GeoCarb

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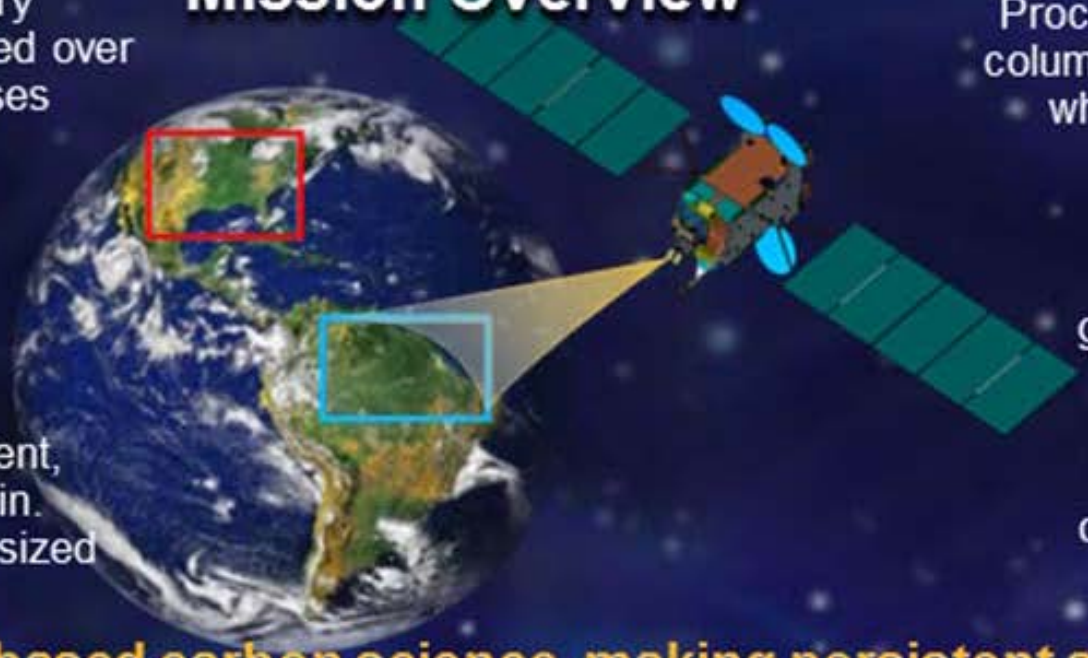
Mission Overview

Instrument mounted on geostationary communications satellite at 85ºW centered over North and South American landmasses

Instrument looks down, collecting reflected sunlight using a 4-Channel scanning IR spectrometer.

Scan is 2800km North-to-South in extent, and sweeps East-to-West at 39km/min. Enables multiple visits over continental-sized regions daily



Processed data yields high precision column mixing ratios of CO_2, CH_4 from which their fluxes are computed

Raw data and data products are calibrated and validated using ground truth from TCCON network

Distributed data enables community-wide flux estimation and source/sink assessment

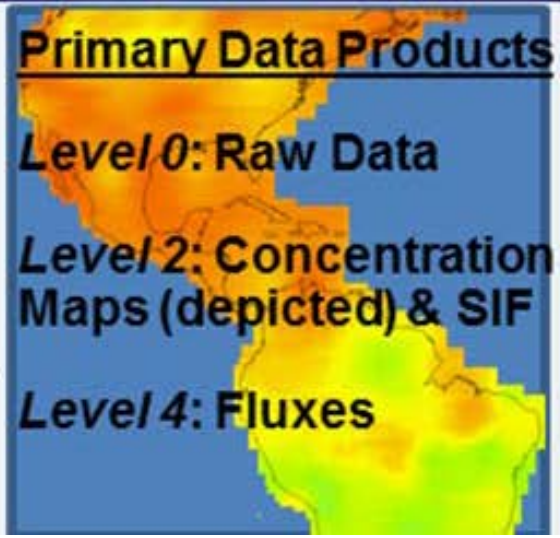
geoCARB transforms space-based carbon science, making persistent and accurate CO_2 and CH_4 measurements at high spatial and temporal resolution over continental-sized regions

Spectrometer's passbands are centered at:

