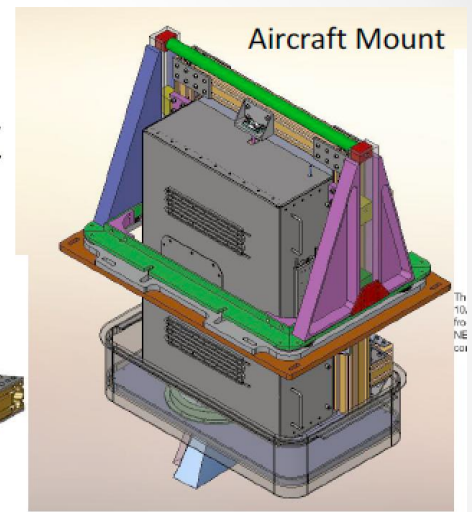
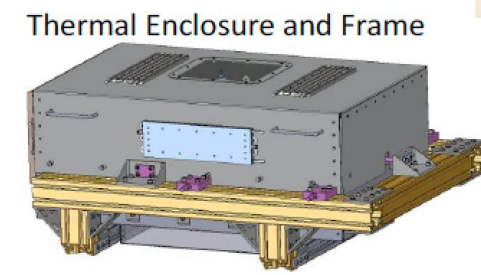
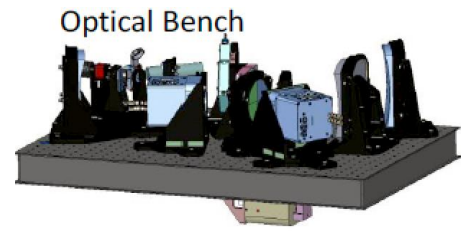


GeoTASO Measurements of Aerosols and Tropospheric NO₂, O₃, CH₂O, and SO₂ Vertical Column Density (VCD) in support of KORUS-AQ

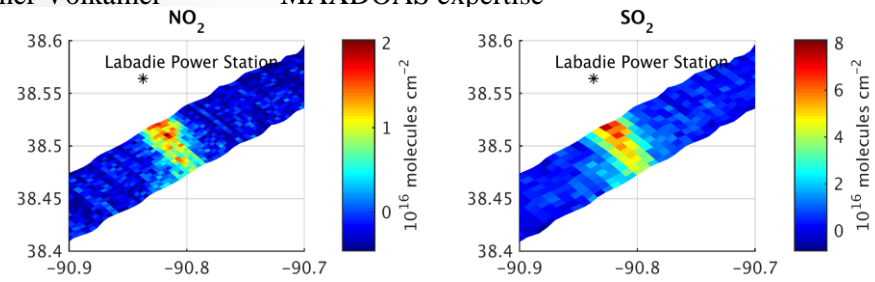
PI and Co-Is	Investigative Role
Scott Janz	Principal Investigator
Xiong Liu	O ₃ , CH ₂ O, SO ₂
Caroline Nowlan	O ₃ , CH ₂ O, SO ₂
Lok Lamsal	NO ₂
Jun Wang	Aerosols
Matt Kowalewski	Calibration and level 0->1b production
Melanie Follette-Cook	Trace gas spatial variability analysis

Collaborators	
Nikolay Krotkov	NO ₂ , SO ₂ retrieval expertise
Ken Pickering	Chemical modeling expertise
Dave Flittner	TEMPO instrument expertise
Jim Leitch	GeoTASO instrument expertise
Kelly Chance	TEMPO PI
Jhoon Kim	GEMS PI
Jae Kim	GEMS O ₃ Liaison
Hanlim Lee	GEMS NO ₂ Liaison
Rainer Volkamer	MAXDOAS expertise



Band 1	280-410 nm, 0.42 nm resolution
Band 2	416-690 nm, 0.84 nm resolution
Swath FOV	45 deg. [7 km @28kft]
GSD	23 m – 47 m
Product resolution	~500x500 m ² (NO ₂ , CH ₂ O, O ₃) ~1x1 km ² (SO ₂)
Integration time	240 <u>ms</u>

Species	Typical	Precision
O ₃ 0-2km	3 x 10 ¹⁷	10 <u>ppbv</u>
O ₃ 2km-Troposphere	8 x 10 ¹⁷	15 <u>ppbv</u>
NO ₂	6 x 10 ¹⁵	1 x 10 ¹⁵
CH ₂ O	1 x 10 ¹⁶	1 x 10 ¹⁶
SO ₂	1 x 10 ¹⁶	1 x 10 ¹⁶
AOD	0.1 - 1	0.05
AAOD	0 - 0.05	0.02
AI	-1 - +5	0.1



NO₂ and SO₂ slant columns retrieved from GeoTASO spectra collected downwind of Missouri's Labadie power station on 13 August 2014 during a DISCOVER-AQ transit flight.

Key instrument parameters and target sensitivities based on TEMPO requirements.