**Science Questions**

One of the important parts of the CASCADES rocket is that it has five payloads. The payloads are the pieces that leave the rocket and take measurements.

One of the main reasons to use 5 payloads is so that the researchers can accurately distinguish what is happening in space and what is happening at time. To understand this we can think of a reporter covering a story about a hurricane.

A picture containing text, athletic game, sport

Description automatically generatedThe reporter starts out in Southern Florida and sees that whole towns have been devasted. To continue covering the story the reporter moves North through Florida and two weeks later is much farther North and sees a completely different scene. The reporter sees that the conditions in the North are far better. But, is this because in the two weeks that it took him to get there the conditions got better, or is it because the hurricane just did not hit as hard in this place? When studying the aurora we must ask questions along these same lines. Aurora move in both space and time, so having multiple payloads helps to make the distinctions between both. When the multiple payloads take measurements at the same time it is as if we have a reporter in Southern Florida as well as one in Northern Florida at the same time.