

# Instrument Validation

Project PLAGA

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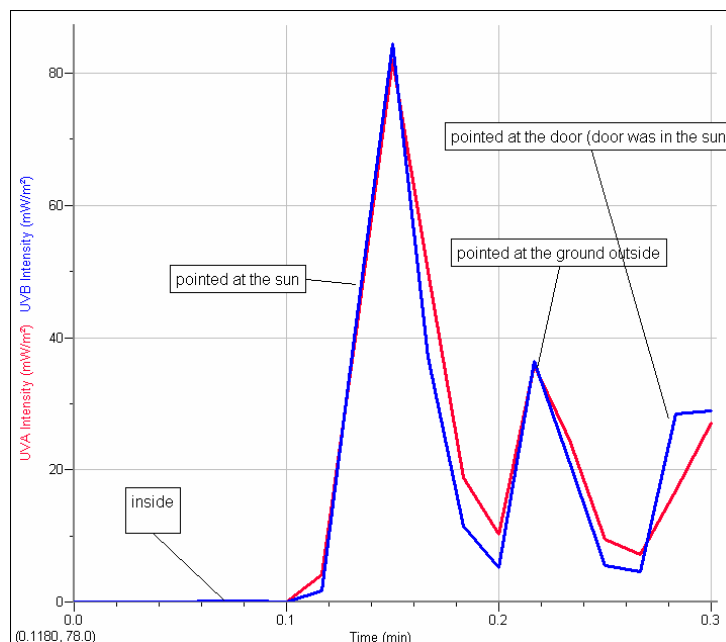
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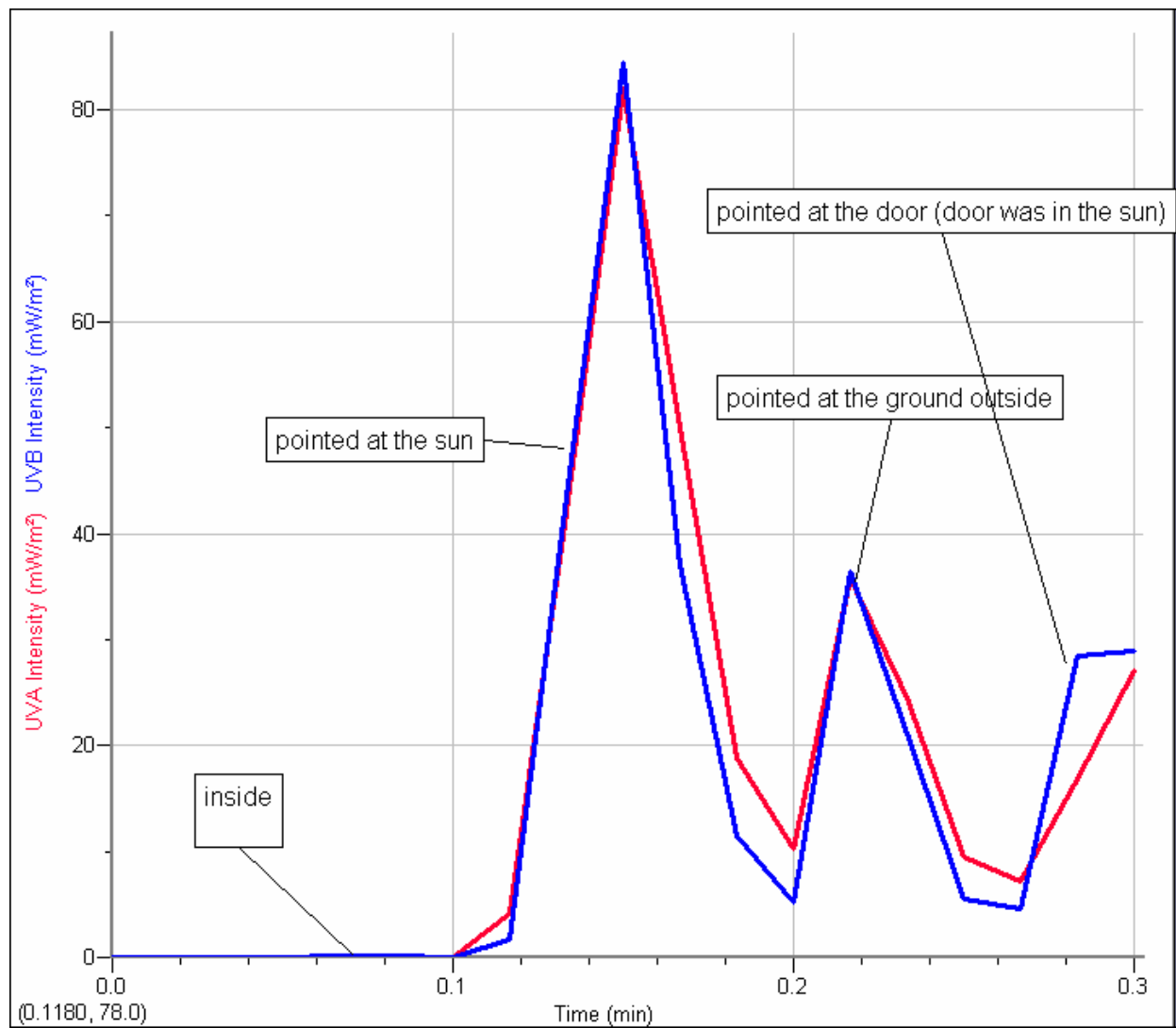
The purpose of this experiment is to measure the content of UVA and UVB rays in a certain amount of space. To do this we will use UVA and UVB sensors to measure the amount in the Ultraviolet rays in the air with the sensors pointing to the ground. Using lab pro, a sophisticated piece of equipment that feeds us numbers we hope to discover which ray is more present then the other in a given air space. Our hypothesis is that there will be more UVA present the UVB in the flight test. After finishing, we will have to see the results, and we are hoping for a straight up correct or incorrect answer, acknowledging the experiment was at least successful in testing our hypothesis. However, only time will tell.

**Purpose:** The purpose of this experiment is to measure the amount of UVA and UVB radiation that is being reflected off of the surface of the Earth. We are conducting this experiment because it has seldom been preformed before, and we feel that it is of invaluable importance to the people living on Earth because the measure of UVA and UVB radiation reflecting off of the Earth is directly proportional to the amount of ozone (or O<sub>3</sub>) that is currently in the atmosphere. Few people are aware that there are plants that need just the right amount of radiation, and without knowing the amount of radiation coming into the atmosphere, farmers and crop growers will find it difficult to know just what kind of crops to plant.

**Method:** In order to perform these tests, we will be sending a gondola containing a Labpro, a UVA sensor, and a UVB sensor to a maximum altitude of 1,000 ft at Tobin James Wine Cellars on May 31, 2008. We will then use the "Remote Data Retrieval" setting to recover the data and transfer it onto the graph, such as the one below.



## Data:



**Analysis:** According to this graph, the highest amount of both UVA and UVB radiation is coming from the sun. The second highest peak was when the sensors were pointed at the sunny ground. The second lowest reading came from the sunny door, and the lowest was inside.

**Conclusion:** Based on these results, UV radiation is most likely absorbed by the earth, walls, or doors. Any structure insulation absorbs the radiation as well. Therefore, during the flights, we can probably expect low readings as the balloon will be mostly above dirt and vines.