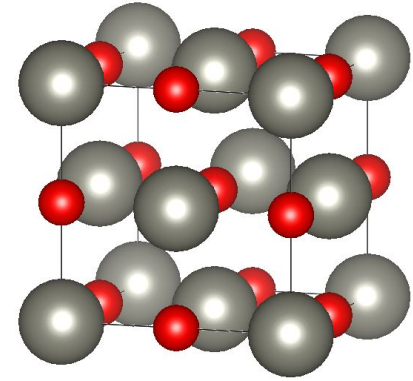
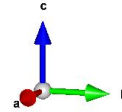
Angel Pintor



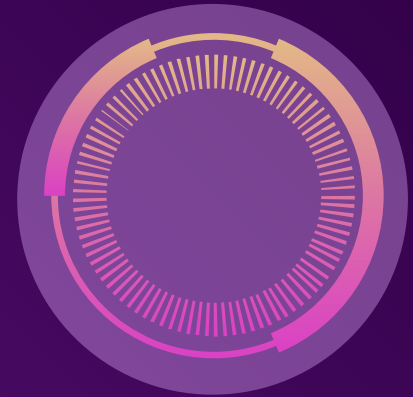
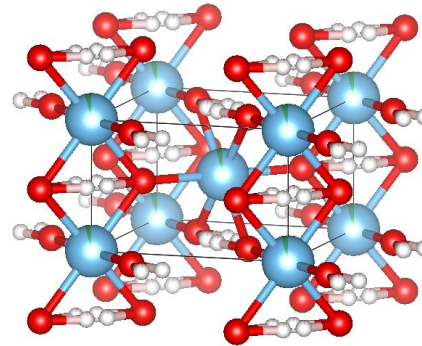
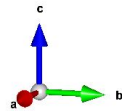
# Mineral Composition

- Naturally occurring
- Inorganic
- Solids
- A definite chemical composition
- An ordered atomic arrangement

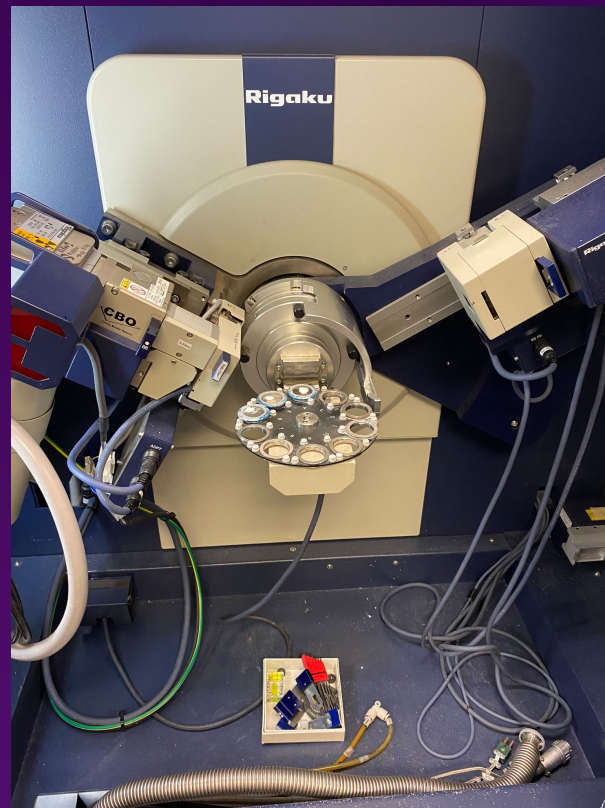
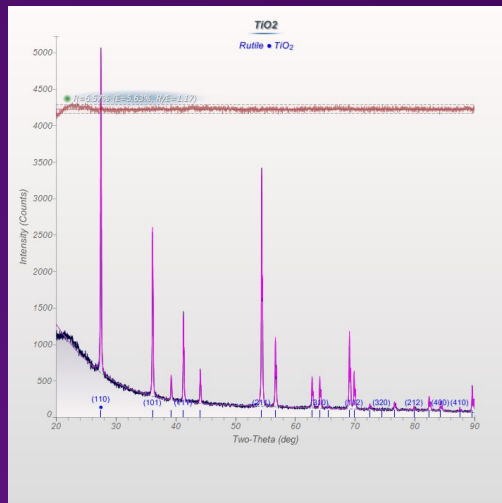
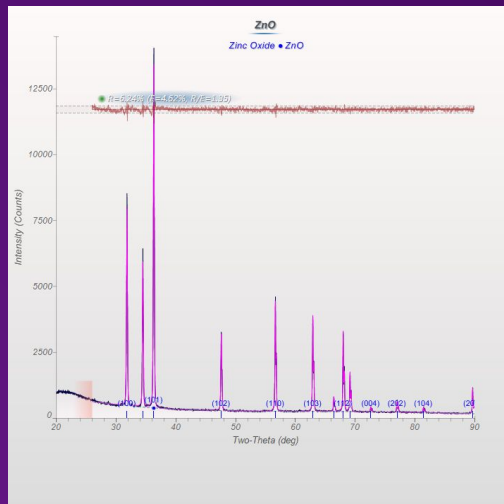
ZnO



