One of the many goals of the International Dark Sky Association and the Forestry department is to monitor light pollution and measure the effects of efforts to lower light pollution in rural areas or forest areas. The current solution does not allow for the data to be collected over long periods of time or time stamp the data it has collected. This makes it difficult to monitor the light in the sky over the entirety of the night, as the amount of light changes over the course of the night. It is also difficult to monitor the exact effects of certain lights, like lights during sporting events, lights during holiday seasons, or the effect of lights when only the routine street lights are on. Being able to monitor the light pollution over long periods of time would help to give a baseline of current pollution so that the forestry department can see whether pollution is improving or getting worse, especially with their efforts to mitigate pollution with solutions like focusing light direction or using light covers.

The main objectives of the system are to be able to measure light frequently, to be able to function for long periods of time without upkeep, to use low power, to not be disruptive to the natural environment, to collect and store some volume of data, and to be easy to use and interact with. The system, in order to be useful, must be weather resistant, have an accuracy of +/- .01 of the light unit of measurement, have a battery life of at least one week (but hopefully several months), not penetrate the ground in it's deployment, and be able to withstand temperatures of -40 to 105℃.

- What are the objectives of the system ?
    - Measure Light frequently
    - Function for long periods without upkeep
    - Low power
    - Not disruptive to hikers and animals
    - Needs to collect and store some volume of data
    - Easy to use and interact with
- What are the constraints of the system ?
    - Weather resistant
    - Accuracy at least 0.01
    - Battery life of at least 1 week
    - Deployment cannot penetrate ground
    - Temperature -40 to 105 C
- Investigate available systems that might be used in lieu of designing a system. Describe the pros and cons of each system relative to the problem statement.
    - http://unihedron.com/projects/darksky/
    - The unihedron Sky Quality Meter
    - The alternative is more expensive and needs human assistance to gather data.
    - Our system is able to gather and store data over long periods, and ideally, it would be easy for people to collect data from the device in the field.
    - The alternative is already trusted by the IDA.
- What challenges and opportunities would be present in designing a system for this application.

- The main challenges would be making sure that the clock for the system is correct and accurate so that the data is timestamped correctly and making sure that the battery is durable and will last for several months.