

AQRP Monthly Technical Report

PROJECT TITLE	Galveston Offshore Ozone Observations (GO3)	PROJECT #	20-004
PROJECT PARTICIPANTS	James Flynn (UH) Yuxuan Wang (UH) Paul Walter (St. Edward's University) Gary Morris (St. Edward's University)	DATE SUBMITTED	12/9/2020
REPORTING PERIOD	From: November 1, 2020 To: November 30, 2020	REPORT #	5

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 14th of the month following the reporting period shown above.

Detailed Accomplishments by Task for reporting period

- Worked with AQRP, TCEQ and project team to discuss implications of adding a NO₂ photocell to the sampling packages.
- Performed test launch of a 600g balloon and dummy O₃ sonde payload from the pontoon boat on a local lake on November 1, 2020.
- Modified pontoon trailer for easier loading of the boat to streamline the process at boat ramps.
- Ordered omnidirectional antenna in hopes that we will be able to simplify balloon tracking while continuing to traverse Galveston Bay after a balloon launch (all prior launches use directional antennas that must be pointed at the balloon)
- Tested the boat loading system, boat handling and performance under full load, navigational equipment, O₃/O_x mounting and cooling system.
- Explored potential overnight docking locations which could be used during consecutive sampling days, and took an exploratory look at the process to get the pontoon from Clear Lake out to Galveston Bay.
- UH team continued taking online boater safety courses.
- Received fully executed liability waiver from Larry Willis for installing research equipment on his shrimp boat for Galveston Bay measurements
- Added exhaust line and fitting from the 2B O₃ instrument and sampling case to allow humid air to be exhausted outside and aid in maintaining low internal RH.



Figure 1: A balloon with our standard payload



Figure 2: Clear Lake to Galveston Bay



Figure 3: Pontoon



Figure 4



Figure 5

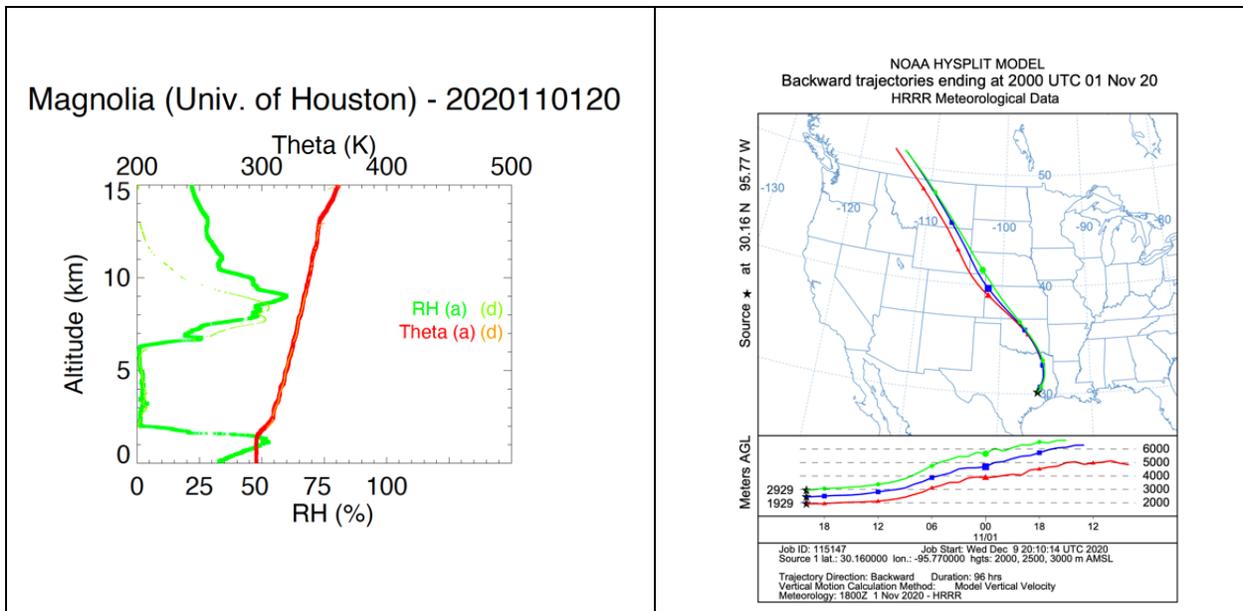


Figure 6: Left: The profile of test launch from Lake Magnolia, TX, on the afternoon of November 1 shows a deep dry layer just above the boundary layer. Right: The HYSPLIT back trajectories show that there was descent of the air masses that influenced the lower free troposphere

Data Collected

No additional sampling data was collected during this period, however several performance tests were conducted as mentioned above.

Preliminary Analysis

No additional analysis was performed

Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

No major problems were encountered during this period

Goals and Anticipated Issues for the Succeeding Reporting Period

- Finalize change in scope of work with AQRP and TCEQ
- Begin building second small sampling system
- Continue testing CL-51 ceilometer at the UH Launch Trailer
- Prepare Pontoon boat for storage over the winter

Detailed Analysis of the Progress of the Task Order to Date

The project is moving forward quite well with respect to the Task Order issue date. With the request from AQRP and TCEQ to delay deployment into the 2021 O₃ season the timeline has shifted which will allow more time for preparation and coordination.

Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.

Yes No

Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?

Yes No

Do you have any bibliographic publications (ie: publications that cite the project) related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.

Yes No

Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).

Yes No

Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.

Yes No

Have any personnel changes occurred that were not listed in the original proposal? If so, please include a detailed description of the personnel change(s) below.

Yes No

Are any delays expected in the progress of the research? If so, please include a detailed description of the potential delay below.

Yes **No**

The AQRP and TCEQ have requested the deployment to be delayed into CY2021.

Describe any possible concerns/issues (technical or non-technical) that AQRP should be made aware of.

Yes **No**

Are you anticipating using all the available funds allocated to this project by the end date? If not, why and approximately what is the amount to be returned?

Yes **No**

Submitted to AQRP by

James Flynn