TiO<sub>2</sub>

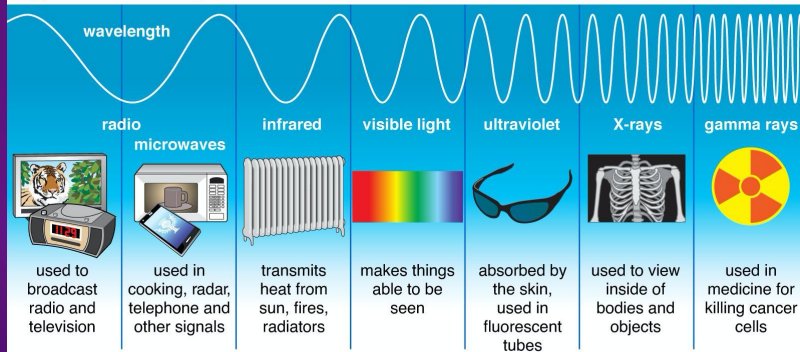


# How Minerals Were Characterized



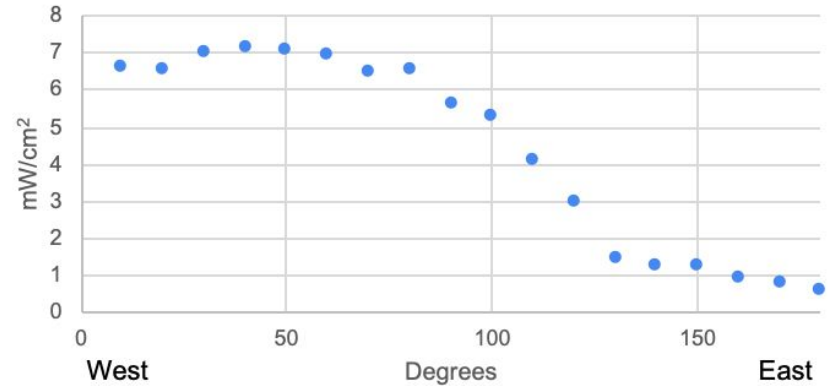
# Foundation for sampling

## Types of Electromagnetic Radiation



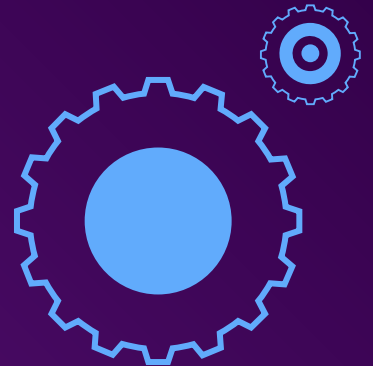
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UVAB power as a function of angle from the Sun at 4pm on June 24th



# Procedure

1. Items to ensure the experiment goes smoothly, a sample of different quantities of titanium dioxide and zinc oxide, spectrometer (UV Meter), plastic wrapping, sheets of paper, spoons and bottled samples.
2. Prepare pieces of sheets of paper with holes of a radius similar to the bottle to ensure a consistent pathway for light to go through
3. Wrap the paper with the plastic wrapping with only 1 side covered
4. Once all steps have been completed. Layer out one of your samplings on the top of the plastic wrapping
5. Then have someone hold the wrapping with the sample directing it to the sun but as a leveled surface
6. Place the spectrometer underneath the sample
7. Record the output that resulted on the spectrometer
8. Repeat steps 6-10
9. Once you've gather the amount of samplings you want. Directly find and understand the differences in each sample of what happened and what was understood



