

## The Explorers Museum Pennant Report-Pennant Number 1

Inaugural expedition: First Drone Filming of Solar Eclipse

Date: March 2015

Location: Faroe Islands

Team: Matt Harris, TEM director, Alistair Gillian, drone pilot

Purpose: To attempt to film the solar eclipse taking place on March 20<sup>th</sup>, 2015 by drone, this expedition team represents the first known team to attempt to film an eclipse via drone.

The expedition also represents the inaugural launch of The Explorers Museum pennant series.

The team was using a ship, part of the Maritime Voyages Line, as the base for set up and launch of the drone and filming equipment. The ship "Magellan" on her maiden voyage was positioned for the eclipse within the Faroe Islands a self-governing archipelago, part of the Kingdom of Denmark, comprised of 18 rocky, volcanic islands between Iceland and Norway in the North Atlantic Ocean. These islands' offer a unique topography of mountains, valleys and grassy heathland, and steep coastal cliffs harboring thousands of seabirds.

The Faroe Islands was chosen as the best location to view the solar eclipse, which would be the last solar eclipse in Europe until 2016. The mission to film the eclipse represented the first known attempt to film a solar eclipse via drone. The expedition also served as a means to highlight this important cutting edge, technological tool in an explorer's gear kit, highlighting a new era in expedition technology. The last solar eclipse took place in Russia at a time when drone technology was not yet available.

The special considerations required for filming a natural phenomenon as an eclipse in such a northern location were unknown prior to this undertaking. An earlier partial solar eclipse, which took place on October 14, 2014, engendered an enormous solar flare on the surface of the sun. Such an occurrence could impact a number of measurement and other factors including the compass, GPS and other onboard electronics.

The logistics of the project involved transportation of a massive amount of equipment. However Maritime Voyages, operating out of Tilbury is in close proximity to where the equipment was housed, allowing that the gear for the expedition could be driven and boarded onto the ship and transported in this manner to the eclipse location. Although preparations for the expedition required significant planning, the opportunity to realize the filming of the eclipse was slated to last only 2 minutes and 47 seconds not allowing any chance for second takes. It also required clear skies.

Unfortunately the weather during the eclipse period was especially uncooperative. Significant storms served to destabilize the equipment base. Although the actual

shot of the eclipse was not realized due to this, much was learned about drone technology and requirements in the Faroe Island region that are of significant scientific interest. Adjustments had to be made due to the closer proximity to the Magnetic pole, affecting a number of readings including the KP index and GPS systems.

Pennant Returned-March , 2015 to TEM Global Expedition Base, Charleville Castle