0.76 µm – O_2 / SIF
1.61 µm – $CO_{2\ weak}$
2.06 µm – $CO_{2\ strong}$
2.32 µm – CH_4 and CO
CO_2 & CH_4 : Dominant GHGs
CO: for Combustion Attribution
SIF: Solar Induced Fluorescence

TCCON (Total Carbon Column Observing Network)

Supports Daily Calibration-Validation

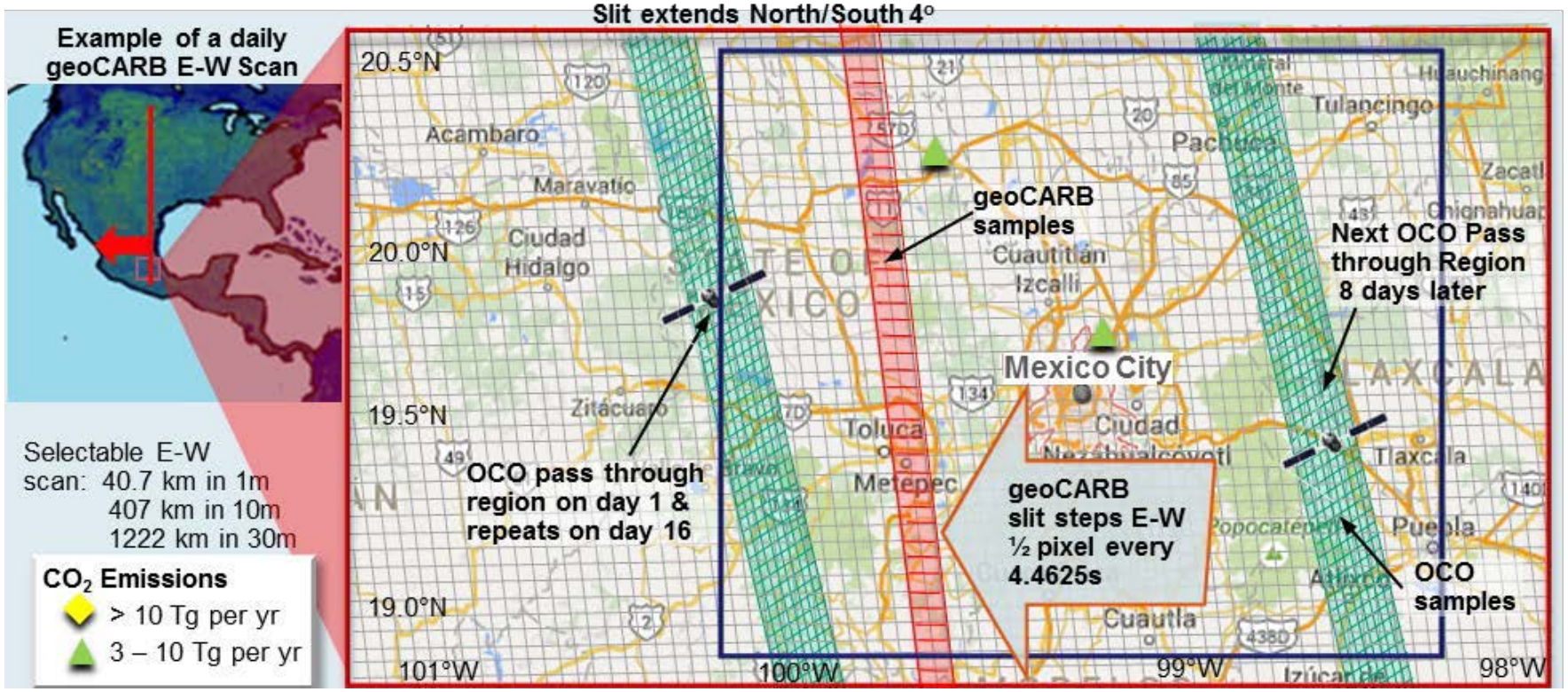


Ground Segment is Based at NASA Ames:

- **Massive Parallel Computing**
- **Leverages OCO-2**

N15097-ES-001-D

GeoCarb will provide OCO-2 class measurements daily and even diurnally across the domain with 3-5 km pixels (depending on longitude)



GeoCarb will provide L2 and L3 data products to the community

XCO2

XCH4

XCO

SIF

Inversions and flux results are not part of the mission baseline

GeoCarb open meeting Friday of the OCO-2 STM in Boulder, Oct 27.