# Comparison to Commercial Samples

Zinc Oxide or Titanium Dioxide



Shea Butter and Coconut Oil



Samples

ZnO 3.5%

ZnO 10.5%

ZnO 17.5%

TiO<sub>2</sub> 3.5%

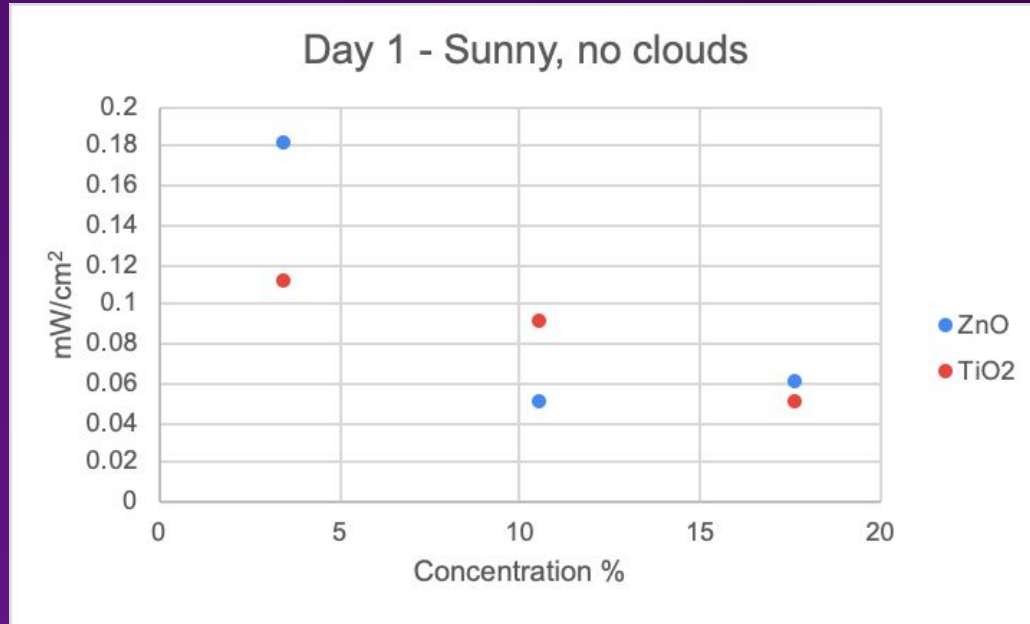
TiO<sub>2</sub> 10.5%

TiO<sub>2</sub> 17.5%





# The Experiments Route



Samples

ZnO 3.5%

ZnO 10.5%

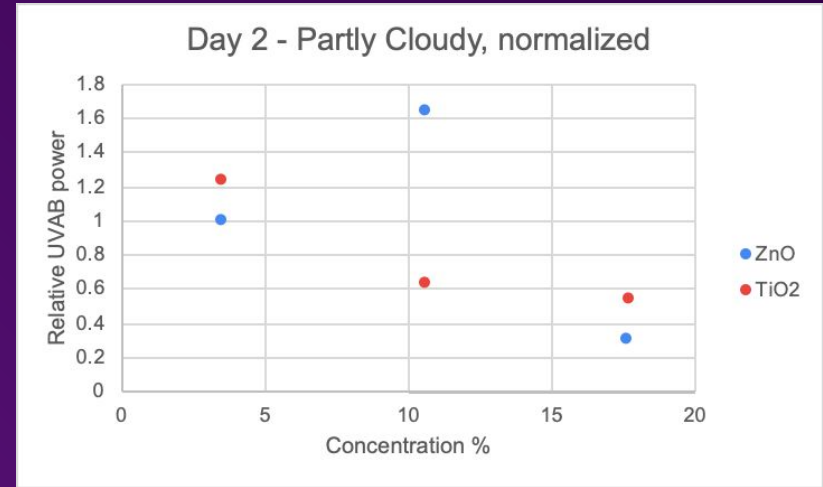
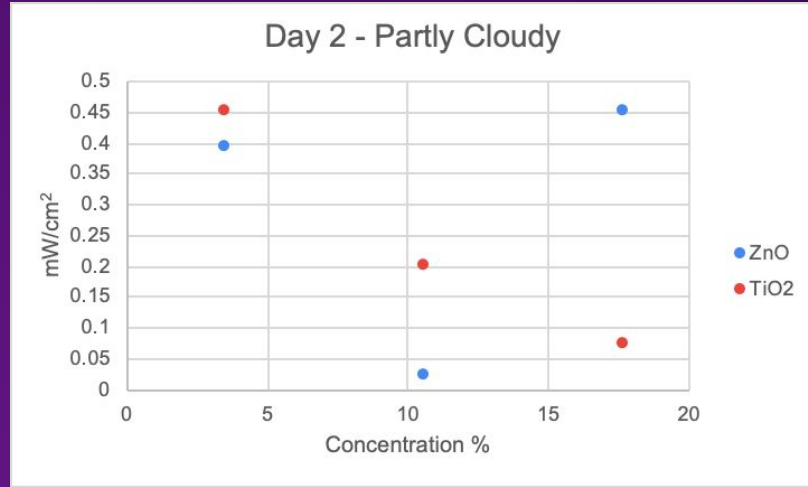
ZnO 17.5%

