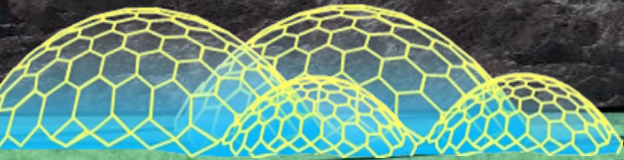


Student Panel: Space Agriculture

ISDC 2023

Bryce L. Meyer



ISDC 2023
International Space
Development Conference
Frisco, TX May 25-28



Space vs. Earth

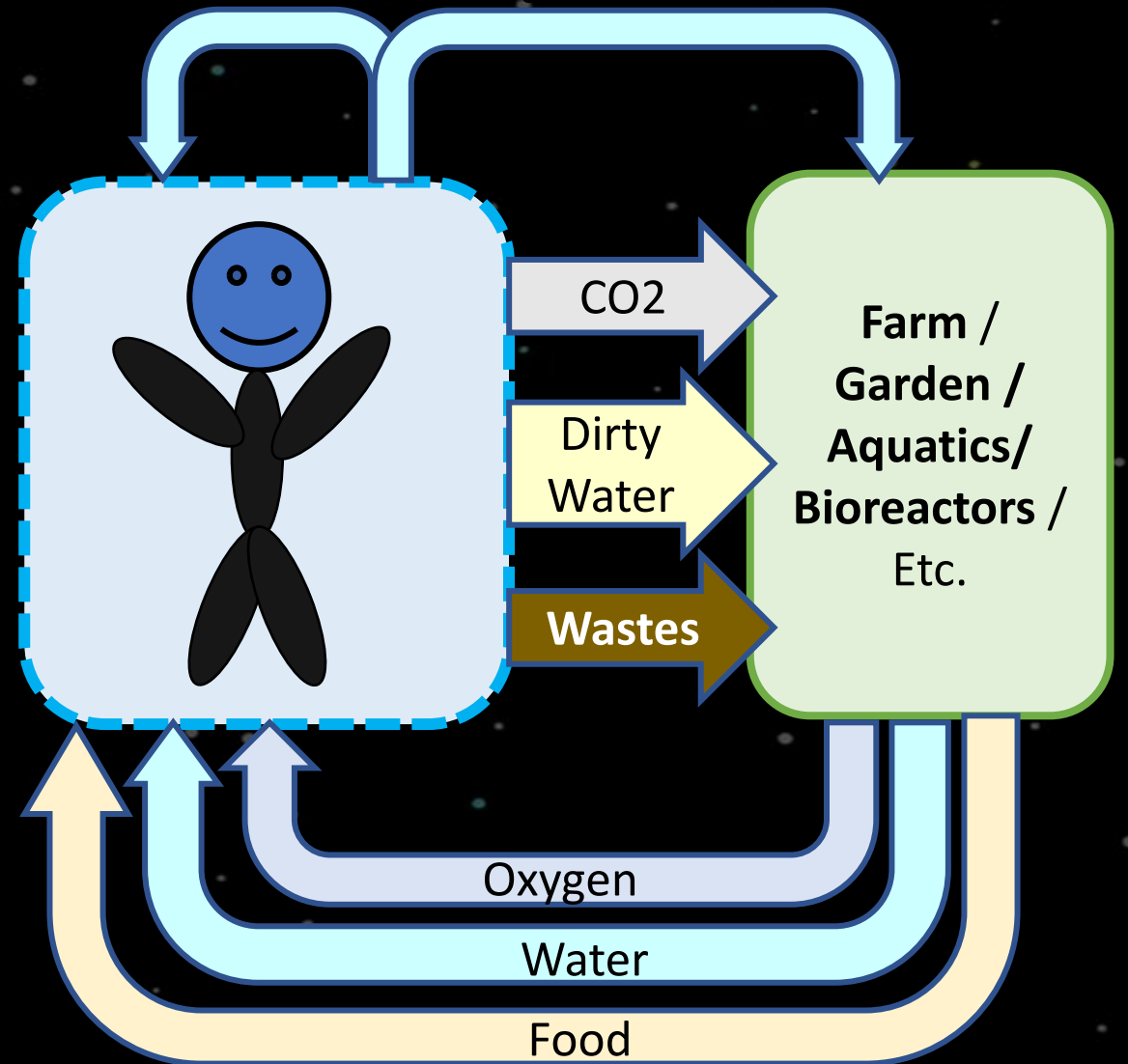
- Space has no air or water
- Space is too hot and too cold
- Space has too much radiation and light
- All living things must be inside spaceships or space stations to stay alive. Space suits are little spaceships
- Everything we eat, drink, breathe has to come with us or be recycled
- We can use plants in a space farm to recycle our 'outs' into our 'ins'

