HS Parallax Mitigation Experiment Descriptions

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Support Crew: TBD

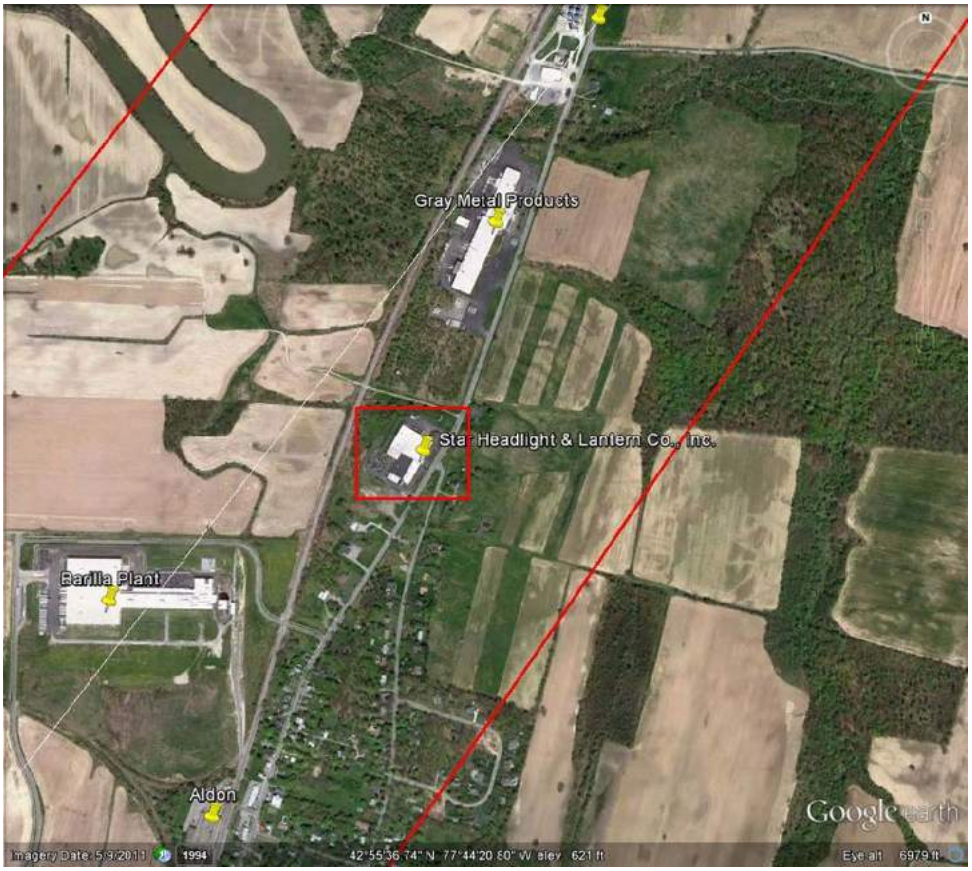
Short Title: HS Parallax Mitigation

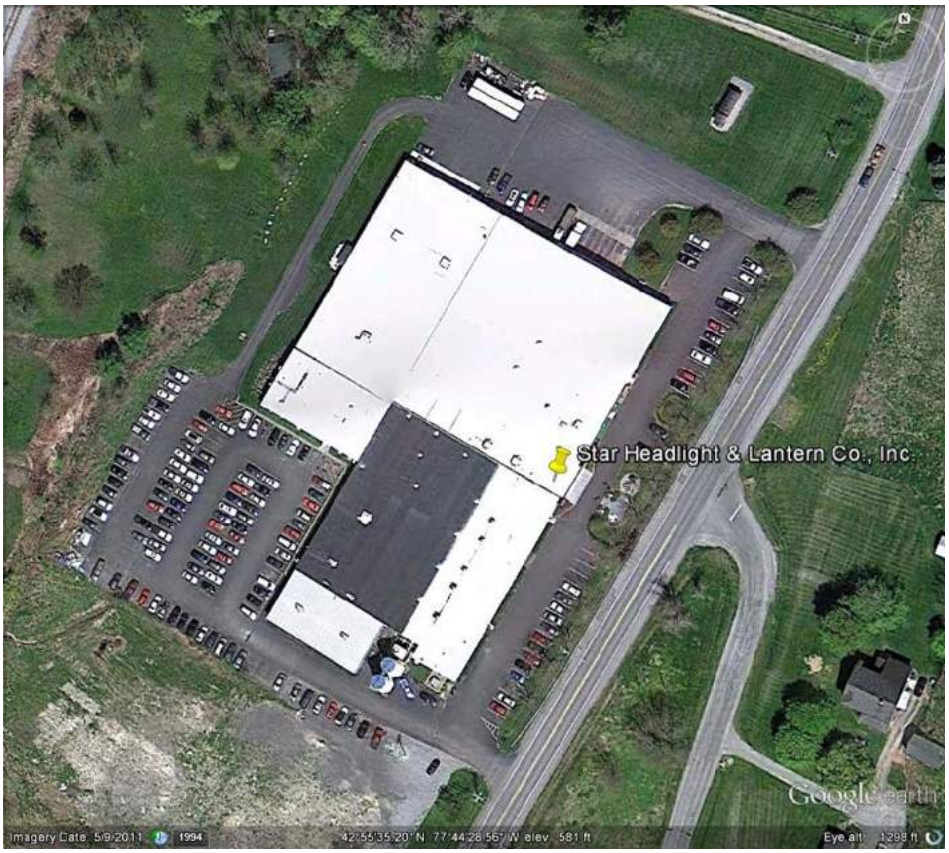
Objectives: The purpose of this experiment is to collect hyperspectral (HS) [and high res imagery] to investigate the geometric elements associated with parallax error in order to achieve improved performance in HS change detection (CD) systems. Additional modalities and flight altitudes would provide additional test scenarios including multi-modal and altitude change analysis.

Deployments: Obtaining a significant corpus of document ground images and symbolic ground truth of spatial representation is important for experiment and performance accuracy. Vehicle targets surrounding buildings should be documented as sensor is collecting overhead to provide truth for first pass followed by more documentation of the vehicles alternate positions for the second pass. This would allow for the examination of arrivals and departures, as well as new targets replacing old targets from one pass to the next.

Main Experiment Site Scenario – Barilla Plant

Main Experiment Site Scenario – Star Headlight & Lantern Col, Inc.





Main Experiment Site Scenario – Gray Metal Products


Gray Metal Products
Star Headlight & Lantern Co., Inc.
Barilla Plant
Aldon
Google earth
Imagery Date: 5/9/2011
1994
42°55'36.74" N 77°44'20.80" W elev 621 ft
Eye alt 6979 ft

Flight Lines: A semi-urban environment with height structures would be appropriate. Minimum required change pair needs to be collected at approximately same altitude between passes. **Thereby two passes over facility with noted truth documented change is required for this experiment.**

Flight Constraints:

Cloud-free conditions are desired with sun high. Higher spatial resolution (0.5m or better) is desired. Required min is 1m.

Ground Truth Required:

Photos of targets, deployment configuration and nearby environment. Approximate height of structures. Time-of-day and sensor altitude information should be collected or recorded. Flight notes including cloud conditions should be documented at the time of data collection. Along with the detailed blueprint of surroundings of structure, HRI data would allow for visual inspection of the HSI spatial footprint.

Equipment: ASD (not required), Range Finder (capability to measure structure heights), Camera and GPS.

Appendix: Example truth blueprint documents. Additional notes can be captured through annotations on to spatial image.

Ref#	Description
A1	
A2	
A3	
A4	
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A31	