TiO<sub>2</sub> 3.5%

TiO<sub>2</sub> 10.5%

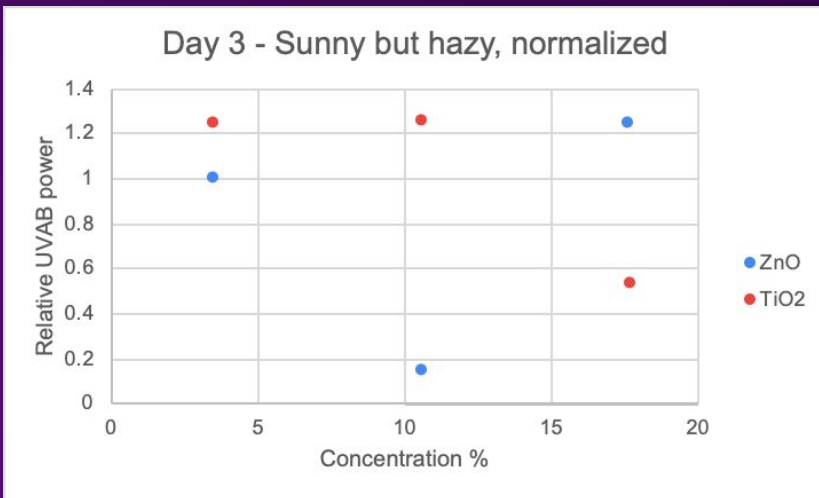
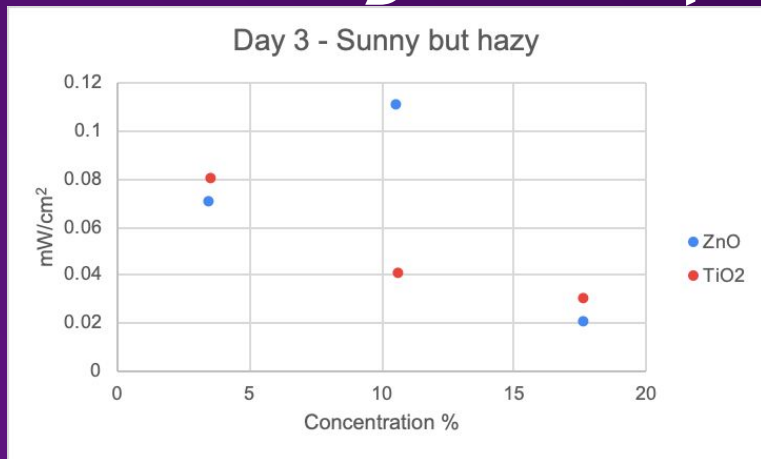
TiO<sub>2</sub> 17.5%

# 2nd Day of Experimentation





# Last Day of Experimentation



# Conclusion

## Why It Matters?

- Skin Cancer
- Coral Reefs
- Greenhouse Effect
- Heat Compaction