Space Agriculture = Earth Agriculture + Recycling and Life Support

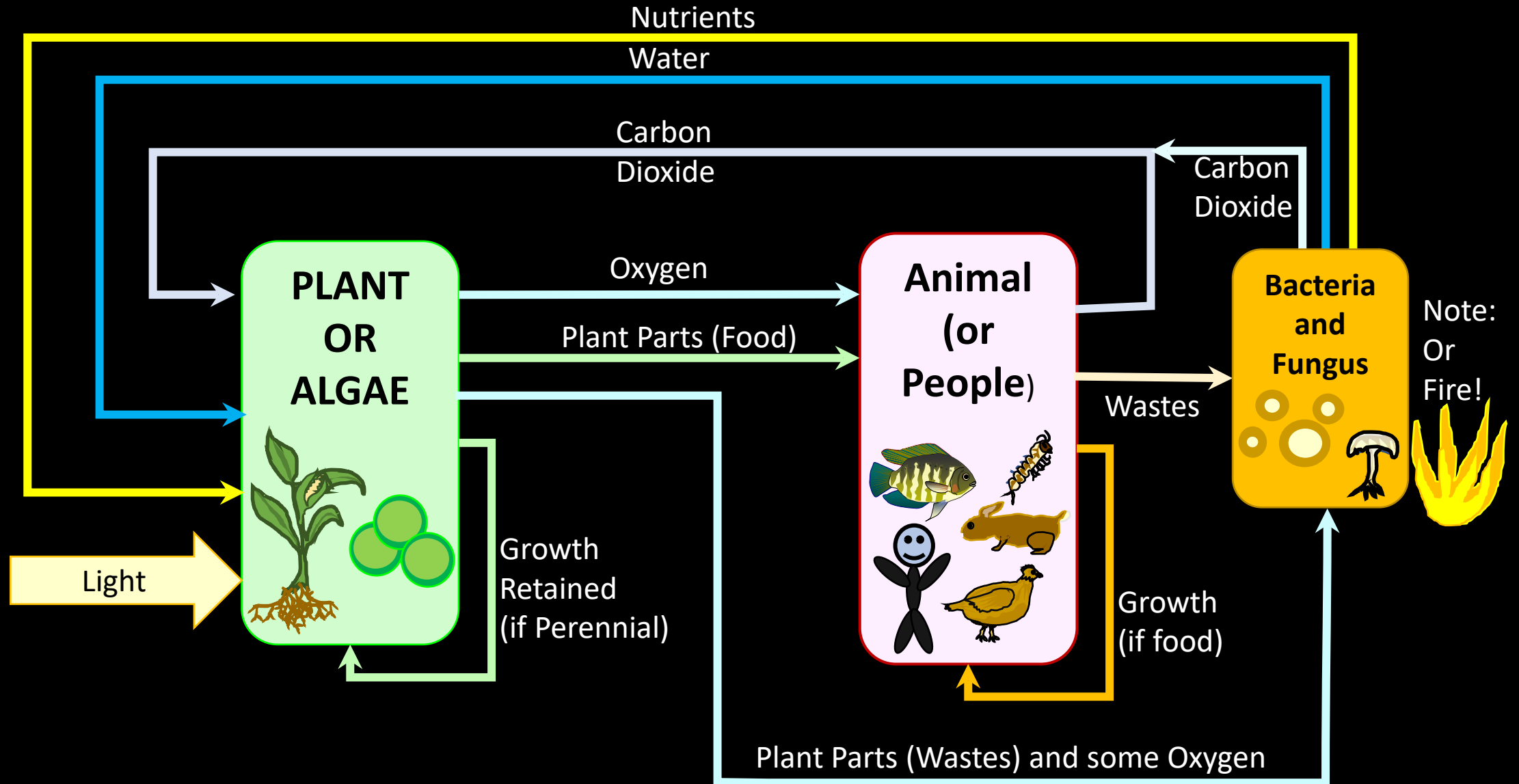
- Indoor farming and technology on Earth can go to space: lighting, air flow, soil or hydroponics, waste treatment, chemical factories
- Every bit of area and volume in a space farm is precious! It must be enclosed, shielded, heated or air conditioned.
- Every bit of mass is precious! Everything that people eat comes from something they released, mostly (Poop to plate...)
- Many machines, computers, and software keep the farm running and everyone breathing!
- The more crops you can grow, the better your meal plate looks!

