Monthly Technical Report

(Due to AQRP Project Manager on the 8th day of the month following the last day of the reporting period.)

PROJECT TITLE	Analysis of VOC, NO2, SO2 and HCHO data from SOF, mobile DOAS and MW-DOAS during DISCOVER-AQ,	PROJECT #	14-007
PROJECT PARTICIPANTS (Enter all institutions with Task Orders for this Project)	Chalmers University of Technology University of Houston	DATE SUBMITTED	2/16/15
REPORTING PERIOD	**From:** January 1, 2015 **To:** January 31, 2015	REPORT #	6

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 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task *(Include all Task actions conducted during the reporting month.)*

Task 1a) The Discover-AQ team has compiled vertical concentration profiles and corresponding vertical columns based on spiral flights by the P-3B aircraft for a number of species. Columns of NO_2 and HCHO derived from spirals close to our driving route on September 25 and 26 have been collected and qualitatively compared to the Mobile DOAS results from Task 1b.

Task 1b) A new scheme for evaluating the slant spectra, involving averaging subsequent spectra in a running-mean fashion, has been applied. The purpose of this is to decrease the noise in the evaluated columns. This combined with filtering out measurements in a direction too close to the sun, which seem to behave more unpredictably, has significantly improved the quality of the results. The radiative transfer corrected slant columns have been compared to the ones from the zenth-sky evaluations and different ways of combining the two results in to one product has been examined. Variations of the spectral retrieval used have been tested, but they have not been determined to produce significantly different results.

Task 1c) A few variants of the original radiative transfer simulation has been produced. The results indicated that the results were not very sensitive to changes in aerosol loadings, but somewhat sensitive to changes in surface albedo. Whether significant deviations from the surface albedo used could be realistic will be examined further on.

Preliminary Analysis (*Include graphs and tables as necessary.*)

NA

Data Collected *(Include raw and refine data.)*

NA

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

None

Goals and Anticipated Issues for the Succeeding Reporting Period

We will continue with task 1 a, 1 b and 1 c. The data will be finalized and we will continue the comparisons to the Discover data.

Detailed Analysis of the Progress of the Task Order to Date *(Discuss the Task Order schedule, progress being made toward goals of the Work Plan, explanation for any delays in completing tasks and/or project goals. Provide justification for any milestones completed more than one (1) month later than projected.)*

Submitted to AQRP by: _____

Principal Investigator: _Johan Mellqvist_____

(Printed or Typed)