Materials List – Ground Based

**GROUND BASED:**

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| **SENSOR** | **QUANTITY** | **COST** | **FUNCTION:** |
|  |  |  |  |
| **CAMERA:**  CMOS Camera - 640x480 SEN-08667  SparkFun | 3 | $9.95/29.85 | To be placed above each petri and capture growth of the petri directly across from the camera. C code examples found online |
| **TEMP/HUMIDITY:**  Humidity and Temperature Sensor - HIH6130 Breakout  SparkFun | 1 | $29.95 | This will record the data to a single output of our temperature and humidity as these conditions greatly affect growth rate of yeast. Arduino code found online |
| **CARBON DIOXIDE SENSOR:**  To be obtained through Alli | 1 | TBD | All living cells perform cellular respiration. In order to ensure our yeast is growing, we can regularly monitor levels of CO2. Nee to obtain help with code. |
| **LED LIGHTING:**  Super Bright LED - White 10mm  SparkFun | 6 | $1.50 | LED lights will provide necessary light to capture the image of growth in each petri. There is no light source on the ISS for the ardulab, therefore, we need to provide light so the camera can capture the image. We will place the ardulab in a dark space to help keep conditions as close as possible to the ardulab on the ISS. We ordered six so we can ground test to see the actual number we need to capture a clear picture. |
| **GROWTH MEDIUM/AGAR:** | TBD | TBD | Dr. Stephens, from The University of Houston Clear Lake, will be providing us with a complex carbohydrate growth media to assist in slow growth of the yeast for the 30 day mission. |
| **GROWTH MEDIUM/AGAR:**  In contrast to the growth medium provided, we plan to test carbohydrate vs complex carbohydrate – NUTRIENT AGAR PREPARED PLATES CAROLINA SUPPLY (p83) RE-821862 | Pack of 10 | $20.50 | This comparison is to test if any yeast grow more slowly and to compare carbohydrate vs. complex carbohydrate. |
| **PETRI PLATES:**  Polystyrene Petri Plates (60 x 15 mm)  RE-741246 CAROLINA SUPPLY (p85) | Pack of 20 | $0 shared cost with flight order |  |
| **YEAST:**  CAROLINA SUPPLY (p77)  Saccaromyces cerevisiae (RE156250)  Saccharomyces cerevisiae var. ellipsoideus (RE156250)  Currently looking to find another strain of yeast easily attainable | 3  3 | $10.25/30.75  $10.25/30.75 | * Baker’s yeast * Wine yeast |