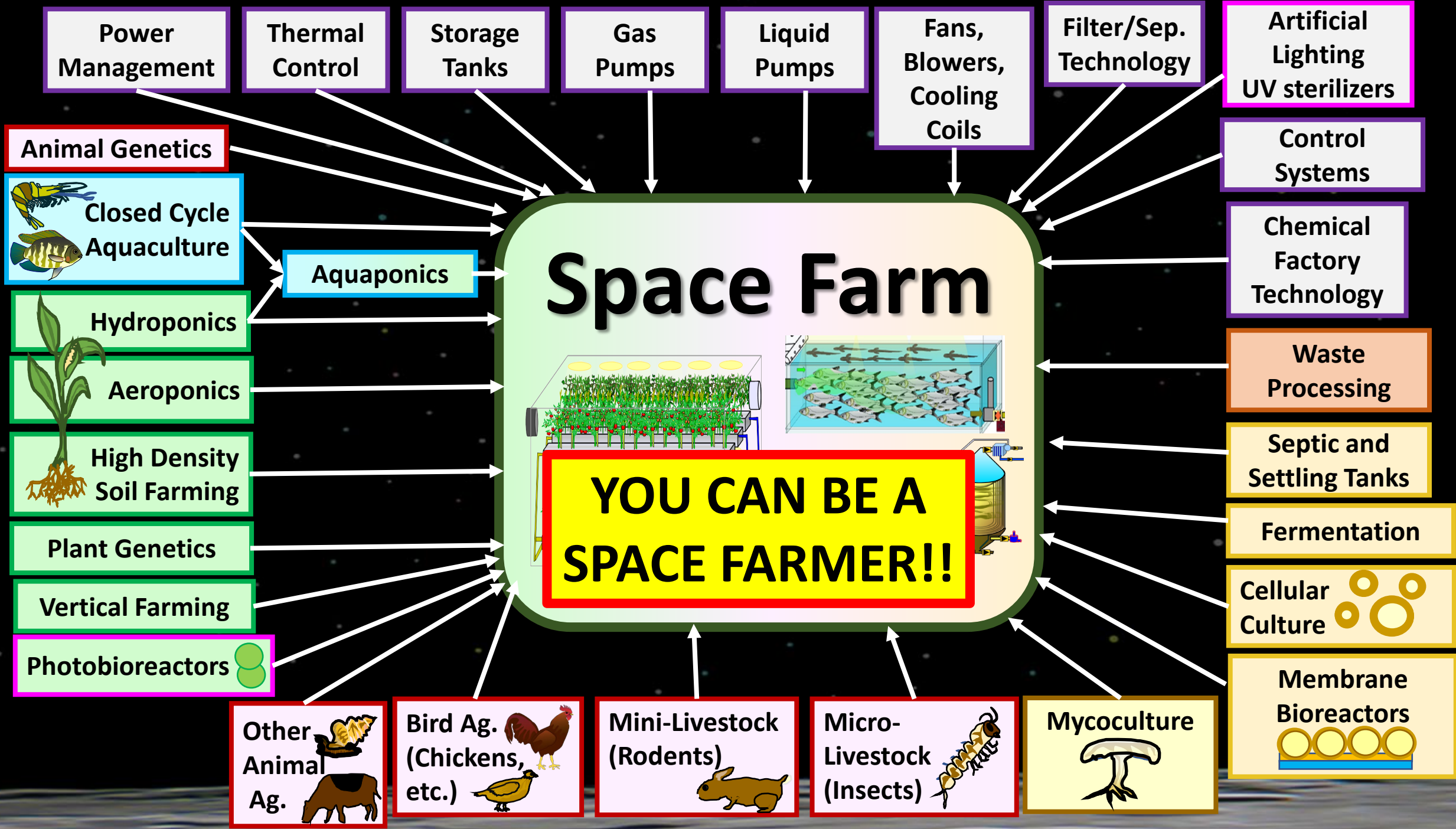
Basic Cycle

- Food and Water has Carbon, Oxygen, Hydrogen, and Nitrogen
- Air we breath has Oxygen
- We breathe out Carbon Dioxide which is carbon and oxygen
- We release water and wastes with hydrogen, oxygen, nitrogen
- Plants and algae use Carbon Dioxide and Water (and some other elements) to make more plants or algae
- Fungi (and Yeast), Fish, Shrimp, etc. take in oxygen and release carbon dioxide, and wastes that include nitrogen



