A.1.4. Interplanetary ‘Bioscience’ mission initiative with CubeSat-Platform Technology

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Opportunities & Questions ??

- CubeSat can provide a ‘Bio-Science’ mission platform for Space Biology !!
  - Demonstrated by 3U-CubeSat Missions (GeneSat, PharmatSat, O/OREOS)
  - Capitalized on Growing ‘Academic’ CubeSat Developments in Korea (cubesat.kari.re.kr)
  - Supported by KRIBB, KRCF & ‘National Space Lab’ Project (NRF of Korea)

- ‘Bio-Science’ Mission Concepts
  - To reverse μG - Protein Crystal Growth missions !
  - To invent ‘Molecular Biology’ version of NOAH !
  - ‘Space Colonization’ (reversing Astrobiology) ??

The 1st Environmentalist
KRIBB, KAERI, KARI @ Korea

Bioscience & Biotechnology  Atomic Energy  Aerospace

Daejeon ‘Science Town’ KRIBB @ Daejeon
KRIIBB Space-Bio Research Initiative

- Biology with μG simulation devices
- μG – Protein Crystal Growth (PCG)
- International Collaboration Using ISS
- CubeSat-Platform ‘Space-Bio’ Modules
- Space-Biotechnology for Space Colonization

Timeline:
- 2012
- 2013
- 2014
- 2015-2020
- 2020-Future
‘Outsourcing’ Bus + KRBIBB Payloads

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https://cubesat.kari.re.kr/

1U-Bus + BioXTAL(1U) + BioDOME(1U)


Monitoring
Space Radiation with Bio-Crystal (Bio-XTAL)

Monitoring
Biodiversity in Organic Matter Environment

A-1-1 A snapshot on CubeSat related activities in Europe for astrobiology ...
A-2-2 OREOcube: Organics Exposure In Orbit