More Complex Cycle

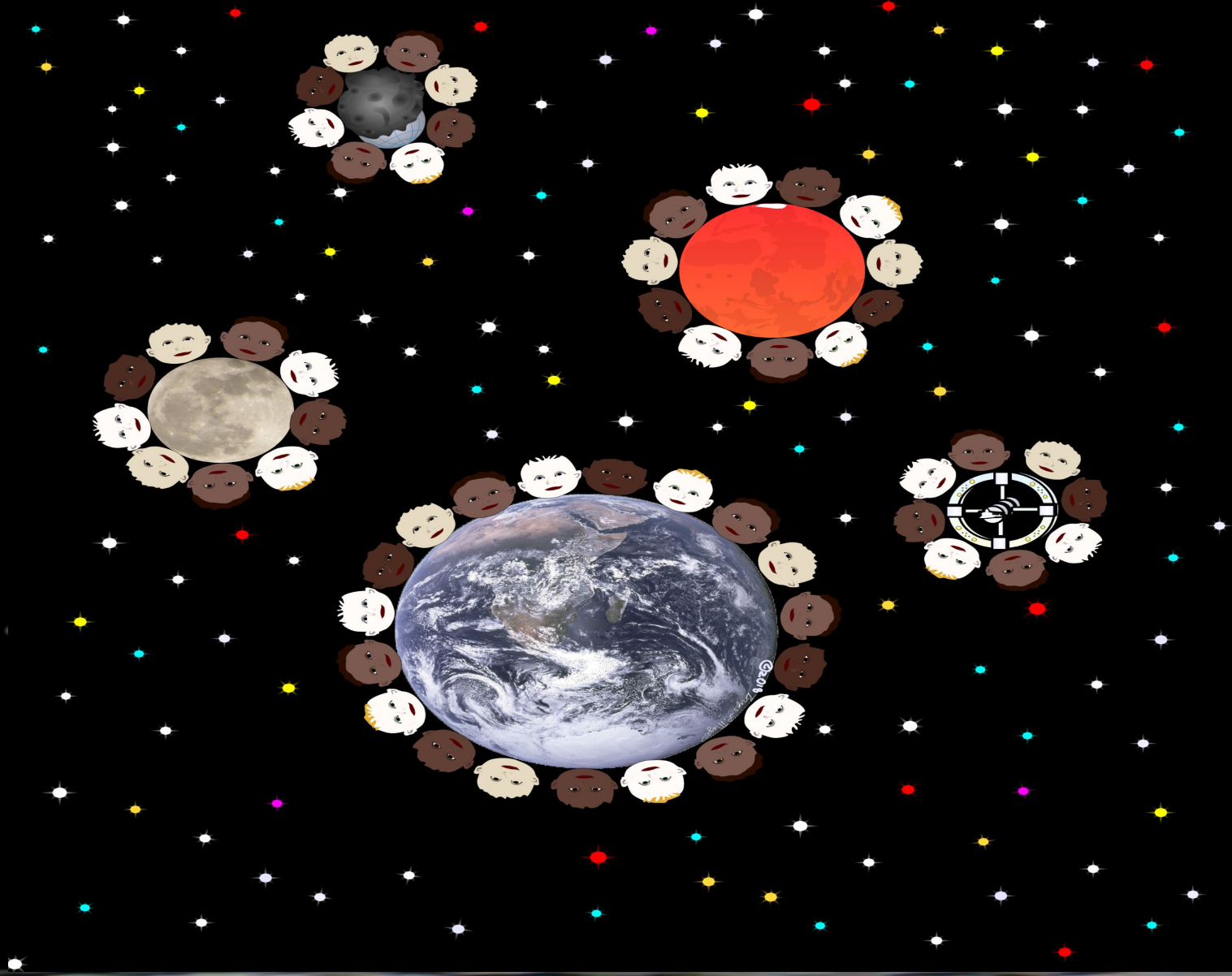




CONCLUSION

- WHY DO I DO SPACE?

***TRILLIONS OF
HAPPY SMILING
BABIES!!!***



BACKUP

- BACKUP

